How Peripheral Interaction Design Contributes to Calm

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Abstract. A larger number of electronic information products emerge with the development of modern computing technologies. The more and more irritated people need calm as too many information crowd into their everyday life at the same time. Peripheral interaction design aims for a quiet and serene everyday life. The importance of calm for interaction design was discussed, and explored how got the calm based on peripheral interaction design. The principles summarized will help designers get more natural interactive products.

Introduction

The increasing user need promotes the diversified development of interaction design. At the same time, users get too much information from different sensory modalities because of the dazzling interactive digital products. Fast shopping and consuming trigger the users’ pursuit and desire have unlimited expansion [1]. Computers are becoming so ubiquitous in everyday life than modern products allow us to access and interact with digital information anywhere and anytime. The developments bring along numerous opportunities for the interaction design that give users excellent freshness and convenience, while they also raise challenges that make users being overburdened. In the background, people begin to rethink profoundly and want to return back the simple life that is so calm that they could have more time to pay attention themselves beyond products. Peripheral interaction design aims for a quiet and serene everyday life, that is a design philosophy, not a design style [2]. Peripheral interactions make the products adapt their behavior to the use’s wishes and desires of everyday life, without technology excessively influencing the everyday routine.

The Importance of Calmness for Interaction Design

Interaction design is flourishing as a new subject with the development of computing technologies. While technologies are not the main barrier to realize the plenty of designers’ creative idea, people think it is not enough to get multifunction and life convenience, user experience is more important. The focus has been transferred to user itself from the technologies of realizing the product function. Computing technology is the dominant factor to design products providing more and more function and sensory stimuli for the users in the early age of interaction design. In a post-PC world, the experience of the product is central and significant above all else. The concept of ‘calm’ is proposed, the natural using and low mental burden in everyday life.

The concept of ‘calm’ originates from calm technology. Hundreds of computers own various sizes and functions are seamlessly integrated into the everyday world, so that they will vanish into the background. Users are free to use them without thinking and so to focus beyond them on new goals [3]. People both need active and calm in everyday life. Computing technologies focus on how to make users stay active, such as telephone, email, Netnews, TV, rich media, that crowd into everyday life to be an enemy of calmness. The most outstanding feature of calm technology differ from other computing technologies is to make the attention of users take place in the periphery, is not to attract so much attention. Users could get more time to pay attention to themselves, and feel real calm and comfort, while using this kind of products. This is a new direction of interaction design that the concept of calmness is emphasized with the development of calm technology, to
efficiently solve the conflict between technology and human. People will not only enjoy the convenience brought by digital products, but also not lose the original life. The final purpose will be realized technologies adapt to the human.

**The Method to Get the Calmness Based on the Peripheral Interaction**

**Peripheral Interaction**

Peripheral interaction is developing as a new design thought of interaction design based on calm technology. There are two parts for the attention allocation, center and periphery [4]. Actually, attention shifts between ‘center’ and ‘periphery’. Peripheral state means there is not obvious attention center, moreover, most of time people’s attention are around periphery. For example, when we are driving a car, we will focus on the road condition, radio or passengers, not noises of the engine. The normal sound produced by the engine does really exist, we are hard to perceive it, because the sound is thought as peripheral information. People will put the sound in the center of attention instantly as the sound is abnormal. After figuring out the reason, they will deal with the sound as peripheral information again.

The peripheral interaction designs users’ attention based on the human’s capability of shifting between central and peripheral attention by nature, so that most of interaction could be designed as peripheral information during they using products. The interaction design based on periphery could make user pay less attention to use products, and enhance the richness and experience of interactive products. Even more important, users could get calm, and control the life naturally and easily when there is a riot of information in daily life.

**Feature Analysis of the Peripheral Activity**

People’s everyday activities contain main activity, and side activity [4]. Main activity is the primary task to perform, that does not mean main activity have to require more attention. For example, when we have a dinner at the same time talking with friends, we pay more attention to talk, although eating is main activity. Side activity contains two kinds of activities, temporary side activity and ongoing side activity. Temporary side activity is short and finished quickly. It could be directly or indirectly related to the main activity. Such as, we take some salt when we think the dish is not salty enough. Ongoing activity lasts a longer time compared with temporary activity. For example, we listen to music while working or running at so on. We can find that there is no need to pay so much attention to finish a task. It is easier and more natural while less attention needed. If we manage the feature of the peripheral activity to design, users will pay less attention to perform tasks and get more free time and calmness in everyday life.

a. Peripheral activity is instinctive and empirical. Everyday activities always require no or little attention. The activity is so familiar that people could do it by instinctive and empirical.

b. Peripheral activity can be changed into center freely. Although the attention located in the periphery most of time, it will be changed into center immediately when something is needed to pay attention.

c. More detail information is located in periphery. People associate the detail with the familiar things, so that it could help understand tasks by empirical, and produce ambiguous orientation sensitivity [5].

**The Principle of Interaction Design Based on Periphery**

**The Nature of Peripheral Interaction**

The peripheral interaction is natural based on multimodal interaction behavior. Users receive the information by cognitive modal, and export the information by effect modal (Figure 1). The effect modal means activity modal. The natural interaction combines all kinds of cognitive modals and effect modal.
User centered design is very important for natural interaction. User could interact naturally with products depending on experience in everyday activities based on combining user research with interactive technology. User also could quickly understand how to use products through adapting the cognitive habit. In words, natural interaction could be using by empirical activity.

The Intuition and Logic of Peripheral Interaction

The intuition and logic are the basic for product peripheral interaction. The theory of intuition and logic of products derive from the research of symbol in University of Ulm and the research of product semantics in new Bauhaus. The semantics of products are very important to guide user to perform the operation. The form of products expressed the clear semantics benefits performing tasks. On the contrary, the obscure semantics of products make user feel confusing. This is a main problem of modern design because of lacking enough and clear product semantics.

How to correctly use the product semantics is the key for the intuition and logic of peripheral interaction. Users get less burden of cognition with the help of the concept, judgment and reasoning. This way could reduce the aimlessness of interaction, save time to understand products and manage them.

The Creation of Peripheral Interaction

The deeper needs of users are satisfied by the creation of interactive products. Creative thought is complete to explore the unknown things. Users have different deeper needs, just as the most outstanding writer during the English Renaissance, William Shakespeare said one thousand readers, there are one thousand Hamlet. The peripheral interaction provides more possibility to create experience to use products. Especially artfully using the detail information located in periphery could get abundant interaction design.

The Conversion between Center and Periphery

It is useful design way to purposefully convert attention between center and periphery. For example, when we use the knife and fork to eat steak, the right hand with the knife and the left hand with fork is located in the center in turn (Figure 2).
Conclusion
At information times, there are so many kinds of interactive way for product design. Moreover, too much center activities increase the burden of cognition. Peripheral interaction could help users get calm through analyzing the feature of peripheral activities based on the theory of attention diversion. The given principle of product peripheral interaction design could push forward the development of peripheral interaction application.

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References