The Onboarding Effect: Leveraging User Engagement And Retention In Crowdsourcing Platforms

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Abstract

Onboarding is essential for any online service or platform interested in acquiring more users, members or customers. The beginning of a relationship between the user and a platform is the moment where motivations take part and the overall strategy– the flow, messages, interactions and UI design elements – should be carefully planned, so the experience as a whole can support new users' engagement. Such an important strategy still lacks systematic investigation. Most of what is employed by the industry result from empirical testing that turns out to serve a particular product in a certain instance. This research aims to provide scientific evidence regarding the effect of each onboarding element on user engagement and experience, in addition to solid guidelines that support decision making for future designs.

Author Keywords

Onboarding; User Experience; Citizen Science; Motivation.

ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): User Interfaces.

Research Situation

I am interested in understanding how does a first-time user experience influences the user engagement and retention in crowdsourcing platforms. With both master's and bachelor's degrees in design and HCI, along with 12-years in the practice of visual and interaction design in Brazil, I am enthusiastic about my topic since it will connect HCI theory and practical problems with the potential to support designers and researchers to build more engaged communities.

The 5 Onboarding Elements

The onboarding initiates when a first-time visitor enters the website, where it communicates its relevance, the main benefits of becoming a member, and clarifying what to expect from the community/service. This phase we call **purpose statement**.

Often, to access the main features and interact with members, as well as make contributions and participate, users are asked to go through **registration**.

Informational scaffolding usually comes after, offering guidance, instructing on how to use the platform. There are many ways of implementing this element, through tours, demos, tooltips, videos, or tutorials. It can also clarify community rules and expected behaviors.

After acquiring such knowledge, users can make a contribution, and that is the

Motivation and Context

For any person interacting with a platform or online application for the first time, there needs to be a clear understanding of how to join the platform, how it works, what are the main features and benefits offered. This is important because it allows the user to get some initial instruction on how to use the platform immediately so that the user can perceive its value and remain engaged with the content. User experience designers call this process *onboarding*.

Despite the lack of a consensual definition [11,12,15,16], this process primarily consists of a sequence of steps that introduce users to a new product or service. It can be designed in several ways, varying in duration and the number of elements and types of flows. Both terms, onboarding, and new user experience have been widely utilized by the User Experience (UX) community of practitioners and gained more attention with the growth of Software as a Service industry (SaaS) in the last decade, focused on leveraging product and user retention adoption. Because onboarding design encompasses users' initial interests and motivations [6,7,9], addresses instruction and guidance, as well as the disposition to engage in new applications or products, it may be purposely beneficial to platforms that entirely depend on participants' and volunteers' contributions.

Research Questions

In the limited scientific literature on this topic, as well from the blogs and magazines published by the UX practitioner community, onboarding process are typically reported as real-life examples of how a particular design works for a specific product [14,17],

or based on anecdotal data and personal analysis of existing apps and websites.

Although the onboarding, as part of the user experience as a whole, is intimately connected to the type of service, purpose, and audience, a framework of conceivable elements, and its different complexities, might support designers and decision makers. Besides delivering practical solutions and guidelines for crowdsourcing platforms, this study can provide a better understanding of how motivations can be addressed by the design. It will also address how variables in the design of each element play a role in the user experience, generating broad applicability knowledge grounded in systematic findings.

This research study has one overall question: (RQ1) What is the influence of first-time user experience in the user engagement and retention for crowdsourcing platforms?

Onboarding processes can be designed in multiple ways, for instance, some platforms may adopt a short sign up form, a tutorial right after the log in and a greeting message sent by email. Other apps opt for a social login, offer an introduction of the environment showing highlights over key interface components, and send mobile push notifications afterwards. Starting from a practical problem, which is how to build a better experience and leverage user engagement and retention from the outset, this research looks for practical solutions and guidelines that help designers and product teams to make more informed decisions when implementing an onboarding process, and not as an afterthought. It also attempts to build a broader

conversion element.

The previous phase should ensure the users acquired the necessary abilities to perform these actions so they will not face difficulties.

The **re-engagement** element is the last one, focused on retaining the users, this continued onboarding phase can include external actions such as emails or notifications. Internal actions can happen in future visits when users will receive advanced cues and gain knowledge so they can grow their engagement.

knowledge and principles that help to understand what affects users' engagement and why, contributing to refining HCI theory on UX. Because I'm interested in understanding the effect of each part of the onboarding process in the user participation, sub-questions are considered regarding each elements of the onboarding and how they interact with each other: (RQ 1.1) How does the visibility of the purpose statement affect users' registration inclination? (RQ 1.2) How does the complexity of the registration process affect users becoming participants? (RQ 1.3) What informational scaffolding strategies affect users performing a contribution? (RQ 1.4) How does a successful conversion in their first-time access affect users' motivation to return the platform? (RQ 1.5) How do re-engaging strategies affect users returning to the platform? (RQ 1.6) Is there an interaction between the components of on-boarding, and if so, how does it impact users?

Background/literature review
The literature review covers the following main areas: HCI Terminology for onboarding and elements definitions (onboarding elements), motivation theory[1,2,4,10], user interface design patterns [3,13], participation and engagement in crowdsourcing platforms, Citizen Science platforms, motivational factors for citizen science projects participation[5,8,9], and user retention.

Hypothesis
My hypothesis is that when users acquire necessary knowledge throughout a structured first-time experience, successfully completing the onboarding

process, they would be more willing to become a returning participant.

Methods and rationale
In order to find out how to better design an onboarding process that supports user engagement and retention in crowdsourcing, I plan to test the different elements that constitute the whole process. Each element (purpose statement, registration, informational scaffolding, conversion, and re-engagement) will be examined concerning its effect on user experience. Some elements can be designed in more than one way; thus variations will be also tested. Different onboarding setups, consisting of UI design interventions, will be implemented in a crowdsourcing platform, more specifically in an existing Citizen Science platform and their effects will be measured according to the following:
(RQ 1.1) How does the visibility of the purpose statement affect users' registration inclination? Independent variable (IV): Visibility: Home page / Link Dependent variable (DV): Number of users who move on to registration. **(RQ 1.2)** How does the complexity of the registration process affect users becoming participants? IV: Amount of friction (Long Sign up form / Short form / Social Login) DV: Number of registrations. **(RQ 1.3)** What informational scaffolding strategies affect users performing a contribution? IV: Type of strategy (Tutorial / Hints / Instructions document). DV: Number of successful contributions. **(RQ 1.4)** How does a successful conversion in their first-time access affect users' return to the platform? IV: Contribution on first time access (Yes/No). DV: Number of users who return to the platform within a timeframe. And from those, how many make

contributions. **(RQ 1.5)** How do re-engaging strategies affect users returning to the platform? IV: Type of strategy (Email / Notifications inside the application). DV: Number of users who return to the platform within a timeframe. And from those, how many make contributions.

Results to date and their validity

In a recent study with colleagues, we had four UX/UI specialists simulating a first-time user case, by following all the steps in registering to gain access as usual potential volunteers in two major citizen science platforms, iSpot and iNaturalist. The results of the cognitive walkthrough exposed how poor user experience, especially in the registration step, heavily influences the user acquisition. Because there is a delicate balance in persuading the user to register, it is critical to ask for the right amount of information at the right time to avoid abandonment. This experience, along with the theoretical reading influenced how my thinking has progressed regarding how to better measure the effect of each element of the onboarding on the user experience in objective ways. The previous study also highlighted the importance of establishing a HCI terminology consistent and robust that allows generalization and practical application to designers.

Dissertation status and next steps

In the current semester, I'm focused on my doctoral thesis proposal writing, data collection planning (UI design implementations and measurements), with the proposal defense expected to take place next January.

Current and expected contributions

My dissertation work will drive the introduction of onboarding as a reliable process that online communities and crowdsourcing platforms can employ to improve engagement rates. It will also provide an HCI Terminology for researchers and practitioners so the field can advance towards effective, tested, and theoretically based strategies. The UX/UI field of knowledge will benefit from a refinement of its theories, providing a better understanding of how do motivations can be addressed by UI design and onboarding elements, the effect of those elements on users' participation and how they play a role in the user experience.

Acknowledgments

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