

Orientation and User Experience of Smart-phone Contents

Ho-Eun Lee¹, Young-Ju Lee²,

¹ Chungwoon University, Dept. of Broadcasting, Namjang-ri. 21, HongSeong, ChungNam,
Republic of Korea,

² Chungwoon University, Dept. of Multimedia Science, 113, Sukgol-ro, Nam-gu, Incheon,
South Korea, yjlee@chungwoon.ac.kr

Abstract. This study is to examine UX design patterns depending on touch gestures on smart-phones for mobile web service. As for user experiences regarding touch gestures on a smart-phone, directional motions such as horizontal or vertical movements were more frequent than zoom-in/out and rotation, and such motions were often combined for navigation and invitation functions. Dragging was directional both horizontally and vertically while scrolling was directional basically vertically.

Keywords: smart-phone, orientation, user experience

1 Introduction

Smart-phones are no longer new to modern people. The smart-phone distribution rate in Korea is the highest around the globe. It is reported that the domestic use rates of smart-phones have already exceeded those of PCs. According to Nielsen, a market survey agency, the monthly hours of using mobile service among Koreans are 168 hours while those of using PCs are 24 hours, which indicates that the former is 7 times more than the latter[1].

As for touch gestures, the most important feature for mobile web service, UXs do not provide consistent experiences among users who surf over various web sites although they are designed for characteristics of a specific web site. Hence, this study aims to analyze UX design patterns of screen transition with touch gestures involved. In addition, related user experiences are analyzed to present touch gesture UXs in harmony with design patterns for better user experience.

2 Characteristics of Mobile Web Service

Since mobile web service utilizes small screens and finger touches, the information system and GUIs are basically different from those of PC-based web service. The most outstanding difference from PC web service is the interaction method: Various

sensors such as GPS and touch gestures are utilized for interaction with the interface, and the operation system is optimized for mobile environments[2].

As for information composition as well, a simple top-down sequential structure is preferred because of the small size of the screen. The contents displayed on the screen are also limited. To show a large quantity of information, items need to be grouped and classified more specifically so that they can be displayed as a category. To this end, UXs specifically designed for mobile web service such as the drawer types need to be adopted.

As mobile web services are operated on a small screen, the information structure is different from that of PC web services. With the advancement of the ultra high speed Internet access, many are familiar with PC web service and make good use of Explorer browser that is based on Flash or Active X functions. As for layouts, the menu structure is centered on the Header and Left sections while the layout of the contents section is opened. Interaction with inputs/outputs by means of a mouse or a keyboard is another feature. Mobile web service designed for smart-phones presents the menu centering on the header and contents sections, and movement between menu items is through page transition. The layout is limited due to the narrow width. Various sensors such as cameras and GPS are utilized, and hybrid applications of device functions are adopted. Interaction is implemented through finger touches.

3 Mobile Design Patterns

Upon facing a certain problem for the first time, people go through various trials and errors before finally solving it. When a similar trouble occurs later, it may be successfully addressed by applying the former solution. Design patterns of smart-phones are a type of empirical solution after various trials and errors. To solve design problems that are repeated in an object-oriented system, enterprises are motivated to analyze them and present detailed explanations. Repeatedly used designs are grasped after countless trials and errors, systematically classified, and collected as design patterns.

Mobile UI design patterns are divided mainly to navigation for information management and screen movement, forms for entering texts and optional functions, tables for contents display, searching, invitation for functional control and attention, and feedbacks to handle responses depending on the situations[3].

4 Directional analysis and User Experience

Interaction in smart-phones is based on finger touches of a user on the device[4]. Most mobile devices except certain PCs or smart-phones apply touch functions to web service. Because of the small size, interaction through finger touches is specifically for web service through smart-phones, not PCs. In particular, touch events of user motions are closely linked to screen transition and need to secure affordance that reflects realistic motions that are probable in real life[5].

Screen transition seems to be similar among different operation systems of smart-phones although the specific motion functions might be somewhat different. To design touch gestures in a mobile environment, it is vital to taken into consideration sensor areas as well as visual elements. Ergonomical aspects also need to be considered for user motions that interact with the device. Such touch gestures are in close relation with screen transition that is likely to be directional.

In interfaces, screen transition is effective in drawing user attention to the extent of dynamics, creating unique experience of that information. As a result, a user develops visual perception in response to dynamic feedbacks to his behaviors, and the accumulated experience requires the same perception for similar patterns, As the same perception is repeated, the level of presence is enhanced.

5 Conclusion

The objective of this study is to provide consistent experiences to users who are already familiar with smart-phones, and the findings are as follows: First, the information structure of mobile web service is different from that of PC web service because of the small screen size, and a unique feature of mobile environments is touch gestures that create specific UX design patterns. Second, touch gestures play the most important role in screen transition that is directional depending on the touch method. Lastly, because of the directional nature of screen transition, regular UX patterns need to be provided depending on the mobile design patterns.

References

1. Nielsen Korea, 2013 media usage patterns change and outlook (2013)
2. C.S, Cho., H, Kim.,A Study on the GUI Design Element of SmartPhone Touchscreen, Korea Design Knowledge Society No 22, (2012)
3. Y. J. Lee, UI / UX design theory and practice. Hanbit Academy, pp. 95-113, (2015)
4. Roland M. Beaker et. al, Readings in Human Computer Interaction, A Multi-disciplinary Approach, p.40, (1987)
5. Rex Hartson, Cognitive, physical, sensory, and functional affordances in interaction design, Behaviour & Information Technology, Volume 22, Issue 5, (2003)