

User Operational Design Thinking

Peipei Cai^(✉)

Beijing Baidu Netcom Science Technology Co., Ltd., Beijing, China
caipeipei@baidu.com

Abstract. It is necessary to accept new users, retain old users, keep users active, promote user consumption, and restore the loss of users, after all websites and products are released online. User operations are almost the core work of the development of each site or product. So what is the core content of user operation? The answer is opening source (to pull new users), throttling (to prevent loss of users), promoting activity (to enhance user activity), Promoting payment (to stimulate the user to pay conversion). In fact, none of the above contents is easy to achieve. So we must apply the basic knowledge of the user operations, combined with the user experience knowledge, to create the operational design thinking. The operational design thinking can help the sites or products to obtain a good user experience.

Keywords: User experience design · User operations · Opening source · Promoting activeness

1 Introduction

Product design is a long and escalating process which includes the following steps, first of all combining the user needs with the market demands, secondly a series of development, testing, releasing online, and then understanding the product's results through the data feedback, and finally improvement and optimization.

Operation is of great importance for the success of a product. When the product design and development are completed, the operation can help the product to propagate, promote the user to use, and improve the user retention. So operational design is very important to make the product live better and longer.

The user experience is a design behavior that runs through the entire product lifecycle. As the user experience designers, we must fully understand the operational knowledge, master the design of operational thinking, and design products to meet users' needs, in different user operating stages. Products can run better and longer once they meet the needs of users.

The operations include three aspects: content operations, user operations, and event operations. This paper is mainly about the user operations, which is most closely integrated with the user experience and has greatest guiding value for the user experience design. Mastering the user operational design thinking can help us to improve the quality and value of the user experience design.

2 The Importance of the User Operations

It is necessary to accept new users, retain old users, keep users active, promote user consumption, and restore the loss of users, after all websites and products are released online. User operations are almost the core work of the development of each site or product. The content operation, the activity operation, and the evaluation of the KPI are all determined by the user operations. Besides, the discussions of the user scale, the user payment, operation data health, as well as other factors are all in fact contained in the work of user operations. In general, the user operations include the following items:

- First of all: We must fully understand the user structure of our products. For example, among our users, are men more or women more? How old are they? Which provinces are they in? How about their education levels? What are they interested in? Are these data above possible to create common user types?... ... These are the basic data for user analysis.
- Second: We must understand the scale of the users. How many new users? How many old users? What is the number of the daily growth? What stage are the users at in their life cycles? When clearing these questions, we can understand the stage of our website and product, as well as the stage of our users. Then we are able to select the appropriate user operation method.
- Finally: We must know and understand the data of the user behavior on our website. By analyzing the data, we can understand why the users come? Why the users leave? Why the users active? Why the users retained? Only by understanding these user behaviors, we can use different operating strategies to attract new users, to active old users, to restore lost users, etc.

Therefore, the core contents of user operations are the opening source (to pull new users), the throttling (to prevent loss of users), the promoting activity (to enhance user activity), and the promoting payment (to stimulate the user to pay conversion). In fact, none of the above contents is easy to achieve. So we must apply the basic knowledge of the user operations, combined with the user experience knowledge, to create the operational design thinking. The operational design thinking can help the sites or products to obtain a good user experience. Referring to the following figure (Fig. 1).

- Opening source: When the users use the product at the first time, we need to ensure that the user experience is very good in order to attract them to stay.
- Promoting users' activity: In order to make users like our products and continue using our products, we must divide the users into sub-groups, and provide them different quality services based on their different interests.
- Promoting payment: On the basis of users' psychology, we should seize the needs of the core users, let the user use the paid features, and then guide the user to pay for the features.
- Throttling: In order to find the possibly lost users in advance, we should analyze the behavior of the lost users, and do some operations to recall them.

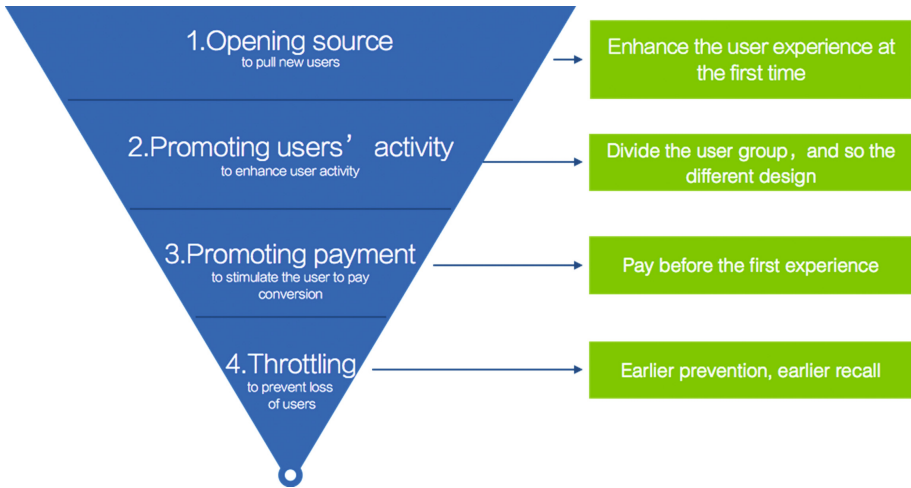


Fig. 1. User operational design thinking

3 User Operational Design Thinking

On the basis of the knowledge of the user operations and the knowledge of user experience, the user operational design thinking can help us to improve the user experience, to design the satisfactory products, and to follow the law of the user operations.

3.1 Opening Source (Enhance the User Experience at the First Time)

The purpose of opening source is to expand the number of users. The main tasks include expanding the registration channels and enhancing the registration rate. From the perspective of user experience, how to reduce the login threshold is the focus problem for the designers at this stage. The purposes are to allow users to smoothly and quickly complete the registration process and to improve the rate of successful registration. Especially for a new product, we must reduce the registration threshold in order to obtain more users.

3.1.1 Lower Login Threshold - Third Party Authorization Login

After years of development, the registration of Internet products has been very mature. Besides the registration way of the product itself, there will be other ways to register, such as binding registration. Binding registration allows the user of other products to quickly log on our products by the authorization account. This approach can significantly reduce the cost of obtaining the users. For example, the current common login page, refer to the following figure, prompts users to use the accounts of Sina microblogging, QQ, and WeChat to directly login the website, which can quickly increase the user numbers, especially for the new products. Referring to the following figure (Fig. 2).



Fig. 2. Third party authorization login

3.1.2 Lower Login Threshold - Account Exchange

Many companies not only have one product, but a product group, which are closely related products. In this case, it is necessary to make full use of any product account to get through the group of the products in order to reduce the threshold of registration.

For example, Baidu has a number of apps such as Baidu on the phone, Baidu map, Baidu Nuomi, Baidu take-away, Baidu reading, etc. In order to reduce the login threshold, Baidu uses the account exchange. The user logged in an app, and his account information will be recorded. When the user login Baidu's other apps in the same phone, it will be prompted whether to use the recorded account to login. Referring to the following figure (Fig. 3).

This approach greatly reduces the login threshold, and enhances the success rate of the login. Baidu's products fully share account resources between each other.

3.1.3 Lower Login Threshold - Product Optimization

With the advent of the age of the mobile Internet, everyone has a mobile phone number. Mobile phone number is not only convenient to contact, but also very convenient to remember. So mobile phone number has gradually become a very important account information.

It will be more convenient using mobile phone number to register in the app than using the mailbox to register. Referring to the following figure (Fig. 4).



Fig. 3. Baidu account exchange



Fig. 4. Using mobile phone number to register

3.2 Promoting Users' Activity (Divide the User Group, and so the Different Design)

The needs of users are very diverse:

- Although each site has the clear positioning and the specific user groups, the users are still very different. So the demands from the users are certainly different.
- Each user has a specific life cycle (including start-up, growth, active, recession). The users starting to use the product at the different time, will be in different stages; Or the users starting to use the product at the same time but having different growth rates, will also be in different stages. In different life stages of the user, the demands for natural products are also different.

In summary, regardless of the user's own differences or their different stages, the user's needs are different. So we have to divide the users into groups. For different user characteristics of different groups, we must do the different designs in order to enhance the users' activity. Referring to the following figure (Fig. 5).

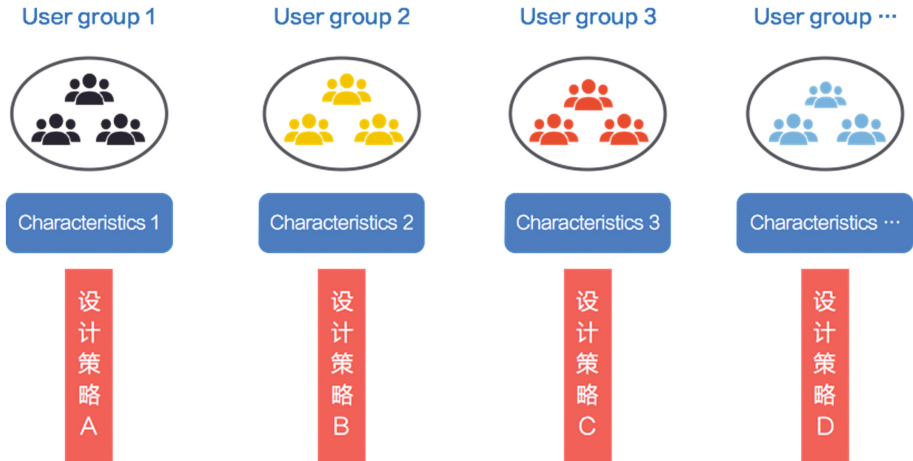


Fig. 5. The different user groups

In the process of categorizing the user, we found that different types of user group account differently. The groups with large proportion are named with important user groups. For these user groups, we should do a special treatment to meet their particular needs.

For example, the education group, the largest user group, which accounts for 40.8% in the whole number of users of Baidu Library. They have great demands for viewing and downloading the educational documents. So we specifically design and deliver educational VIP for them. The original solution that users can view and download documents 10 times within a month without the limitation of document types is upgraded to 15 times a month only with educational documents. For the educational user group, the membership value is increased by 1.5 times at the same price. While

after releasing the new solution, the VIP income is increased with 4.1%, and the ARPU is increased with 3.6%. Referring to the following figure (Fig. 6).

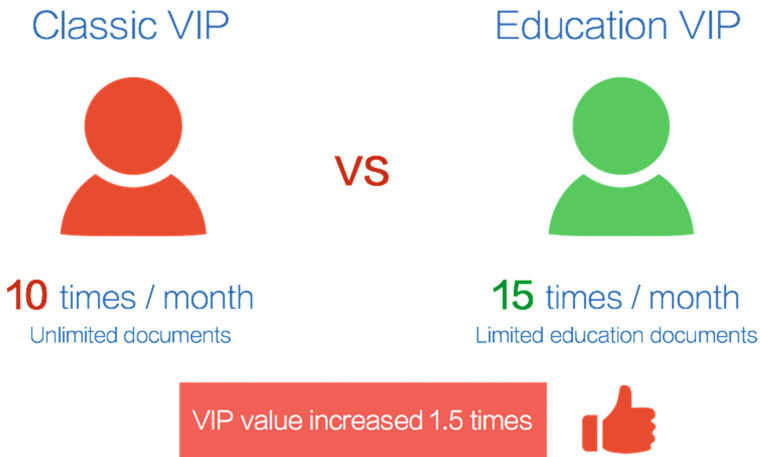


Fig. 6. Classic VIP vs Education VIP

3.3 Promoting Payment (Pay Before the First Experience)

On the basis of users' psychology, we should seize the needs of the core users, let the user use the paid features, and then guide the user to pay for the features. Referring to the following figure (Fig. 7).

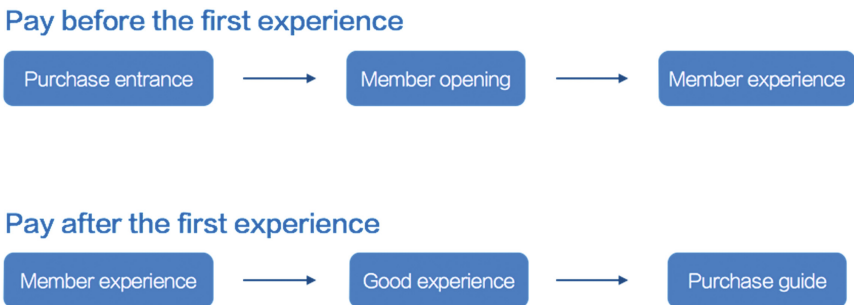


Fig. 7. Pay before vs Pay after

The role of the user experience is important to stimulate users to pay for the services provided by the products. For example, many products have a membership system. We can only use the corresponding privileges after purchasing members, while if we do not buy members, we can only see a bunch of cold copies of the presentation.

Please remember that: The users' purposes of using the products are not to buy members, but to meet their specific needs. So a good experience process is: The user

can try to use the membership functions. After that, if they are satisfied with the service, they will buy the members. Although this process delays the purchase of members, the purchase behavior will be more effective, have higher purchase success rate, and have better purchase experience after the trial.

3.4 The Throttling

Throttling refers to keep the user scale and avoid user loss. The main work mainly includes analyzing the behaviors of the lost users, finding the possible lost users in advance, and recalling users through operation. So the core of the user experience is: earlier prevention, earlier recall. Referring to the following figure (Fig. 8).

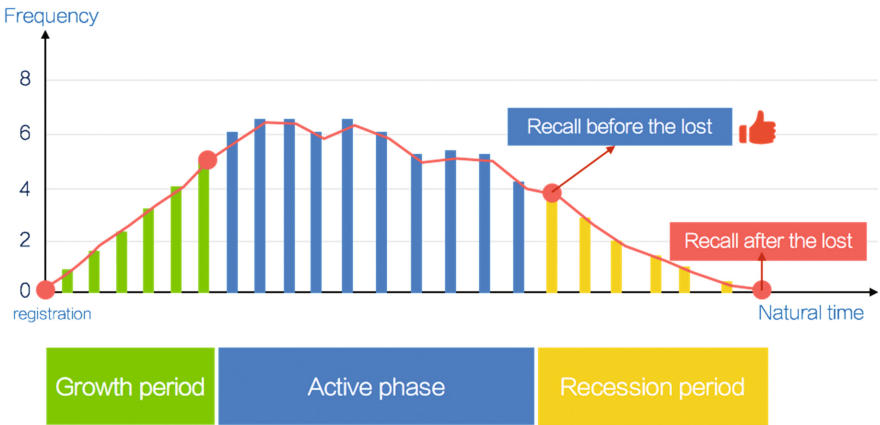


Fig. 8. User growth model

So we need to analyze the same characteristics of the lost users. Such as whether the registration channels are the same or not, the gender ratio, the age, the behavior characteristics, the interest characteristics, and so on.

For example, the rate of users who upload their pictures in the lost users is only 20%, while at the same time, the rate of the users who upload the picture in the remaining users is 80%. So uploading the head picture is a very important indicator, which can determine whether the user will be lost.

Many people think that uploading avatars is a very small function, which is not involved in the user's core functions. But the small picture obviously has a butterfly effect. For example, in the SNS virtual community, the avatar photos allow others to understand our preferences at the first glance. If it is a true picture, the user will be very easy to be recognized by their friends. So the avatar photo is very important to build their user relationships.

In summary, first of all, we need to find the same performance of the lost users. Once the users show these performance, it indicates that these users having the trend to be lost. We need to recall these users in advance.

4 Conclusion

After releasing a new product, it is necessary to attract new users, retain old users, keep users active, promote user consumption and restore the loss of users. It can be seen that user operation has become the core of the online products. On the basis of the operational knowledge and the user experience knowledge, the user operational design thinking can guide the user experience design, help us to design the satisfying products and to follow the law of the user operations.

Acknowledgements. Thanks again to Operation methodology created by Professor Zhang Liang, which gives me deep thinking of Internet Operation.

References

1. Liang, Z.: Operate from Scratch. CITIC Publishing House, Beijing (2015)
2. Pu, J.: How to do user operations. <http://jingyan.baidu.com/article/d3b74d6489b7491f76e6094d.html>
3. Data Resource. <http://tongji.baidu.com>
4. Baidu Library. <http://wenku.baidu.com>
5. Baidu Register. <https://passport.baidu.com/v2/?reg&tt=1486360368057&gid=6BC6F60-3CF5-4D84-A5AA-9B85ACBB98CC&tpl=pp&u=%3A%2F%2Fpassport.baidu.com%2F>
6. Baidu Login. <https://passport.baidu.com>

Design, User Experience, and Usability: Theory,
Methodology, and Management
6th International Conference, DUXU 2017, Held as Part
of HCI International 2017, Vancouver, BC, Canada, July
9-14, 2017, Proceedings, Part I
Marcus, A.; Wang, W. (Eds.)
2017, XXXI, 792 p. 288 illus., Softcover
ISBN: 978-3-319-58633-5