

Creating Customer Experience by Emotional Design

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Abstract. This study aims to analyze the relation among the theory of customer experience which Bernd H. Schmitt insist, the information process of Kansei in Kansei engineering and the theory of emotional design which Donald A. Norman do. Also, we have examined its relation to build customer experience using the information process of Kansei and emotional design, based on three case studies.

Keywords: Customer Experience, Kansei, Product Design, Design Process, Customer Experiential Design

1 Introduction

In today's harsh business environment, in order to differentiate one's products from those of other companies and create a competitive advantage, it is an essential requirement to develop products that attract customers and social groups. Especially, product designs that appeal to the senses and behavior of customers are still considered to be important themes.

Studies in relation to these themes include customer-experience marketing focusing on the experience of the customer; user interface research in cognitive psychology, focusing on the psychology of the customer; and *kansei* marketing focusing on the senses and perceptions of customers and how they like the product. These studies have been conducted from many aspects of business.

In this study, we consider the theoretical positions and relationships among the theory of customer experience by Bernd H. Schmitt; the *kansei* information processing process proposed by *kansei* engineering and *kansei* science; and the three elements of Emotional Design by Donald A. Norman. Through case studies, we also consider what kinds of design processes exist and how these processes can affect the customer's experience, which is difficult to manipulate in terms of product design in product development.

2 Previous Research on Customer Experience, *Kansei*, and Design

2.1 Customer Experience

Customer experience, in which the customer is recognized as a "creature of reason and sensibility" (Holbrook 1982), refers to the customer's own experience in the situation of consumption of products and services. In Figure 1 it is classified into five values: SENSE (sensory), FEEL (emotional), THINK (cognitive), ACT (behavioral), and RELATE (relational) (Schmitt 1999).

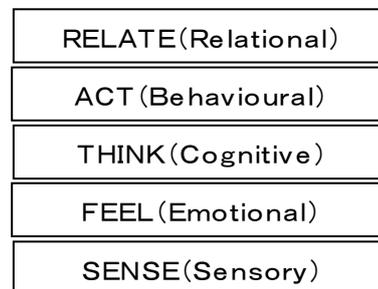


Fig. 1. Strategic Experiential Module(SEM)

Here, we address the comprehensive experience related to consumption by customers; what we stress is not simple products and services but the customer experience, which is based on the situation in which the consumption occurs. The basic idea is rooted in the concept of the customer. It was Morris B. Holbrook who understood customers as "creatures of reason and sensibility;" he also said that "Customer consumption is often affected by emotional appeal" (Holbrook 1982).

Other theoretical studies focusing on customer experience include the strategic conditions for achieving the customer experience (Nagasawa and Yamamoto, 2005); customer experience led by design (Nagasawa and Yamamoto, 2007), and the relationship

between customer experience and the value of hospitality (Nagasawa and Fujiwara, 2007). The case studies of customer experience include many case analyses of domestic and international brands (e.g. Hermes) and traditional companies.

Customer experience has been studied from a theoretical viewpoint in the form of case studies, but the potential of customer experience also needs to be considered from a practical business viewpoint.

2.2 Kansei

The term *kansei* has various definitions, including philosophical, epistemological, and psychological. *Kansei* can be understood to be related to the irrationality and sensibility that conflict with reason and intelligence. Studies of *kansei* have been approached from various perspectives, such as *kansei* marketing, *kansei* science and engineering, and *kansei* design. However, they have been conducted in the field of cognitive psychology as studies of information processing, which deal with human psychology and phenomena of the mind (Lindsey 1977).

Viewed from this perspective, *kansei* can be understood as a series of information flows in human sensory receptors, “Sensory → Perception → Cognitive → Emotional → Representative,” which is produced by external stimuli such as products and services (Figure 2).

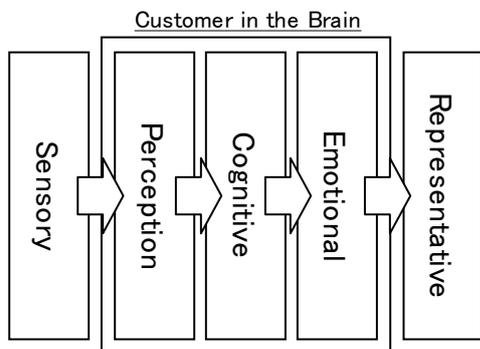


Fig. 2. Information Process of Kansei

Methodological studies have also been conducted to develop products and services by utilizing *kansei* (Nagasawa, 2002).

As above, *kansei* has been studied mainly in relation to human psychology. The study of *kansei* and the business related to it are now attracting attention.

2.3 Emotional Design

Recent product-design research has covered various aspects, including user-centered design focusing on

humans, *kansei* design, eco design focusing on environmental sustainability, and universal design covering a wide range of consumers.

The representative Emotional Design research has been that by Donald A. Norman, a cognitive psychologist. According to him, human characteristics can be classified from the perspective of brain function and human emotion into three levels: a visceral level, including an automatic and natural layer; a behavioral level, including control of daily activities; and a reflective level, including a layer of deliberation by the brain, such as conscious thinking (Ortony, Norman & Revelle, 2004). These three levels interact and affect each other. The visceral and behavioral levels are driven by the perception of sensory organs. The reflective level is driven by conscious thought, and it monitors and constantly controls the visceral and behavioral levels (Figure 3).

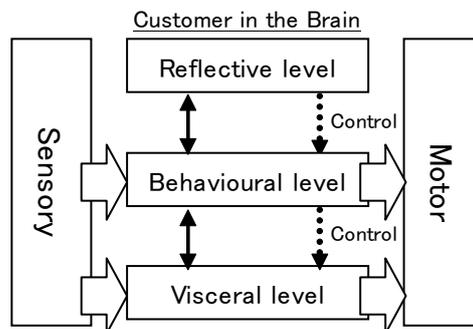


Fig. 3. Three levels of Brain Processing

Each of the three levels of human characteristics requires a corresponding design, and it is important to take a design approach to products and services at each level (Norman, 2004)

In this approach, focus is placed on how product design is affected by scientific understanding of human cognition and emotion, and not much is mentioned about the customer experience and how to use it for product design. However, product design plays a significant role in customer behavior through consideration of the design of products and services on the basis of the three levels.

2.4 Summary

The studies mentioned above have focused on the emotional and psychological aspects of the customer, not on the customer experience. Studies from an experiential viewpoint are needed to create product design that appeals to customer experience. In the next chapter, theoretical considerations will be made on the basis of customer experience.

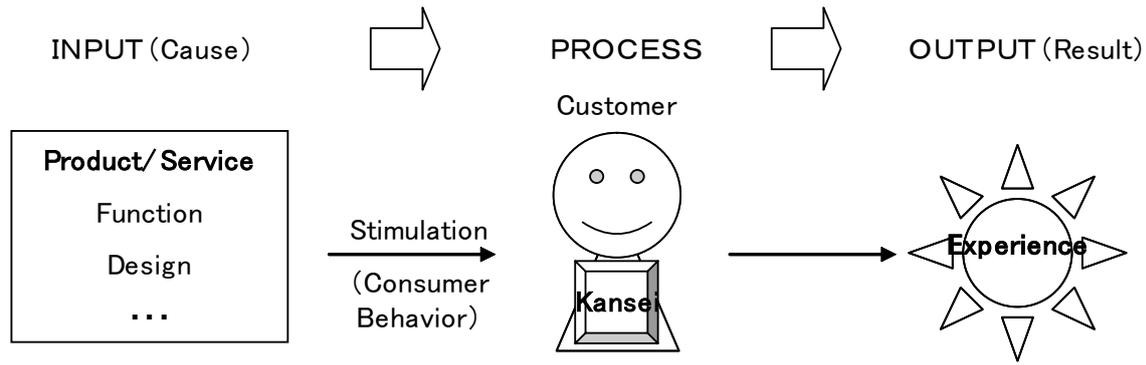


Fig. 4. The conceptual model of customer “to experience”

3 Comparative Theoretical Studies

3.1 Assumed Position in Each Theory

A study that focuses on customer experience starts with consideration of the essential aspects of that experience. Customer “experience” means that customers are physically stimulated by using the products and services and react to these stimuli via internal psychological processes. In other words, products and services trigger stimuli that are processed internally. This can be considered as a series of IPO (INPUT-PROCESS-OUTPUT) processes that yield the result of “Customer Reaction = Experience” (Figure 4).

From this perspective, each theory discussed in the studies mentioned above can be summarized as in Table 1.

Table 1. The expected position for each theory

IPC process	Theory	Scope	Position
INPUT (cause)	Emotional Design	Broad Design for Products/Services	Objective
PROCESS	<i>Kansei</i>	Information Process based on the Psychological Side of the Brain	Eclectic
OUTPUT (Result)	Customer Experiential Marketing	Comprehensive Experience centered People	Subjective

The issue of customer experience marketing is to classify the experience of customers through the consumption of products and services, and to develop products and services by creating a marketing strategy

that will create the experience. This means that the focus is on experience as an end result. Subjective position of the consumer is taken into account in this theory.

In the consequent understanding of the customer experience, there seem to exist some processes. The information-processing model described in the definition of *kansei* seems to be appropriate. This is because, in the issue of *kansei*, the physical and psychological processes within the human mind are classified from the perspective of information processing and developed as a series of processes from “Sensory → Perception → Cognitive → Emotional → Representative.”

In this processing, any stimuli that occur are considered necessary, and the design that creates the stimulus from the products and services is considered appropriate. This is because, in the issue of emotional design, behavior in consuming products and services is considered to be related to the customers’ emotions and is classified according to the three levels of visceral, behavioral, and reflective design. The designs of products and services are therefore developed on the basis of these three emotional levels. Objective position is taken into account in this theory.

From the above discussion, the scope of each theory discussed is clarified by considering the customer “experience.” On the basis of this consideration, the relationship between the theories will be discussed.

3.2 Study of Relationships based on Theoretical Position

First, we examine the relationship between emotional design and the information processing of *kansei*. As mentioned, Norman explained that the design of products and services in a broad sense comes in three types, and there is one level of processing in the brain in response to each design type. This means that products and services must be designed according to the level of processing in the customer’s brain. On the

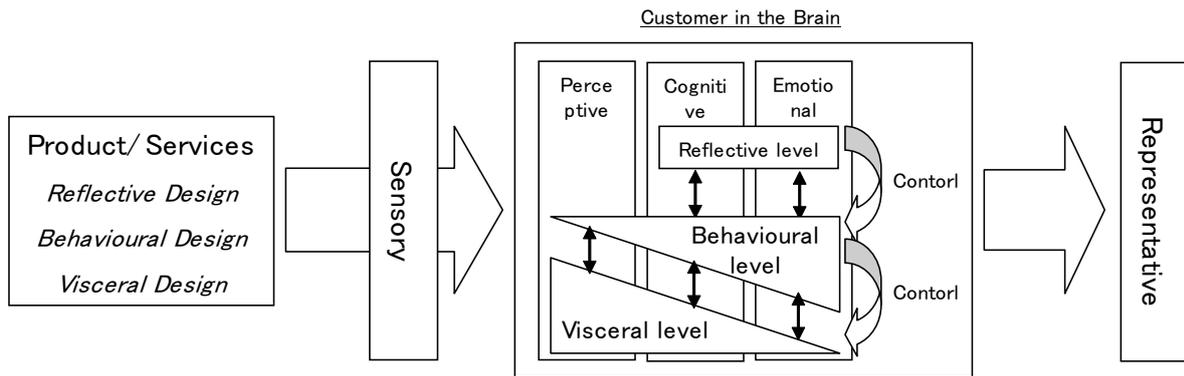


Fig. 5. The relation between Norman’s emotional design and the information process of *Kansei*

other hand, in the process of information processing for *kansei*, the first (“sensory”) process, the final (“representation”) process, and the middle “perception/cognition/emotional” process refer to the activities occurring in the customer’s five sense organs (sensory receptors), in the customer’s body (the effector), and in the brain, respectively.

This perspective is summarized in Figure 5.

The information processing of *kansei* is a series of sequential activities in the customer’s brain, each of which is related to Norman’s processing levels. According to Norman, the visceral and behavioral levels are driven by perception, and the reflective level is driven by thought. It is considered that the reflective level does not exist in “perception,” but in “recognition.”

Therefore, from a perception viewpoint there seem to be two perceptions, “Visceral perception and behavioral perception.” In addition, from a cognitive viewpoint there seem to be three cognition types, “Visceral cognition, behavioral cognition, and reflective cognition.” From an emotional perspective there seem to be three types, “visceral emotion, behavioral emotion, and reflective emotion.” The visceral level accounts for a large portion of perception. In addition, the behavioral level accounts for a large portion of emotion, which works under the influence of the reflective level, and it seems that the

visceral and behavioral levels account for similar proportions of cognition, which is influenced mainly by the reflective level.

On the basis of the above discussion, visceral, behavioral, and reflective designs as part of emotional design are considered to have a relationship in which the stimuli from products and services are processed at each level corresponding to “perception, cognitive, and emotional” activities through sensory processes to appeal to the *kansei* of customers.

Next, we examine the relationship between the information processing of *kansei* and customer experience. The customer experience has been classified into five strategic experiential modules. SENSE is the experience based on the five senses of customers; FEEL is based on the emotions of customers; THINK is based on the cognition and interpretation of customers; ACT is based on the behaviors of customers; and RELATE is based on social relationships including customers. These are considered to be the results of each activity that occurs as part of *kansei* information processing. They can be organized as in Figure 6.

As mentioned, in accordance with Norman’s process levels, at a given level of processing the customer’s perception is stimulated by visceral perception and behavioral perception to create SENSE(sensory experience). The customer’s cognition

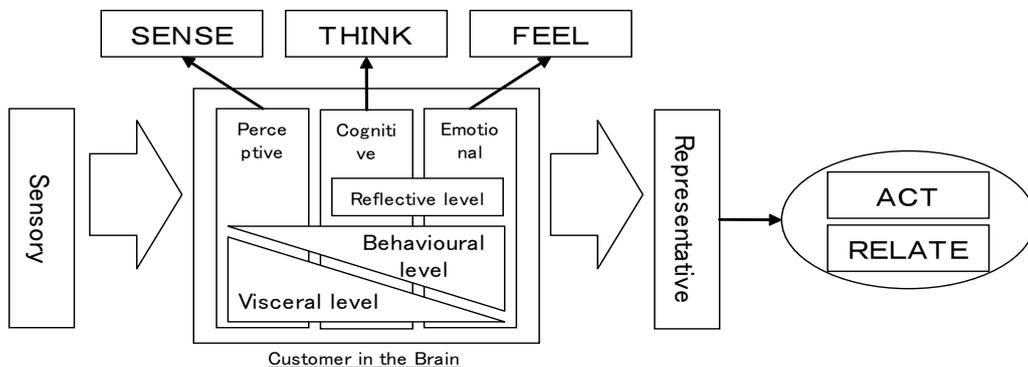


Fig. 6. The relation between the information process of *Kansei* and Schmitt’s customer experience

then occurs by the unification of visceral, behavioral, and reflective cognition to create THINK (the cognitive experience). In addition, the customer’s emotion then occurs by the unification of visceral, behavioral, and reflective emotion to create FEEL (the emotional experience). As a result, the customer’s behavior is considered to be motivated through a “representative” process.

The “representative” process in *kansei* information processing is related to ACT/RELATE in the customer experience. This refers to the behavior of the customers themselves through information processing of the “representative” process. The customers themselves change their behavior and behavioral styles to create ACT (i.e. the behavioral experience). In addition, because many other customers receive similar products and services and have similar actions, they go through a similar process and have a conscious sense of connection with each other. RELATE (the relational experience) is created by this sense of connection and stimulates customers to take action through a sense of social relationship.

On the basis of the above discussion, it can be understood that the customer experience is created through the information processing process of *kansei*. Visceral, behavioral, and reflective design motivates the information processing process of *kansei* through products and services in which emotional design is realized. In such a process, there is a series of creations of customer experience through the customer’s experience. In the next section, case studies are given to examine the specific aspects of the flow.

4 Case Study

In this section, two cases are analyzed to illustrate the above discussion. The movie Finding Nemo and the “New Beetle” vehicle were chosen for the study. The reasons for this selection are:

1. To make it possible to perform an analysis by Schmitt’s customer experience based on Norman’s emotional design
⇒ Movie *Finding Nemo*
2. To make it possible to perform an analysis by Norman’s emotional design based on Schmitt’s customer experience
⇒ “New Beetle” vehicle

In the following section, the two cases are examined individually.

4.1 Movie “Finding Nemo”

Recently, PIXAR movies such as Finding Nemo, Toy Story, and Up have attracted attention and have been successful.



Fig. 7. PIXAR Movies (Source : PIXARM Hom Page)

These movies are part of the service and entertainment industries and appeal to the experience and *kansei* of customers. They are therefore useful for case studies. We attempted to perform a case analysis by using one of PIXAR’s typical movies.



Fig. 8. “Finding Nemo” (Source : PIXARM Hom Page)

The storyline of Finding Nemo is as follows. Nemo, a juvenile clownfish born on the Great Barrier Reef in Australia, is kidnapped by a human diver on the first day of school when he was 6 years old. His father Marlin starts out on a journey to get him back with the help of the blue tang, Dolly. This movie broke box-office records in US animation history and was a big hit in many parts of the world.

The movie has many components, such as the techniques of shooting, lighting, audio and video processing; the skills of the directors and photographers; the story (stories and events, characters, etc.); and the screenplay, voiceover actors, and actresses. The field of animation is particularly characterized by production design that creates images similar to live-action images; the video techniques that support these images; a layout that considers virtual camera angles; the actual production of the animation; the recording of the actors’ voices; the overall sound design; and the final rendering process.

When the consumer’s visceral level is stimulated by the layout created by the camera angles and lighting

conditions, the acoustics (including background music), the image processing, and the animation techniques—all of which offer a sense of reality—the viewer is driven to react automatically. For example, in the scene when *Nemo's* father Marlin is chased by the brutal shark Bruce, the audience is stimulated by the speedy imagery and music and feels the thrill and excitement of the attack. Other scenes beyond the imagination come one after another—such as being attacked by deep-sea fish and seagulls and swallowed by a whale. Audiences feel as if their instincts are stirred up.

The consumer's behavioral level is stimulated by the scenario and story, which invite them into the fantasy world, and by the skills of the voiceover actors. Consumers are attracted to, and glued to, the story and are caught up in the emotional flow of the movie by having a sense of identification with the characters. For example, when parent-child affection and the scenes of overcoming hardships, including the shark attack, are imagined, the audience loses track of time and gets into the movie. Audience members feel as if they, not Marlin, have searched for *Nemo*. They feel like looking for *Nemo*. This shows that they have escaped, and are released from, reality.

The reflective level of the audience is stimulated by messages from the movie; the portrayal of the characters; the events; the analogies and metaphors for the real world, which produce deeper meanings than are created by the surface characters and the story. For example, by not simply understanding the story as the tracking of *Nemo* but observing it logically, viewers can have the special joy of finding out the meaning behind the story, such as *Nemo's* growth and adventure and the stronger parent-child affection than the father, Marlin, expected. It is an analogy of real society.

On the basis of the discussion mentioned above and consideration of the experience created in the audience, in SENSE an experience is created in which the audience's five senses regard the underwater world in the movie as reality. This is promoted by the speedy animation and music, together with the sense of reality and identification with the characters, *Nemo* and Marlin (i.e. the sense of representation). In FEEL, a sense of willingness to look for *Nemo*, together with the feeling of thrill and excitement and the joyful experience of understanding the meaning behind the search, are created. In THINK, the audience realizes the essential element behind the story, namely parent-child affection, and it has the experience of marveling at the depth of production.

Although in reality the audience does not act, in ACT an experience is created in which the audience members virtually behave the same way as the characters: i.e. they escape from reality and have a

sense of identification with the characters (e.g. *Nemo* and Marlin). Finally, in RELATE, the experience of understanding the analogy and metaphor of real life—such as the parent-child relationship and affection and child education—is created. This also creates a sense of connection with other parents (especially fathers) about parent-child affection and attitudes toward child education and shared feelings about the movie.

As mentioned above, we have analyzed the movie *Finding Nemo* in the category of “movie, service industry.” As a result, we have verified that successful movies include the process of creating the value of “customer experience,” during which the emotional designs in products and services undergo *kansei* information processing to create customer experiences in the process.

4.2 “New Beetle” Vehicle

Next, we analyze the case of the long-established “New Beetle,” by Volkswagen.

Before its production was terminated in 1979, the Volkswagen “Beetle” had been a famous vehicle (see Figure 9, left). After Beetle production stopped, Volkswagen cars did not sell well and the company suffered huge losses worldwide.

However, in 1993, the president at the time, Ferdinand Piëch, directed the development of a new Beetle. The prototype was exhibited at the Detroit motor show in 1994 and received great acclaim. This set off an increase in demand from customers. The “New Beetle,” with its renewed concept, was born, and Volkswagen recovered its former glory (Figure 9, right).



Fig. 9. 1970's Beetle (Left) and New Beetle (Right) (Source : Volkswagen Homepage)

This New Beetle has a shape similar to that of the previous Beetle. There seems to be no difference in the style, which is a combination of curves that express a unique appearance and shape. The visceral levels of customers are stimulated by this rounded appearance and shape, and they begin to feel warmth by visually differentiating the car from others.

In addition, from a functional perspective, the new Beetle is very different from former models. It is equipped with modern facilities, such as a power

source for mobile phones, a steering wheel adjustment mechanism, an excellent audio system, and remote-controlled door locks. It has a relatively big interior space with state-of-the-art automotive technologies that belie its appearance; it offers improved running capacity but has a retro look. The customer’s feelings about wanting to drive the car are stirred, and the customer’s affection for “my own unique car” is built up by actually driving it.

The New Beetle has changed the traditional idea of cars as mere means of transportation. The car has not lost its old atmosphere: it conveys a “rediscovered” impression of being a future-oriented, late-model car while retaining a retro look that causes nostalgic feelings.

On the basis of the above discussion, we can consider the customer experience created by users of the New Beetle. In SENSE, the unique round shape and the driving experience inconsistent with the New Beetle’s retro look appeal to the user’s five senses to create an experience in which the visually striking identified and aesthetic values of the car are emphasized. In FEEL, warm feelings are produced by the rounded shape, as is a feeling of affection for “my own unique car,” and the experience of nostalgia is further created by the consumer’s recognition of the value of retro. In THINK, the consumer recognizes that the product is a future-oriented, latest-model auto with state-of-the-art technologies that retains a retro look; this gives an experience of amazement at the perceived difference.

ACT has the power to change the customer to a unique person by giving them the experience of driving “my own unique car.” Here, the car carries the connotation of being a “lifestyle car” that can change customer behavior. Customers can have the experience of creating their own world by changing their behaviors. Finally, in RELATE, by taking a look at, and driving, the New Beetle, older generations, who were young in the 1960s, can re-experience the good old days and feel a sense of connection with the car. On the other hand, young people feel that the old car is chic and cool, and they develop a new sense of connection with it. This creates the experience of a renewed sense of connection between current younger and older generations.

We thus analyzed the case of the New Beetle in the difficult category of “automotive.” Volkswagen is a good example of a successful comeback with great fanfare. Our analysis verified that the customer value of “customer experience” was created by the emotional design of products and services through *kansei* information processing.

4.3 Summary of case studies

Through our analysis of these two cases, we have shown that the customer experience is created by the stimuli of products and services, and that these stimuli are the emotional designs embedded into the design of these products and services. This can only be said to be true from the perspective of the customer experience; it is not necessarily of value to the customer. The cases in this study were selected on the grounds that customers basically find value in their experiences.

In addition, although these case studies specifically concerned Western products and services, the discussion can be applied to Japanese products and services. This aspect needs to be studied in future

4.4 Process of Product Design

In designing products and services, it is important to assume “usage scenarios” of how they are consumed and used by real customers. In the assumption of these usage scenarios, the customer’s experience is pictured and designed as part of the marketing of strategic objectives. As a guide to the design and development of products and services to realize these scenarios, the process of emotional design is considered (Figure 10).



Fig. 10. Overview of the product design process with a focus on the experience of the customer

In addition, we mention here the method of scenario deployment in quality function deployment (QFD) as a way of expanding the required product quality on the basis of the customer information obtained by questionnaire. In this method, the scenario in which customers use products and services is assumed from the perspective of 5W1H. The method is used to design and develop products and services by considering the customer’s requests. Scenario assumption focuses on how the products and services are used; functional benefits are mainly considered, and the perspective of what customers actually experience is not included. Therefore, it is possible to consider a method of “quality experience deployment”

that extends from functional benefits to customer experience as a perspective on the use scenario. This theme needs to be studied in future.

5 Conclusion

In this study, we have summarized the theories about the customer experience and have discussed the central position of the theories and the relationship between the theories. In addition, we attempted an analysis of two cases one involving a movie and the other a car. On the basis of this discussion and case analysis, the products and services in which the concept of emotional design is applied can be positioned as customer stimuli (i.e. stimuli of consumption behavior), by which the customer experience is created through kansei information processing. We have also verified the fact that this process is experienced by the customer.

In terms of customer experience, which is difficult to manipulate and control, first, the customer's experience can be targeted by asking the question, "What kind of experience do you want customers to have?", and the products and services can be designed by a process in a direction opposite to that discussed in this study (find the goal of the customer experience → study *kansei* information processing → study the design to achieve the goal). It is possible to realize the product design by targeting the customer experience in such a design process. This can be seen as a new product design methodology, which we define as "Customer Experiential Design" and which makes this study unique.

In conclusion, we have considered and analyzed the process of design of products and services by focusing on the customer experience. The experience of customers, which is difficult to manipulate and control, has been clarified, and it is possible to implement product design in such a way as to realize the experience of the assumed customer. In addition, in this study, we have made suggestions about product design and the design process, focusing on the customer experience itself, as well as the related research and business.

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