A study on Ubiquitous Resting Space for Department Store

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Abstract: ユビキタス社会での変化の中で、商業空間は多次元的要素を含めて消費者の求を満たすことができ複合的な空間構成が強調されている。デパート内の休憩施設は空間的または商業的な制約による限界を持っている。本論文ではユビキタスのシステムを適用する研究を通じて、デパートを訪問する顧客にとって休憩空間で休憩を取りながら、同時にデパートからの多様なサービスを提供することができる計画案を提示する。デパート側には売り上げの増大効果が期待できるし、消費者側には多様な商品の情報と選択の機会を与えることで、両側に助けを与えるのを研究の目標にする。

Key word: Ubiquitous, Department store, Resting area, Information providing device

1. Introduction

1.1 Background

A department store as a business area has developed in a complicated and multifunctional way with the ubiquitous technology developed by society. According to these changes, a department store needs to provide more public spaces while keeping the existing sales area. In the case of department stores which started their businesses after 1980, to satisfy consumers' demands, they accepted new business strategies and provided more cultural or resting areas corresponding to consumer's tastes. The spatial design of a department store is focused on their sales areas and provides them with the most space. However, the consumers have various and personalized tastes and lifestyles according to social changes and they desire to pursue a better quality life. Regarding these kinds of changes, a complex and convenient spatial design including three-dimensional elements is emphasized to satisfy the consumer’s desires.

1.2 Objective and Methodology

The resting area in a department store is limited by the space and businesses. However, the resting areas now in department stores don’t satisfy their original purpose. This research is for designing of resting area serviced by ubiquitous technology which will improve the connections between the shopping area and resting area, the resting area and consumers, and consumers and shopping area. This study will also show how a department store that provides varied information for consumers gains a better sales benefit for itself by applying ubiquitous technology. The methods to approach to this study will be as follows.

First, we will research the theoretical concepts of resting areas in a department store through searching documents and describe the characteristics of consumers using the department store. Secondly, we will examine the spatial elements of resting areas in a department store and research the methods of how to improve it as a space with ubiquitous technology. We are also going to research, in detail, how to apply ubiquitous technology to resting areas. Third, based on this research, we will design a resting area which matches consumers' satisfaction and improves sales by applying ubiquitous technology.

2. Considerations for resting areas in a department store

2-1. Concepts for resting areas in a department store

The resting area means the place exempt from the sales and managing spaces, it is the area where resting facilities are provided and the location of service areas for consumers in which don't make any profits. The elevators, escalators, hallway facilities, rest rooms, patio spots and fountains designed for the consumers to take a rest at are designated as the resting area.

2-2. The function of resting area in a department store

The function of resting areas in a department store must be based on providing a comfortable rest for consumers. Also it can give better information to consumers or a department store can create good strategies for sales through the consumers’ varied shopping patterns. Department stores located in a city may have difficulty to provide satisfactory resting areas because of the expense of land. However, providing a cozy resting area can create other benefits such as holding consumers longer in a department store and giving a good impression of the business. The biggest changes of circumstance in a department store depend on the consumption patterns of consumers. According to consumers' various desires, a department store must provide a good environment for the enjoyment of shopping and fulfill their satisfaction. Regarding this change in shopping trends, a department store must offer various services to consumers as well. The resting area will be the public place where there will be space for meeting, the acquisition of consumers' information and services as well as product information.

2-3. The state of resting areas in a department store

We can divide the patterns of use of resting areas in a department into three categories: Rest, Waiting and conversation with company. Approximately, half of consumers use the resting area for rest and the other half use it for waiting, having conversations or other purposes. Resting areas mainly consist of four types, as shown in Table 1. Among four different types of
resting area we will choose a resting area type which doesn't have any purpose except rest and research the details of it.

3. The types of resting area

3-1 The concept of resting area

The resting area serviced by ubiquitous technology provides a comfortable space for rest while simultaneously giving consumers access to various services. This area is designed with the behavior of consumers who want to take a rest but feel bored in mind. Therefore, the resting area that provides ubiquitous technology targets consumers who want to take a rest alone or spend their time there. The service provides the consumers with information by installing screens on the seat or kiosk placed in resting area. This service will increase the sales profits for a department and give various information and choices for consumers.

3-2 The applicable technology and supporting service

The resting area serviced by ubiquitous technology allows consumers to search for useful information using the technical equipments in the department store, suggests reasonable choices for the consumers’ and increases their consumption. For example, using the mobile device provided by a department store, the consumers can search for their favorite products or items of curiosity such as those on sale or used products in the resting area. The applicable technology related to this supporting service is shown in Table 2.

<table>
<thead>
<tr>
<th>Name</th>
<th>Contents</th>
<th>Picture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile pad</td>
<td>Heuristic idea for the small sized information terminal to use when we move. This is an appliance that recognizes a code attached to products or clothes using RFID technology and exchanges the information with an existing IT system. With this terminal it is possible to check the information received on products. Also, this can provide better information through images of the product by inputting a savings code onto large sized information equipment.</td>
<td></td>
</tr>
<tr>
<td>Kiosk</td>
<td>This is a small structure which displays information for pedestrians. A kiosk is attached to a computer and a display screen is used in department stores or museums. The kiosk doesn’t take much space and people can access the computer easily by using the touch screen.</td>
<td></td>
</tr>
<tr>
<td>Display terminal</td>
<td>The display terminal is a conversational video screen where users can receive visual information immediately whenever they visit and users can control the screen through a signal control while they watch the video screen. Users can provide detailed information about the department store or museum.</td>
<td></td>
</tr>
<tr>
<td>Smart mirror</td>
<td>The smart mirror uses recent displaying technology. The smart mirror is similar to a mirror but it provides a control system through touch screens which provides visual images of products by inputting the information which they want.</td>
<td></td>
</tr>
</tbody>
</table>

Table 1. The types of resting area

3-3 The design of resting area serviced by ubiquitous technology

The resting area serviced by ubiquitous technology is laid out as a unit to attach itself easily in the hallway or spaces near the elevators but expanding the units is possible. After consumers input a product code of department store items onto a mobile pad (A) and receive more information and images of the products through the displaying terminal (B). Additionally, the displaying terminal provides all the products’ information that a department store has, and also provides information by brands or nationwide. The kiosk (C) contains convenient technology to compare all related information rapidly in a department store. Also consumers can get the details such as size or virtual images through the smart mirror (D).

Figure 1. The design of resting areas serviced by ubiquitous technology

4. Conclusion

According to changes in society, ubiquitous technology influences almost everything and is defining new meanings. Contemporary spaces will require more roles for the technology as well. This study suggested the design of resting areas serviced by ubiquitous technology would provide better service, information and increase sales. As we researched, ubiquitous technology service affect on the consumers’ consumption will significant. However, further detailed research into the affects on consumers’ behavior and the convenience of this technology in other businesses is needed.

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