Comparative Analysis of Reading Mobile Applications in User Experience Design

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Abstract. Nowadays, people's reading methods have undergone great changes. More and more readers choose to read electronic information to meet reading needs. Therefore, a large number of reading mobile applications have emerged. This article describes the user experience theory and analyzes the types of reading mobile applications in the market. Taking iReader, Kindle, and QQ reading as examples, they compare their similarities and differences in user experience design.

Keywords: Reading Mobile Applications, User Experience Design, Interaction Design

1. Introduction
The popularity of mobile smart terminals has laid the foundation for the development and promotion of reading mobile applications. At present, there are many types of reading mobile applications, and the market competition is extremely fierce. In order to further attract the attention of netizens and improve user stickiness, designers must ensure that users have a good user experience in the use of links. Therefore, it is important to conduct a comparative analysis on the user experience design of such mobile applications.

2. User experience design
In the early, middle and late stages of product use, users' emotional experiences, cognitive impressions, preferences, psychophysiological responses, and behavioral achievements can all be regarded as user experiences. At present, the development of information technology has gradually enhanced the interactive performance of mobile applications, and in the fierce market competition, user experience has become an important index for evaluating applications [1]. For mobile applications, its usability indicators are mainly divided into efficiency, effectiveness, and basic subjective satisfaction. With the improvement of user
experience theory and the development of related concepts, the user experience has reached a position comparable to traditional application availability indicators.

3. Reading mobile application classification

3.1. Reading Mode
From the reading mode of reading mobile applications, there are two main types of reading mobile applications on the market, one is an online reading application and the other is a local reading application. Among them, the online reading application is a mobile application mainly based on a consultation and acquisition terminal, and the online reading can be completed by connecting to the Internet during use. For example, Weibo, Netease News, and Tencent News are all online reading applications. And local reading applications are more biased in local text reading. For example, QQ reading, iReader, book reading novels and other book reading mobile applications are of this type. The local reading application can not only realize online reading within the application, but also download digital resources into the local resource library to carry out offline reading, and its reading service methods are more diverse.

3.2. Reading content
If the reading mobile applications in the current market are classified from the reading content, the applications can be divided into deep reading applications, shallow reading applications and ultra-light reading applications. Among them, deep reading applications can provide readers with reflective reading content, and need to let readers carry out information mining and sorting by themselves. For example, read more and read, byte society belongs to this type of mobile application. The shallow reading application is an application that provides readers with no need to think about reading content, which can be read by jumping or intuitive reading methods. For example, ZAKER, VIVA reading, etc. belong to this type of application. In contrast, mobile reading applications that provide ultra-clear reading content are mainly concentrated on social platforms. For example, WeChat public platform, Sina Weibo or Netease News.

3.3. Application Developer
At present, people's adaptability to electronic reading is getting higher and higher, and the methods and carriers of electronic reading are also constantly changing. Therefore, the development group of reading mobile applications is increasing, and reading applications that can meet the needs of different developers have emerged.

First, established e-book companies and software companies. This type of developer often has rich software development experience and market coping strategies, so this type of reading application has a long application history and a relatively high market survival rate. For example, read more and read iReader.

Second, Internet companies. At present, Internet companies' participation in mobile services is increasing, and the development of reading mobile applications is the fundamental manifestation of providing more diversified services to consumers. These enterprises have clear advantages and strong appeal, and the application groups of related applications are relatively fixed. For example, the starting point of the Chinese website, Tencent's QQ reading.
Third, communication companies. Communication companies are also major players in the mobile network business, so major communication companies are also interested in developing reading mobile applications together in an attempt to gain a share in this market. For example, mobile company's and reading, telecommunications company's Tianyi reading.

Fourth, digital book publishers or book resource service providers. Enterprises and professional digital book publishers who have a large number of digital book resources also participate in the current competition in the reading mobile application market. Relying on the rich resources in their hands, the mobile applications they develop can quickly gain consumer favor [2]. For example, Superstar Mobile Library, Founder Appabi Reading.

4. Comparison of user experience design for reading mobile applications

4.1. Evaluation system
For reading mobile applications, a good experience depends on the specific performance of the application. Therefore, before comparing for experience, we should first define the evaluation criteria for reading mobile applications, and then use these evaluation criteria to compare the user experience design of different types of reading mobile applications. This article takes the local reading application as an example, and builds a comprehensive evaluation system based on factors affecting its user experience.

For example, set a variety of indicators such as visual experience, auditory experience, tactile experience, interactive experience, information architecture, user experience, value concept, query experience, user needs, core value, etc., and establish a reading mobile app evaluation mechanism. Appropriately conduct evaluations. At the same time, in order to achieve a good evaluation of the application, relevant staff should also start from the practical value of the application. For example, setting the installation convenience index of reading applications, the satisfaction index of reading functions, the rationality index of registration methods, and the scientific index of the layout of the operation interface, etc., should evaluate the entire process of the user's use of reading mobile applications.

4.2. User Experience Design Comparison
In reading mobile applications, sensory experience, interactive experience, and emotional experience are the most critical parts of the user experience of such applications. The rationality of these three user experience designs will have practical value and market for reading mobile applications. Occupancy has a profound effect. Therefore, it is necessary to study the user experience design of reading mobile applications. By comparing the differences in user experience design of different reading mobile applications, it will help designers to gain inspiration, improve solutions, and then improve applications. Reasonable design.

4.2.1 Visual effects. In the reading session, the most obvious sensory stimulus that the reader feels comes from vision. This sensory experience is often given by the application interface. Scientifically designing the sensory experience of reading mobile applications is an effective way to increase the appeal of reading applications. For readers, the eyes are the first window for people to obtain information. The eyes capture the information and the brain thinks about the information, and then the understanding and digestion of the information is the whole
process of reading. Therefore, the rationality of the arrangement of the visual constituents at this stage will have a direct impact on the reading effect, and it will also have an impact on people's user experience [3]. For example, the main color of the iReader page design is dominated by unsaturated colors, which will achieve the effect of visual metaphor. QQ reading and Kindle reading remain traditional, and the page design style is consistent with the brand style, which can quickly awaken people's brand awareness and achieve the role of accumulating customers and promoting the brand. However, in the visual design link of user experience, Kindle reading shows the problem of confusion in the visual hierarchy design. Various types of interactive elements are piled up randomly, making the layout of the page's visual and behavioral elements messy, and it is easy to bring visual cognitive load to users. In contrast, QQ Reading and iReader are more reasonable and standard in terms of meeting layout. The construction and matching of visual structure modules are more scientific, which can bring users a better browsing experience.

4.2.2 Sound effects. Although there are many readers who tend to read with sound when reading, given the quiet reading preferences of most readers, the development companies of reading mobile applications often do not pay attention to their sound effects[4]. However, most reading mobile applications currently design sound effects such as page turning, logout, login, or reading aloud. For example, Kindle reading has not developed a reading mode, and the application is still at the level of "seeing". Of course, in terms of sound effects, iReader and QQ reading have already taken the lead. They both have a reading mode that can provide readers with multi-method reading services.

4.2.3 Interactive experience. Interactivity is an important indicator for judging the value of mobile applications, and it is also a key factor affecting user experience. In essence, the interactive experience reflects the value of mobile applications in product performance. For example, from the perspective of functional design, iReader, QQ reading, and Kindle reading all have the function of finding books, but the former two have advantages in finding books, and the search speed and convenience are higher; all three also have the function of purchasing books. IReader, QQ reading book purchase process is very simple, and there are no geographical restrictions, and Kindle readers need to browse on the client first and then purchase books on the Amazon platform. For readers who are not easy to use the Amazon platform, it is difficult to purchase books; from In terms of reading functions, the first two applications pay more attention to readers' psychological needs and experiences, while the Kindle reading provides X-Ray function, which is more suitable for content search and re-reading[5]. In addition, the interactive experience also depends on the design of the information architecture of the application. The architectures of iReader and QQ Reading are similar. They both have a vertical stacking design mode with a bottom navigation bar. Kindle reading uses a limited scrolling mode. To display information, design a drawer-type menu instead of the navigation bar.

4.2.4 Emotional experience. In user experience, emotional experience is a direct reflection of user's emotional psychology, and it is also a key factor that affects the user's choice probability and stickiness. At present, the content and satisfaction of mobile applications are the main contents that affect the emotional experience of users. For example, iReader is a
content aggregation platform, with rich internals and reasonable prices, so it attracts a large number of readers, and the user stickiness is relatively high[6]. However, because it contains a lot of vulgar reading materials, it seriously interferes with the user's emotional experience, which reduces the comprehensive rating of the application and affects the market share. In terms of satisfaction, iReader and QQ read a wide audience and perform well in user evaluation processing and feedback, so the user experience is relatively high and the user is sticky; on the contrary, Kindle reading is because the audience is small and the operation is convenient Problems, resulting in reduced user perceived value and poor experience.

5. Conclusion
To sum up, user experience is the fundamental factor that determines the market share of reading mobile applications. Therefore, in the practice link, relevant staff must strengthen the design work in this area, and deepen the comparative analysis of related content in the practice link. Only through a comparative analysis of the differences in user experience design of different types of reading mobile applications can we obtain the inspiration and basis for optimizing the user experience design work.

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