



Special Product Design and User Experience in Abnormal Scenarios

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Abstract: This article mainly explores the changes, designs, technologies, and their significance and impact of abnormal events on people's lives in abnormal scenarios and periods. Based on the needs and scope of special designs in abnormal periods, the possibility of design interventions that products can undertake is explored, and further connections between special products and user emotional levels are established. Based on the characteristics of abnormal spaces, this article also analyzes the methods of special product design and the ways of high-quality user product experience.

Keywords: design intervention, product design, special design

1. Introduction

Regarding the response methods triggered by abnormal periods, a series of literary works, technologies, designs, artistic works, and artistic theories have emerged from ancient times to the present. Among them, special product design accounts for a large proportion in solving problems that arise during human abnormal periods. At present, there has been great progress and improvement in product technology implementation both domestically and internationally. In addition to some problems that technology can solve, designers should adapt and recognize that people need higher level products with the progress of the times. The diversification of special products requires more considerations, because the emergence of each special design represents important experience and response ability accumulated by humans in abnormal periods. Users and designers need to collaborate with each other to generate more inspiration and feedback, and make the "energy, ability, possibility" of products keep pace with the times.

2. The definition of abnormal states

2.1 Changes in people's lives during abnormal periods

The occurrence of abnormal events brings qualitative changes to people's lives, and it also has a crucial background for the transformation of abnormal product design direction. The definition of abnormal events is very broad, mainly characterized by sudden events or large-scale public health events that occur outside the normal range. According to the location and space of occurrence, the handling methods have become more diverse. It is also necessary to break away from conventions and actively seek scientific, innovative, humane, efficient, and convenient solutions for handling abnormal events, thereby preventing and reducing the losses caused by disasters. For example, due to the urgent situation, many simple devices or products made by the public using daily necessities or different materials to cope with the epidemic have emerged. It is not difficult to tell the positive attitude and collective thinking ability of the public towards abnormal events. In such abnormal periods, many products that change people's lives have emerged.

2.2 Design and technology appearing in abnormal periods

The era witnessed the technological and product attempts and efforts made by people to respond to abnormal events. Facing the epidemic, from ancient times to the present, home to abroad, from The Age of Plague, the Spanish flu that swept the world continuously in the year after 1918, to SARS, the Middle East Respiratory Syndrome, Ebola virus, Zika virus, and the 2020 novel corona virus in different countries, While holding a reverence for nature, many effective technological research and emergency response item designs have emerged for a period of time to address different types of special events, and even some visual concepts and paintings have emerged. For example, in 2014, in order to control the emergence of the Ebola virus, the "Emergency Intelligent Warehouse" designed by Baylor Medical College was able to provide a patient tracking system and other technologies, including a combination of waste disposal, disinfection systems, and the addition of bed space. The "Intelligent" application system program was set up to optimize the product and service design process, promoting clinical efficiency and service quality.

2.3 The significance and impact of abnormal design

The constant emergence of unconventional designs has increased people's ability to resist sudden disasters, which

is relatively rare but has brought about leapfrog progress. The significance and impact of these designs on product users, designers, and society are worth exploring separately. Regarding the aspect of interpersonal communication, advanced technology and reasonable products help people efficiently solve crises, not only solving problems, but also comforting public psychology, coordinating social management, and humanizing. Comprehensive and thoughtful product design can also bring positive effects, even the details of product design can bring more possibilities to people's lives. In terms of designers, during the abnormal period, they are not only responsible for designing practical products for users, but also for reflecting social issues, humanistic care, relationships in special spaces, and other aspects of design, in order to improve a people-oriented quality of life under the pressures of society. Regarding the social aspect, various types of designs are expected to apply in various industries to accumulate and record special inventions and design experiences for humanity. The designers should analyze the advantages and disadvantages of previous products, and further optimize the service design process of products, in order to fully prepare and cultivate high-quality response capabilities for possible abnormal events in the future.

3. The impact of special designs on people's behaviors

3.1 Positive and negative changes in design interventions

Design is a creative and dynamic creation activity that includes the entire process of conception, execution, and implementation. In this creation process, it is influenced and constrained by many factors, which can be broadly divided into environmental factors, human factors, social factors, etc. Therefore, fundamentally, design itself is an intervention behavior. [1] For example, a series of technologies, products, or works that appear during abnormal periods can be called design interventions, but the reasons for their appearance are not similar to those of ordinary life products, and human intervention is particularly prominent. At the same time, intervention can be divided into positive intervention and negative intervention. Based on the target audience and needs, it can be seen that design interventions have a guiding and directional effect on people's behaviors. Moreover, the proportion of design interventions in special designs is also significant, and even slight positive or negative changes can potentially change the direction of product application. However, correct and appropriate design interventions should not be negative. Negative guidance can lead to a qualitative change between users and the social system. Different attitudes towards problem-solving can lead to biased results. For example, product application under design intervention can cause panic in society and may lead to unnecessary negative emotions among the public. It will not be the original intention of product design during abnormal periods, the design and planning of products should be re-coordinated with the consideration of public psychology and social institutional order.

3.2 Stress behavior awareness in special designs

In addition to specific design interventions for products, anticipating and preparing for events in advance is also a part that needs to be designed. Stress behavior refers to the physical and psychological impact and response of humans to sudden major disasters or events. By understanding the principles of stress behavior, it is necessary to consciously make design adjustments to the user's immediate stress response. Appropriate awareness of psychological stress can enhance an individual's ability to cope with life and adapt, improve attention and work efficiency, and promote psychosomatic growth, development, and physical and mental health. If unable to adjust or respond effectively to special events in a timely manner, it will lead to serious psychological problems similar to stress response disorders. Behavioral changes mainly manifest as an increase or decrease in behavior with blindness. According to different situations, it can affect people's adaptability to learning, work, and life. Therefore, the stress awareness part in special product design should have a subtle impact on psychology and have the function of guiding user behaviors.

4. The relationship between unconventional space, special product design, and user experience

4.1 The relationship between special product design and space

The relationship between special design and space is relatively stable during abnormal periods, so it is required that the product can be better integrated into the space, and the space should also be able to carry the concept of the product. The special design products used by people can be defined as new products, because the space scenes they can accommodate have changed. How to give people a different experience and improve the quality of life in the home environment, and the expression of products in special spaces has also become a new product design concept. Jasper Morrison, a famous product and furniture designer from the UK, said in an interview: "Placing chairs in a room can change the atmosphere, which is an important role of a product because we feel different in different atmospheres." Japanese industrial designer Naoto Fukawa believes that designers should study peo-

ple's ability to solve problems unconsciously rather than relying on the product itself, more attention should be paid to the design factors of environmental space[2]. As a physical and practical product, it cannot exist without space, because the form and state of the product itself should correspond in space and be closely displayed and connected. The responsibility of a designer is not only to grasp the appearance, material, function, color, and concept of the product itself, but also to have appropriate considerations for the space and presentation state that the product will be in, from flat to virtual space establishment, The transformation from virtual space to actual products is the focus of design. It's believed that the relationship between space and products is more like a contradictory and unified relationship that is inseparable but not interfering with each other. The strength relationship between two individuals is also a point that designers need to independently recognize and balance.

4.2 The relationship between human and special product design

When people participate in products and spaces, they will have further requirements for the breadth and depth of the product experience. As users continuously understand and use the product, the impact of the product on human behavior will also vary greatly depending on different people's different experiences and interpretation methods. According to the definition of human-computer interaction design in the international standard ISO9241-210, the definition of user experience is "the different perceptions and reactions generated by different people through the use or expected use of a certain product, system or service," including the beliefs, emotions, hobbies, achievements, behaviors, physiological and psychological reactions of all users[2]. In the process of designers repeatedly collecting user feedback and gaining design experience, analyzing the needs of the audience in special products, we need to understand how users perceive special products, and what insights and uses they have gained from the special products themselves, even if it is just self reflection, a convenient use, or a joy in life caused by a product, there is also a deep relationship between users and products that cannot be ignored. Sensory experiences include touch, vision, smell, hearing, taste, and even human emotions. Analyzing the relationship between people and special life products is beneficial for us to continuously improve our personal abilities in the process of designing special products, and create more convincing, emotional, and responsible design works.

4.3 The relationship between user experience level and special product design

The product level of user experience can be divided into instinctive level, cognitive level, and emotional level based on Duan Yifu's Experience Continuum Thinking[2]. At the instinctive level, it mainly relies on the user's senses to complete the initial experience by feeling the form, color, and material of the product, arousing the experience of using the product and naturally completing the steps of use. The cognitive level is the part of the user experience product that requires independent thinking and rational analysis[2]. A successful product experience can bring more ideas and inspiration to users, colliding with more highly and broadly defined product concepts. The emotional level contains the emotional changes that users experience when using the product. When users experience some content that reflects a natural state in the product, potential emotional changes may occur. For example, how to enable users to maintain a stable psychological state even in abnormal scenarios by analyzing the user experience level and obtaining convenient products? Based on this we can integrate natural themes with special products that can solve the problem of high-quality human survival. Regarding natural themes, there is an example of ancient philosophy can be used as a guide. The concept of "Shi Zhong" in Confucianism refers to adhering to the temporal nature of world development, acting in accordance with the times, and on the other hand, it refers to the harmony of natural behavior, which is of great guiding significance for the harmonious coexistence between humans and nature.[3] At the instinctive level, products that convert natural energy can not only solve some practical survival problems, but also at the emotional level, natural form elements can assist users in alleviating psychological problems. Therefore, after individuals have a preliminary instinctive and cognitive experience of products and spaces, whether products have an emotional impact on users also becomes one of the criteria for judging the success of product design. Especially in abnormal scenarios, user emotions are the most abstract, need to be recognized, and can reflect the deep experience part of special product design. At the same time, it is also a part of designers who need to constantly think about how to better establish the connection between user emotional levels and products in non normal scenarios.

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