ON THE WAY: DEVELOPING AN APP FOR DELIVERY MEDIATION WITHIN THE SHARING ECONOMY CONCEPT

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ABSTRACT

This paper reports on a human-centric development of a digital prototype of a delivery mediated mobile application within the concept of “sharing economy”. The application ‘On The Way’ was developed by the authors in the Multimedia Communication Masters Programme in a Project Based Learning (PBL) process. The goal of the application is to promote ‘hitchhiking’ for deliveries with bicycles, motorcycles, cars, vans or even by public transport or by foot. The development of the project, included User Experience design and evaluation techniques, which will be explained in this paper, as well as the description of the digital prototype itself available for hands-on exploration in the InVision platform.

KEYWORDS

App, Transportation, Sharing Economy, User Experience, UX Design and Mobile

1. INTRODUCTION

Mobile transport apps have changed the way people have moved around in major cities in the world during the last decade. Two of the biggest examples are Uber, founded in 2009 in California, and BlablaCar, founded in 2006 in France. As part of its concept of carpool apps, which already have more than 20 million users worldwide, the idea of the *On The Way* application is to connect people willing to carry out orders in their vehicles, or even on public transport or on foot, with users who want to receive their purchases or other products in their homes or work by affordable means.

This APP can constitute a contribution to some business models considering it can optimize the retail logistics chain and provide a new experience for small businesses that do not have a delivery service in their business. It can also help people to make some money from product deliveries and, on the other hand, allow people to save money on ordering deliveries. The other advantage is the environmental gains, reducing the number of delivery trips.

The application is conceptualized in the peer-to-peer ecosystem, a growing business model already studied by researchers Botsman and Rogers that state in their studies, according to BOTSCHAN & R., Rogers, R. (2010, apud Rodrigues, 2017, p.3), “*we are saving money, time and space, leading people to build closer relationships and to pass from passive consumers to active employees.*”

In this paper we will show the features of the app, the steps of the app’s development process, following the practices and concepts of human-centric design, using User Experience methods and techniques and the conclusions, which also point out the next steps to be taken.

2. THE APP AND ITS FUNCTIONALITIES

The *On The Way* app connects previously registered couriers to users willing to request deliveries. In the developed digital prototype, to be presented, the registered couriers create trips, with routes, approximate dates and times in which they will be available to deliver goods. Users enter their orders, with dates on which they would like to have parcels delivered and the route. The system makes a match between available trips and requests. The price for the delivery is defined by the delivery person in the act of creating the trip. There is a system of mutual reviews of user and deliverer to contribute to building trust in the system.

2.1 User Experience

The User Experience (UX) concept is very popular nowadays to the development of any technology-based system, product, or service. In order to understand its strategic influence in the development of the app, we chose one of the several existing definitions of the term UX. *“All the aspects of how people use an interactive product: the way it feels in their hands, how well they understand how it works, how they feel about it while they’re using it, how well it serves their purposes, and how well it fits into the entire context in which they are using it”*. (Alben, L. 1996, apud Effie Law, 2008)

The application began to have its characteristics defined based on studies raised in initial research, with the aid of benchmarking analysis, and a first stage of UX testing with the low fidelity prototype, still on paper wireframes. At this stage, the tests provided information that was decisive throughout the process of conceptualizing the application's identity: the feeling of trust.

The digital prototype was developed in two phases. The first consisted of the definition of the design system. Its construction took into account the concept of the application, the logo, the icons and other graphic elements. For the user interface (UI) development, we used the program ILLUSTRATOR. In a second moment, to allow navigation in the digital prototype, the mockups were inserted into InVision quick prototyping web platform, tested, and then taken to the UX evaluation phase.

The UX tests were performed also in two phases in the months of November and December of 2018, at the University of Aveiro, Portugal. According to Nielsen (2000), *“the best results come from testing no more than five users, running as many small tests as you can afford”*. So, for this alpha moment (aka first conceptual prototype) of the app, we chose an intentional sample of five people for each phase of the test, all with the same characteristics of the app’s target audience.

The average duration of each test was five minutes, with one and a half minute to navigate in the app prototype and the rest of the time to give feedback. The idea was to have an informal conversation with the participants to get their impression about the app’s flow and affordance. The tests were performed in different parts of the university, like class rooms and cafes, but always to keep the participant in his own interaction comfort context.

Questionnaires and semantic scales, like Hassenzahl and Hassenzahl (2016), besides Cavalcante, Rivero and Conte (2015), were used with the purpose of evaluating the experiences present in verbal and non-verbal communication. Another preselected design method was the 3E, reported by Tähti and Niemelä (2008) as a sensitive design aid in cards that illustrate the option of emotional exercise. However, because of the level of the literacy in this intentional sample, the cards were not used, but their commitments were kept on the numerical and semantic scales, from 1 to 5 (1 is the weakest and 5, the strongest).

During all the tests, we were able to assess the emotional reactions of the participants. One of the most important attributes in the application, trust, was well evaluated in the tests. On a scale of 1 to 5, with 5 as the maximum confidence level and 1 the minimum, the prototype received four scores of 4 and one 5.

Another result was related with the expectations. Before the test, the authors asked the participants what was their expectations concerning such an app. The result were that 60% pointed number 3 (neutral, in a scale from 1 to 5). After the test, we asked how was the experience using the app and the results were 80% scoring on 5 (with 1 as the most unpleasant and 5 the most pleasant) and 20%, scoring on 4. Another result from the tests was the input related to the meaning of some buttons, that some participants found confusing, like the evaluation process of the delivery. So, we improved that, making it clearer that what was being evaluated was the delivery process not the product.

All participants in the tests signed an Informed Consent, in accordance with the recommendations of the Declaration of Helsinki.

3. CONCLUSIONS

After a second round of UX tests, with the digital prototype in the INVISON (<https://projects.invisionapp.com/share/VPPP7D1F834#/screens/337794767>) the app took shape and the programming phase of a Minimum Viable Product (MVP) started. The first MVP version was up and going on February, but still needs to be tested and improved in a continuous human-centric iterative development process, depending on the future financing opportunities.

The UX tests were very important for the development of the app. Mainly the last UX phase, with extremely pertinent contributions, especially in the trust attribute, with 4 or 5 scores in a scale from 1 to 5, where five is the highest grade.

The tests also pointed out other features to be developed in the application in a second stage, such as linking user profiles with social networks, to increase the trust on users and couriers. Other features, like a list of user request alerts for couriers, would also be included in the app after the first MVP deployment.

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