

A concept model proposal study for Interactive Display set development

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Abstract— In consideration of a previous study for developing a next-generation sensible information display set, this paper proposes a development model of a more realistic type that is applied to user needs through an analysis of technology, trends, and patterns by needs analysis and development case research through a user survey. This is utilized in the creation of ideas and the preparation of a prototype, which will be pursued afterwards.

Index Terms— Displays, Interactive systems, Human factors

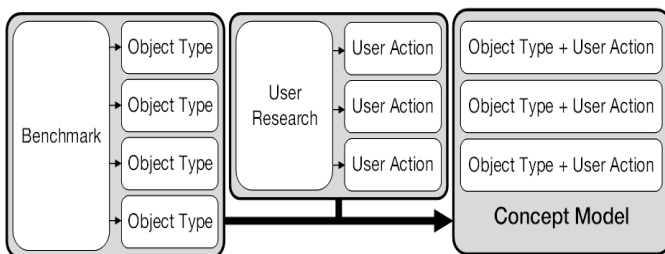
I. INTRODUCTION

1.1 Background of the Study

With the development of technology, the scope of the application of displays is increasing to many areas such as automobiles and buildings as well as home appliances. Also, the change from a passive pattern of mainly delivering information one-way to an interactive pattern that reacts actively to user intention has placed even more stress on the need for research into an interactive display set prepared with various patterns and functions.

1.2 Purpose and Method of the Study

This study aims to create new demands for new displays through an analysis of user needs for developing an interactive display set (IDS), and to promote the display industry through the development of display service and technology transfer for display sets.



[Figure 1] Study Process

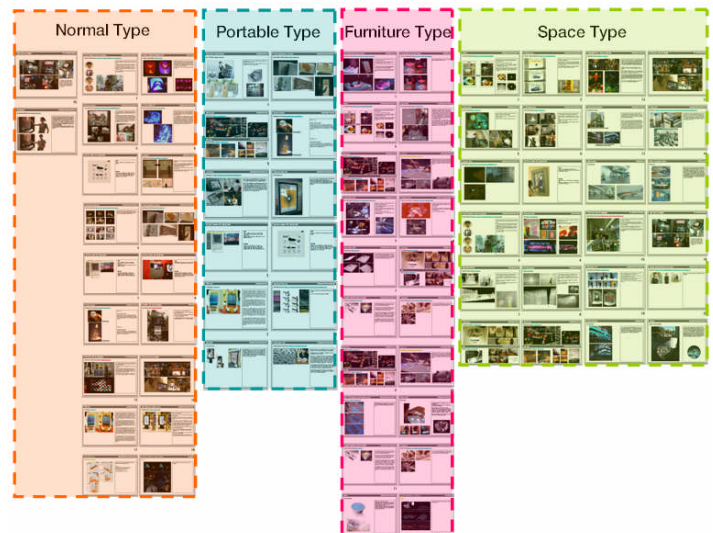
For a study method, the study conducted a survey into similar cases of interactive display, and gauged the possibility of

utilization in the future. Next, the study proposed a concept model by deducing an interactive display idea that has a high possibility of actual commercialization by obtaining the needs of users through a survey.

II. CASE STUDY AND CLASSIFICATION

2.1 Similar Existing Case Study and Classification

The study conducted an interactive display case study in order to help people identify and understand the trend of technology of the display industry through the case of concept products or actual products. For the case of an interactive display, the study pursued the collection of major data through the internet and literature and conducted cases in diverse fields covering advertising, spatial establishments, products, and interactive art.



[Figure2] Benchmarking object type grouping

2.2 Interactive Display Use Pattern

The pattern may be classified into the following four types based on a case study.

Category	Object
Normal Type	TV, Kiosk
Portable Type	Mobile, Frame
Furniture Type	Table, Tool
Space Type	Wall, Room

[Table1] IDS Concept Model

III. 3. USER SURVEY

In the user survey, the study conducted a survey for identifying the compositional factors of the surrounding circumstances and space through town watching in the environment where displays are set up and the environment where displays will be set up. The contents of the survey were utilized for obtaining key factors that might be utilized as basic data when creating ideas.

For the survey method, it was found that needs change according to the time stayed in front of a display through photo card sorting.

Category	Stay	Stop	Move
During Time	Long	Short	Pass(Gaze)
Contents	Variety, Interest	Accuracy, Clear	Easy, Automatic
Input	Direct, Indirect	Direct	Indirect

[Table2] User research key word

IV. OBTAINING A CONCEPT FOR IDS

The study obtained an interactive display type with a previous similar case study, identification of technology trends, and environment analysis. In the obtained interaction factors, the main factors include “response to users” and “inter-linkage with other devices”, and it was found that “familiarity with pattern” worked as a main factor in product pattern. Three keywords extracted in the user survey, namely stay, move, and stop, may be core factors for obtaining concepts; namely “detailed and accurate”, “easy and automated”, and “various contents” respectively.

Category	Object Type	Model	Contents
Stay	Normal Type	TV	Entertainment
	Portable Type	Frame	Entertainment
	Furniture Type	Table	Work
	Space Type	Room	Rest
Stop	Normal Type	Kiosk	Information
	Portable Type	Network Device	Search
	Furniture Type	Table(Kiosk)	Information, Search

	Space Type	Wall	Information, Search
Move	Normal Type	AD Board	Advertising
	Portable Type	Network Device	Sensor
	Furniture Type	Mirror	Check
	Space Type	Wall, Room	Information

[Table3] IDS Concept Model

Through this, it was possible to deduce a model by type according to the situation of “stay”, “move”, and “stop”, and the above models are developed in the form of “new use of familiar pattern” reflecting user needs by creating ideas based on needs obtained from [Table 2].

V. CONCLUSION AND FOLLOW-UP STUDY

Through the above research, the study obtained concept models of four types (a total of 12 types) by display usage time by users. This may be applied to service development while helping the creation of more in-depth ideas by proposing a concrete pattern according to an idea model.

The study conducted research into how the purpose of a display becomes different by time and how an interface becomes different by purpose through research into the display usage movement and purpose by staying time. The study developed prototypes through the creation of product development ideas and service ideas by summarizing this, and this was developed in a more detailed and realistic form through the visualization of the research.

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