

A Proposal of XB-Method, an Idea Generation System for New Services Using User Experiences

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Abstract. These days, due to diversifying standards of living, people seek such a sense of impression in products and services. We therefore developed XB-method, an idea generation system, in order to inspire the affecting experience, and that have been difficult through the conventional process in the current product planning. XB-method is a method which enables us to generate the affecting experience with multiplying the database of keywords statistically-extracted from user experiences by images of commodities in order to inspire the new product and services with the affecting experience effectively in user's perspective.

Keywords: Idea generation, Experience, Requirement definition, Emotion.

1 Introduction

These days, due to advancing technological innovation and diversifying standards of living, people demand the higher degree of satisfaction toward commodities including services. In order to fulfill such satisfaction, it is necessary to project products and services that can provide users a sense of impression [6].

We therefore develop this Cross Breeding Method (hereinafter called, XB-method) as an idea generation system. XB-method enables us to provide users products and services with the affecting experience and that have been difficult by the conventional approach in the current product planning. XB-Method is a method to generate the affecting experience with multiplying the database of keywords statistically-extracted from user experiences by images of commodities. In this study, we bring out activities of XB-method and propose it as one of idea generation systems incorporating with the fundamental principles of HCD.

2 Relevant Activity

2.1 The Current Product Planning

Table 1 shows the general process of product planning in Japan. It is necessary to continue to study the experience as users expect from the phase of research and analysis

Table 1. Process and methods used in the current product planning

PROCESS	PURPOSE	METHODS USED
1.Research & Analysis	To find and confirm the potential need	User research: Group interview, Depth interview, Questionnaire, Contextual inquiry, Diary method, others. Positioning analysis: Factor analysis, Image mapping, others.
2.inspiration	To develop the creative concept	Divergent thinking: Brainstorming, Brain writing, Mind map, Checklist, Matrix method, Mandal-Art, Attribute listing, Forced relationship, Focused object technique, NM method, Gordon, others. Convergent thinking: KJ method, Block method, Cross method, Fishbone diagram, Story method, Morphological analysis, others.
3.optimization	To objectively-define the best concept	Idea Evaluation: Weighting evaluation method, Comparison and evaluation, others. Identification of concept requirement. Communication of specific image: persona, scenario, others.
4.installation	To make the direction for the developer and the planning	Checklist of quality, others.

through that of installation as shown below table 1 in order to project the affecting experience resonated with users.

2.2 Problems of the Current Product Planning

It however requires us various kinds of know-how to go through the process as shown in Table 1. In addition, it is not easy to select an appropriate method in every phase since each development has a different purpose depending on in which industry and business category it belongs as well as in what situation developers stand. This problem discourage us from implementing effective product planning in many cases [6]. The following 2 problems interrupt us to inspire the affecting experience resonated with users.

(1) Problem of eliminating product's utility value from one's experience

There are many cases that the developer pursues the development by screening such brand images of novelty and competitiveness in the current product development. That is, they do not identify in the requirement definition phase such as delight and impression that users can experience only by using products and services. Unless

defining experience as utility value, gaps in awareness will occur among developers. As the result, it becomes impossible to implement effective brainstorming as it becomes ambiguous about the purpose of idea generation.

(2) Problem of being unable to respond to the pace of development

It is difficult to conduct surveys at every planning due to a rapid pace of development in the field of product and service planning. Actually it is still the case that developers repeatedly explore what to do by trial and error every time in many companies except the one specialized in the field.

The reduction of time and cost reduces the chance of survey, and this makes the development only with the developer's biased view. It is therefore difficult to inspire products and services resonated with users.

2.3 Positioning of Xb-Method, an Idea Generation System

We also study issues associated with the current product planning in order to make XB-method active for any developer to project products and services with the affecting experience. Table 2 shows the process and the activity of XB-method. It is characterized

Table 2. Process of product planning and the activity of XB-method

PROCESS	PURPOSE	ACTIVITIES in X-method
1-1. Research & Analysis	To find and confirm the potential need	(Collect and Analyze keywords)
1-2. Generalization of findings	To create materials for the generation	(Compile a data base of keywords)
2. Generation	To develop the creative concept	-Decide a theme and a subject to be developed. -Select a set of keywords of affecting components. -Develop images of keywords. -Create a good story by multiplying images -Exchange opinions. -Label the idea. -Organize the condition for scenario-writing. -Draw up the scenario.
3. Optimization	To objectively-define the best concept	(Evaluate the scenario in accordance with the purpose)
4. Installation	To make the direction for the developer and the plan	(Make a list of quality level in accordance with the purpose)

by the generalization of findings in order to use the result of the research and analysis efficiently and apply these effectively to the generation. This process enables us to utilize user profiles without doing a survey during the generation phase. We can define XB-method as a tool to be used in such a time-critical field of development.

3 A Proposal of an Idea Generation System

3.1 Scope of Xb-Method in the Process of Development

It is defined in HCD that in order to improve quality in use effectively, it is necessary to incorporate user profile from the upper-stream phase in the process of development. Similarly in XB-method, we consider that it is effective to use this method during exploring a direction of a product or a service in order to plan the affecting experience resonated with the user.

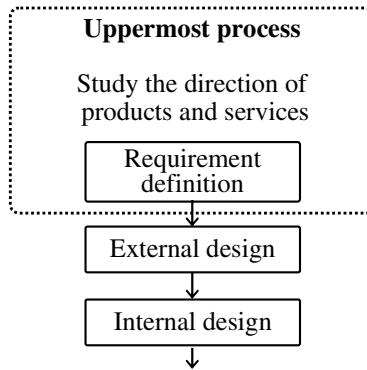


Fig. 1. The best timing of using XB-method is during the uppermost process: the earliest stage in the process of development

3.2 Scheme of Idea Generation

XB-method is a method to generate the affecting experience by multiplying keywords prepared in advance like Fig.2 by images of a product or a service to be designed. XB-method is defined as an idea forcing generation system that provides some accidental situation by multiplying keywords of images for commodity to trigger the user getting inspired a new idea.

4 Idea Generation Activity of Xb-Method

4.1 Database Used in Idea Generation

We use database prepared in advance when to generate ideas with XB-method. The database is something like Fig.2. 3 keywords are organized in a set.

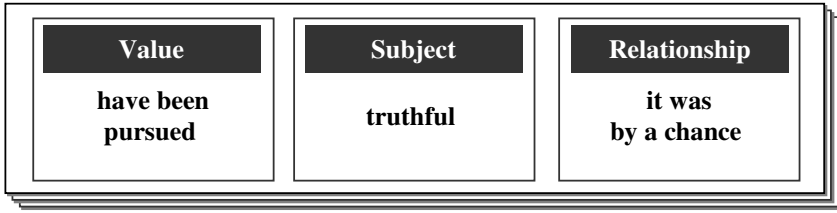


Fig. 2. The set of keyword is the result of reviewing each one of 3 components of user experience: a sense of value, subject and relationship as shown in Table 3

Table 3. Three Components of User Experience

Label of Component	Scene of appearance	Definition
Value	In what perspective?	A sense of value that people cherish before having a relationship with the subject
Subject	For what subject?	Fascinations or characteristics of the subject
Relationship	In what relationship?	The way of involvements such as perceptions and experiences, and the context of the time

The keyword is extracted from 400 affecting experiences provided through Web Questionnaire. We extract it according to the way keywords were appeared in the episode with quantification method III and then classified these into 7 patterns with cluster analysis method. The database of keywords is the data being calculated keywords with the high appearance ratio for each pattern [1].

The database is something that all the ingredients needed to generate the affecting experience are extracted so as to affect effectively each other.

4.2 Activities of Idea Development

Below is a description of the idea development activity using XB-method. This case study shows a way of developing a concept for a new car navigation system.

Activity 1. Decide a theme and a commodity to be the subject of the idea development

Decide a theme and a subject to be developed, such as a kind of interactive systems, an image of a commodity. For example, it is a case of a car navigation system.

Activity 2. Select a set of keywords of affecting components (Use the database)

Select a set of keywords from keyword flash cards at an option. Here is an example of choosing one which indicates following 3 keywords: [have been pursued], [truthful] and [it was by a chance].

Activity 3. Develop images of keywords

You may put the selected keywords into different words having the same meaning with visualizing some images of commodity you set. For instance, it is to develop images by putting the keyword [it was by a chance] into [it was displayed by accident] with visualizing a car navigation system.

Activity 4. Create good stories by multiplying images

Create good short stories by multiplying images of all 3 keywords being developed at the former step. For example, in case there are keyword images of [Favorite], [Place of historical origin] and [it was displayed by accident], we can develop so as to include all the 3 components and create a story as follows: [A function to inform a historic area when riding past there if the user register a favorite in advance.]

Activity 5. Exchange opinions each other

It is to develop images more deeply toward the good story under development by exchanging opinions with other members and to add further images in particular. Even if having no specific image of a function in the past activities, it is possible to get inspired and develop it by exchanging ideas with others.

Activity 6. Label the idea

Select one idea out of others under development and label it in a word which expresses its content. It is the activity to organize the characteristics of the idea with reconsidering what kind of idea is created.

Activity 7. Organize conditions for scenario-writing

It is ideal to create a scenario which represents an idea in order to store an affecting story in XB-method. In preparation for drawing up a scenario, organize and itemize the targeting user, the situation such as a time and a place and delight the idea provides during this Activity 7.

Activity 8. Draw up a scenario

Draw up a narrative scenario to represent what kind of delight that the idea will provide. It becomes easier to create the one in user's perspective by including every component of user experience: [a sense of value], [subject] and [relationship] that have been developed until this activity.

5 Case Study

We conducted idea generation workshops with XB-method for 5 times from Sep 2007 to Oct 2008. Around 80 people were participated in the idea generation activities as shown in Table 2, and sessions required 90 min. to 120 min. Each participant

conveyed the idea generation and did some brainstorming session in order to exchange opinions with others in a group of 5 people.

Participants are from various business fields such as automobile, IT service and house hold goods industries. Their professions are variable as well such as product planning, CS, usability engineer and others.

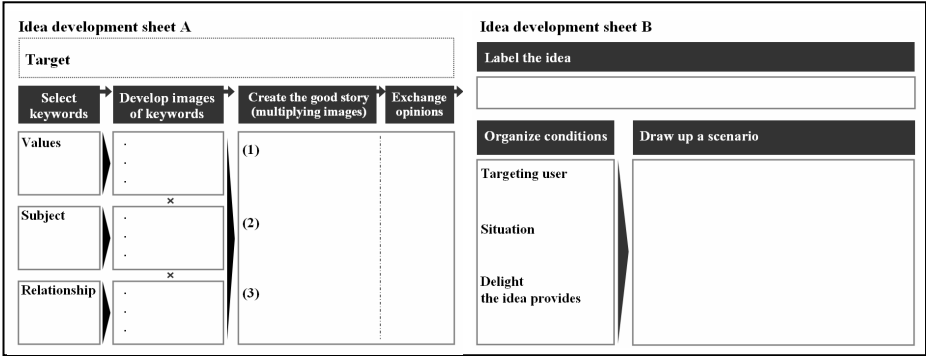


Fig. 3. Participant conveyed the idea generation using the idea developing sheet

5.1 Effect with Proven

In this study, we recognized following effects based on feedbacks from participants about the idea generation using XB-method.

First, it enables users to generate ideas effectively even for their first time. It is conducted systematically in a systemized way of multiplying keywords and it therefore is able to generate around 3 ideas per participant within 1 hour to 2 hours. We can expect an absolute performance in case of requiring a number of ideas.

Second, it is highly possible that users can meet with better-than-expected ideas. XB-method forces users to generate ideas to create good stories by multiplying keywords and offers them the condition of generation without attempts with stimuli.

Third, it enables us to inspire an idea in user’s perspective. We can explore the affecting experience for users at anytime during developing 3 components of user experience: a sense of value, subject and relationship. Furthermore, it is capable to propose the relationship with users by drawing up ideas in the form of scenario.

6 Conclusion

We developed user experience-driven XB-method so that anyone can plan products and services that can provide the affecting experience.

As the result of this study involving approximately 80 people, it is proved that XB-method has advantages in product development that no other methods do. It is to generate a new product or a new service effectively based on an affecting scenario in users’ perspectives. XB-method, an idea generation system in users’ perspectives, can

be therefore described as the one of HCD methods which is applicable to the product planning.

7 Future Activity

Regarding the database used in the idea generation, it is necessary to identify the capacity of each affecting pattern for each keyword flash card so that we can select the one effectively responding to a product or a service to be developed and users to be targeted by understanding the capacity.

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