A Study on Classification of User Onboarding Factors Using Service Blueprint

Focusing on mobile commerce applications

Seohui Han
Contents convergence
Ewha womans Univ
Seohui.han.91@gmail.com

Yoojin Lee *
Contents convergence
Ewha womans Univ
ideeper@gmail.com

Abstract

The term onboarding, which mostly used in the business contact referring to organizational socialization, is now often used in the field of user experience design as well. For most of digital product, it is important process to accommodate users of various backgrounds and to fix them of the product. However, so far little is discussed about user onboarding and it is not clear what factor consist of user onboarding mechanism. The aim of the research project therefore been to try and establish what elements are used to onboard users and how those elements could be classified. This research is composed of two parts, case study utilizing service blueprint methodology and classification study based on case study results. For the case study, mobile commerce application was brought into the focus. That was because more abundant onboarding factors were found on them due to complicated user's tasks and journey placed on commerce service. Service blueprint methodology adopted for the case study is a widely used framework to see the compositions and interactions of service process. With the result of case study, user onboarding elements were classified by their main purpose and expected effect. Finally there were four main types that consist of user onboarding factors.

Keywords:

1 Introduction
1-1 Background

Recently, the concept of user onboarding has attracted attention as an important element for a successful user experience(UX) design. In terms of user experience design, user onboarding is a term which refers to methods and elements helping a new user adopt digital products(website, application or any other digital application) more smoothly.[1] since the range of user using digital product is getting gradually diverse, it has become a challenge of UX design to accommodate users of various backgrounds who might face entirely different complexity and problem. Also, due to the state of market saturated, no digital product dominates the market but have to compete with many other similar products. Therefore, the role of user onboarding minimizing the difficulties user might feel and stably fixing user of the service or product has been emphasized in UX design.

The purpose of this paper is to analyze design factors of user onboarding design and classify them by their purpose and expected effect. Among hundreds and thousands of digital product and service, this paper is focusing on especially mobile commerce(m-commerce) application. M-commerce application refers to the general mobile applications for electronic commerce(e-commerce). In the case of m-commerce applications, the process of using applications from shopping to ordering, payment and confirmation is a comparatively long and complex journey for user. Also, for user's continuous engagement to service, it is essential to collect user account data such as the payment method and destination. Therefore, a role of user onboarding preventing the user from exit and settle them down on the service acts importantly than in any other cases.

1-2 Procedure

This overall structure of the study is consist of two parts, which are user on-boarding case analysis unit utilizing the service blueprint and a unit classifying the user on-boarding elements based on the analysis results.

Service blueprint is a methodology to schematize a service flow and its compositions based on the temporal order and physical evidence. Thus, It could be useful tool to examine the elements of user onboarding scattered throughout commerce

application.

As the rates of e-commerce based on smart phones increases, the type and range of m-commerce applications are gradually expanding. Due to practical constraints, this paper could not provide comprehensive case study covering all kinds of m-commerce application. Instead, to see the elements of the user onboarding more clearly, the range of case research was limited to commerce application of online marketplace format which individuals or small businesses were to be sold to register the products directly online.[2]

2 Service Blueprint
2-1 User Onboarding as a Service

User onboarding is a strategy to minimize the barriers that new user might face using the product and to settle them down as a regular user by helping them to get familiar with the product. For example, the overlay guide to let new user knows about the application interface and login system using social media account allowing the user start the product more easily correspond to this.

The user onboarding of digital products can be defined as a single service. Service is meant to provide an intangible and a non-proprietary act or advantage to a customer. And normally, service presents itself to a customer in a procedural manner. [3] User onboarding provide the user of a summary of the complex use and procedure and let them skip the complicated tasks given by context changing sequentially. So, from this point of view, user onboarding can be understood as a service providing the user intangible benefit to increase their familiarity to the product.

2-2 User Onboarding blueprint

For the analysis of user onboarding process and element, the methodology of service blueprint is used. Service blueprint derive the actions of the customer from the physical evidence by the temporal order. At the same time, it also presents the relations between service provider action and customer action with the line of visibility and interaction.

Service blueprint consists of five layer of elements which are physical evidence, customer actions, onstage/visible contact employee actions, backstage/invisible contact employee actions and support process. Each layer is classified by a line of interaction, visibility and internal interaction. The figure below is the schema to present this layer and division.
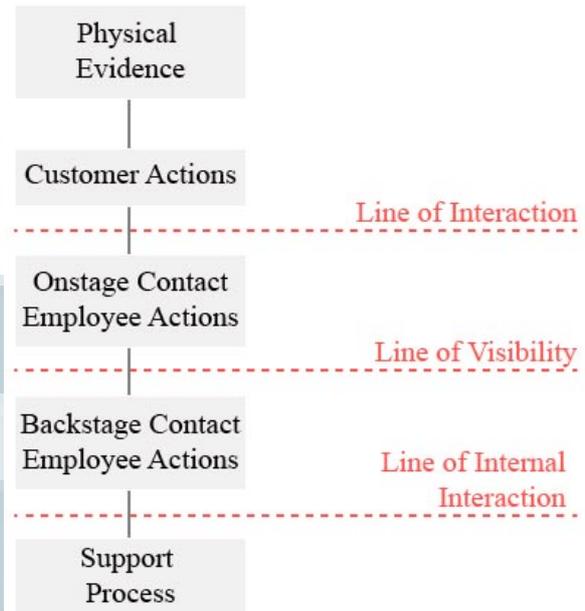

Figure 1 Service Blueprint Composition[4]

As presented on the figure, service provider's interactions corresponding user's actions are the layers under a line of interaction. Among those interactions, onstage interaction is the layer which user face directly. For digital products, user interface functions as an onstage interaction layer. Since this paper is focusing on user onboarding elements that the user come across while using the product, the case research conducted only above this onstage interaction layer.

The case analysis targeted the eight mobile commerce applications(11st, Auction, Coupang, Gmarket, Interpark, Lotte., Tmon, Wemakeprice) listed in Korean app store

To draw user onboarding blueprint using the frame, firstly, the period of mobile commerce application use had to be defined: 'A new user, who installed the application for specific goal to buy some product, shop and purchase the item and leave the application'. According to this use period, physical evidence and user actions were derived. On the characteristics of the case of mobile applications, the physical evidence can be corresponded to the change of app pages where the user faces the product physically. User action is defined by user's purpose that changes sequentially by each app page. After, Onstage interactions followed by user action for each app page are examined from the cases. The following figure is the user onboarding blueprint based on the cases.
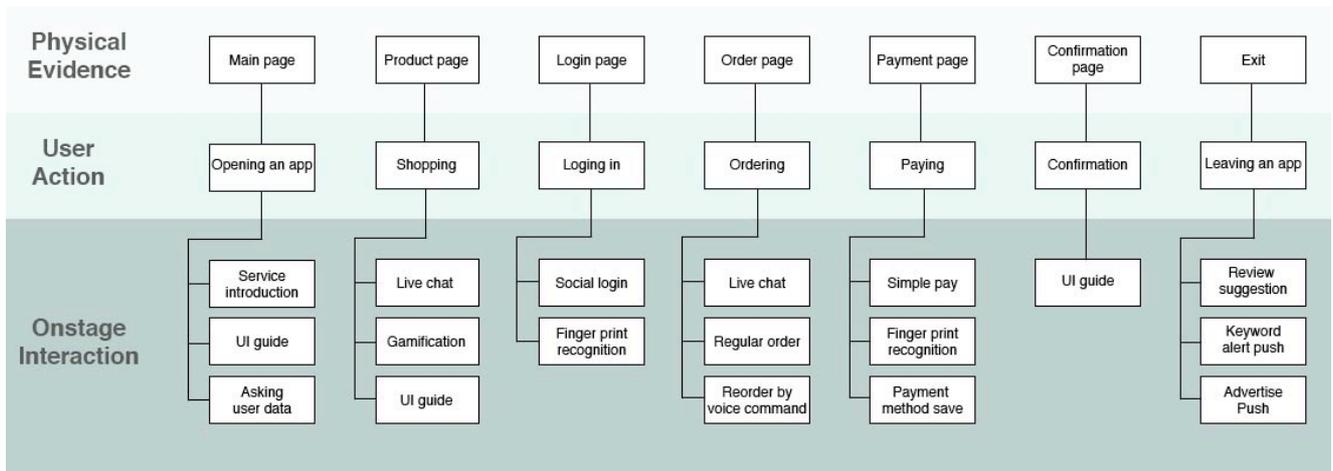
Figure 2 User Onboarding Blueprint[4]

3 Classification of User Onboarding Elements

According to the results of case study, the user onboarding elements provided in the mobile online marketplace applications were classified into three types by their purpose. The following is a table summarizing the derived element as a result of the case analysis by type.

Table 1 The types of user onboarding elements

Types	Elements
Promoting recognition	Service introduction
	User interface guide
	Asking user profile
Simplifying procedure	Social login
	Fingerprint recognition
	Reorder by voice command
	Simple pay
	Payment method save
Reminding user	Review suggestion alert
	Push alert for keyword
	Push alert for advertise
Increasing engagement	Regular order
	Gamification
	Live chat

3-1 Promoting recognition type

The first type is promoting recognition type. These provide the introduction and guide to the user so that they are able to know how to use the product easily and recognize the value of the products with less psychological load.

In case of service introduction, normally it is immediately presented in the overlay of the pop-up format and shows an important attributes of the application to the user. On the other had, user interface guide is provided repeatedly during the user actions of opening an app, shopping and confirmation. This serial distribution of interface guide is to reduce the psychological load that user might feel while a long journey of commerce application use. Lastly, asking user profile is an element that asks user about their personal data such as age group, gender and interest when they first open the application. After collecting user data, it transforms the information structure of application based on user data. On the characteristics of online market place application, a lot of information that has not been sorted can overload the user's perception. This may be a failure factor in achieving the intended use of the application. To prevent this, user profile data is used to sort them so that only related ones to user displayed. With user optimized information architecture, user can reach to the final goal buying the item directly and quickly.

3-2 Simplifying procedure type

The second type is simplifying procedure type. This type of elements shortens the procedure the user have to get thorough so that it keeps user from exiting on the way. Firstly, Social login lets the user skip the process of signing in by connecting with a social media account such as facebook, twitter and etc. Secondly, fingerprint recognition is used for both login and payment stage. It saves the user's login and payment data and allowing them access to same data without any repetitive typing task. When they are asked to login or enter the payment detail, they only need to swatch their fingers on the sensor to bring their saved data. This element minimizes the interaction that is required for the user to help them finish their journey. Thirdly, Reorder by voice command is a element allows the user can make an order only by voice command if they are willing to make the order which they have made once in a

same way. This direct the user to the order page so that the user can skip actions placed before ordering and, moreover, most of the tasks asked for the user to complete during ordering such as choosing items and options are also automatically processed by previous data. Fourthly there is a simple pay. It is a solution for an established mobile payment system simplifying the complicated steps of payment. In the case of existing mobile payment, security programs and user information required for each payment system and the device are diverse. It acts as a serious obstacle to the task implementation of the user. To solve this problem, simple pay simplifies settlement procedure in the connection of the payment information such as account numbers, card details and authentication through the smart phone. Among the research cases, it was observed that coupang and auction developed their own simple pay system for the application and others adopted external systems. The last element of this type is payment method save. When the user is on the action stage of paying, they are asked if they would like to save the payment method they choose at the time and apply the same method for following order. Applying this element can replace the user's repeated effort for payment. In case of coupang, they also combined fingerprint recognition to this so that only with the interaction of fingerprint recognition, user can accomplish the payment process.

3-2 Reminding user type

The third type is reminding user typ. These are used to remind users of the application after they left to re-board them. Review suggestion alert, when the delivery is completed, proposes user to leave a review to induce the re-entry of the user. Beyond just inviting the user to the application, it also makes the user more involved to the service by sharing their own experience. Push alert for advertise invites the user by providing them of information about sale, events and updated goods. This element was found at all cases and, in case of Lotte.com, they allowed the user to configure by themselves the product categories that they want to hear about. This is a strategy to re-onboard the user by giving them more relevant and optimized information. On the other hand, coupang send the user a push alert about the keyword user once searched on the application. If user did not purchase anything which he or she once was interested of, they keep sending updated information about the keyword such as new price or deals.

3-2 Increasing engagement type

The last type of user onboarding founded form the cases is increasing engagement type. This type of elements is used to increase user's engagement to the application to finally try to fix the user. Live chat, one of the newest element appeared at the commerce service, serves online real time chat which allow the user to chat immediately with seller or counselor if they get any question about the product or delivery. Thus, the user can solve the lack of information and process the systemic issue during use of the application in real time. This works as an intermittent but stable communication tool between the user and the application, which forms a relationship with the user.

Gamification element, the application of game-design elements and game principles in non-game contexts[5], was discovered in sticker collecting game form in the case of 11st. While using the application, users are able to collect the stickers popped up in random page of application. If users complete a specific collection, they can get the benefit from it such as discount or mileage as compensation. This element not only helps to increase use frequency of the application's user but also differentiating the user experience by adding the fun factors to the commerce application which is normally very purpose central. In the case of regular order discovered in coupang, When a user is in a stage of order, it asks the user to choose whether they want the purchase to be periodically repeated. This is a very efficient way of onboarding, which extremely simplify what the user has to do for continuous and stable use of the application.

4 Conclusion

In this study, the elements of user onboarding that are found in mobile commerce applications case by utilizing the service blueprint technique were explicated and classified by their purpose.

As a result, it was able to confirm the user onboarding factors currently provided in the mobile commerce application. Further, since these elements were analyzed based on the physical evidence and user actions, it could be seen what factors are sequentially arranged according to the changing user behaviors. In the case of classification part, the research conducted according to the effect and aim of each factor. The user onboarding element of mobile commerce application is divided into four types promoting recognition, simplifying procedure, reminding user and increasing engagement.

And later, the present study could be extended in terms of case scope dealing with the wider product range and must be deepening the analysis of the element. Also, the complete onboarding blueprint could be drawn by adding the layers of backstage interaction and support process which are not covered in this study. Then, it will be able to develop the study of detailed typology.

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