

The Use of E-portfolio as Collaborative Tool for a Creative Economy

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Abstract—This article presents a tool for helping someone who needs to hire a freelance worker. Through a research performed by the authors, the results show that the Tocantins, the newest Brazilian state, has a big number of migrants from other states who have difficulty getting into the job market because they have no references. It also contributes to adaptation difficulties. Thus, the app can help both the local economy and the migrants by giving them an opportunity to take care of their families with dignity. To accomplish that, we used a tool called AppSheet, a framework based on components, to develop a prototype and verify the acceptance of the proposal.

Keywords—*E-portfolios; Collaborative; Professionals; Freelance; Sharing Economy; Opportunity.*

I. INTRODUCTION

Currently, the inevitable and constant interactions between human being and technology have increased in proportions never verified before. The use of smartphones has become as common as the tradition of sending letters in the last century. Smartphones are not only useful for sending messages, they perform many functions that transform them into an important tool for data storage, content creation, media access and collaboration with other persons.

According to IBGE (Brazilian Institute of Geography and Statistics) [1] by 2015, approximately 88% of the Brazilians who have a smartphone do not leave their home place without it, which proves how dependent society is on this device and indicates that the internet has allowed almost 97% of the Brazilian population to obtain access to information in real time, share their information as well, and interact with people and make transactions in various perspectives.

Given this, the rise of the Collaborative Consumption (CC) or sharing economy, the peer-to-peer-based activity of obtaining, giving, or sharing the access to goods and services, coordinated through community-based online services has been noticed. It has been motivated mostly by economic gains. In Brazil, this environment is promising to freelance workers.

In this sense, questions arise: “what to do when we have leaking in the kitchen, air conditioning that does not work, malfunctioning power sockets, a poorly finished

floor, torn clothes, etc.?” These may be very common problems, but are not simple tasks to find a professional who can solve them and, even more difficult, to know whether the work offered is reliable. It is even harder to identify how reliable a given worker is when the usual method for finding professionals is based on WhatsApp groups, family opinion and store catalogues.

Based on this common problem of thousands of people, and thinking of providing a practical and safe solution for hiring freelance workers, it was decided to develop an application that unites several types of information in a single place, either for those who need to find a freelance worker and also for those who intend to offer their services. The application's main goal is to make easier the professionals' meeting with potential clients.

This application is a showcase for the freelance workers, a place where all the information, such as the description of the work offered and the professional's agenda, will be detailed for anyone who accesses it. It will also make it more practical since it will optimize the search for a given professional, for example to fix the problems described before. The advantage of e-portfolio is that it provides a powerful way to collect and share information from professionals, gathers in one place, jobs, knowledge, skills, and attributes acquired during the person's lifetime, generating enormous potential in attracting many more clients. In the context of the search for optimizing the time and quality of the work effort, technology has proven to be an excellent ally in the life of the freelance workers and their clients. Currently, it is possible to have applications that facilitate and organize the entire work routine, and so, the idea of the ‘TÔ aqui’ (meaning: I'm here – in Portuguese) App came up.

In order to address this subject and report on the experience, the rest of the paper is organized as follows: in Section II, relevant related work on the topics is presented; in Section III, we discuss the research paper proposal, with specifications for materials and methods; in Section IV, the results of the research are presented, through analysis of the data collected and the development tool; in Section V, we present our final conclusions.

II. RELATED WORKS

To check if the goals of the users are reached, Maguire [2] shows that the development team must visualize the

translation of functional requirements into technical requirements and prototypes. To do this, mock-ups, storyboards, or prototypes are created and tested sequentially and iteratively with intended users. Wong [3] introduced a method that address an applied user-centered and user-experience product development. The Designers need to identify their target users during the design process either in design, system or interface. These user profiles are based on the characteristics, interest, cultural beliefs, gender, social groups and lifestyle of the target group.

A good user experience is very important for the success of interactive products. Schrepp [4] demonstrates that user experience questionnaire can be used to help the design team measure the user experience of a product quantitatively.

Peer-to-peer markets, as showed by Zervas [5], have emerged as alternative suppliers of goods and services traditionally provided by long-established industries. The authors explore the economic impact of the sharing economy by studying the case of Airbnb, a platform form short-term accommodations.

III. PROPOSAL

Tocantins is one of the 27 states of Brazil. As the newest state in the country, it is a developing frontier area, and its inhabitants historically have been mostly of Indigenous and mixed European-Indigenous ancestry and, in 2015, its population was approximately 1.497 million people. To better understanding the situation, the migration of different people from different regions causes a conflict because of few references in people lives. One example is, the lack of reliability when choosing a professional to perform a particular service.

Imagine the following situation: A housewife needs a plumber as it is leaking in the kitchen. How does she find a professional of her confidence, since she has no technical knowledge about the problem, and especially since she is new in town, and does not know any professionals in the area?

Taking advantage of this problem, we are working on the development of a application for mobile devices, such as tablets and smartphones, that can gather information on a single platform, bringing reliability when choosing a freelance worker to proceed with the execution of a given service. In Section A we will work with more details about the application.

A. Materials

In order to create this app, we used the AppSheet, a web application development platform that does not necessarily require advanced programming knowledge to quickly and easily transform an idea into an app. This tool was chosen, since it is a tool that promotes the manipulation of information in a ubiquitous way: visualization, insertion, editing, and deletion of data at any time, since the given platform connects to highly

available tools, such as the Google Drive. The Google form is a free tool that has enabled us to extract the information outside the academic field, helping us to define and model the application's visual display with more specific content.

The application is made available in a collaborative perspective. That means that the information presented in the application will not be responsibility of the creator of the application. Collaborative Consumption (CC) is increasingly transforming human interaction; one example is the exchange of experiences, services, and products; what is called Sharing Economy when it is related to financial gains.

Thus, the application can reach a huge number of users: those looking for a professional and / or those professionals who wish to expand their business. Furthermore, for the best application navigation and to encourage the user to contribute with relevant information, all views of the application will be developed with the purpose of making it intuitive for users, to make sure they will have no problem in finding any particular data, and to ensure a good user experience (UX). The screens and the icons are easy to identify, allowing the customer to register, view, and update the information.



Figure 1. Views Flowchart example

As showed in Figure 1, the navigation from login screen and a given registered professional screen is made in only three clicks. The usability of the application was simplified as much as possible. So, even the users without experience in using apps will successfully find a professional according to their needs.

B. Method

After choosing the platform, the app interface has been defined in a collaborative way through presentations and discussions during the Telematics Post-Graduation Program classes in order to provide a user-friendly visual experience that meets the previously identified need which is, in this context, to provide to the potential clients the information they need to establish contact with a professional who can execute a given work.

To identify the need of such an app, it was made a query application. It was developed as a survey with 10 questions, which can be seen in Table 1. Those questions were inserted in Google Form platform. In order to serve

a larger audience, the online link of the form was made available through the social networks, such as Facebook, WhatsApp, and Instagram. With the data collection at the end of the questionnaire, answered by a total of 83 people, we were able to provide a solution to the problem presented.

IV. RESULTS

The use of technology in solving problems has become a common thing in people’s lives. Mobile devices are a technology that can, ubiquitously, enable fast access to information, exchange of messages, payments, among others. To make sure there is a need of an app to help people to find a freelance worker with the needed capabilities we applied a survey showed at the Table 1. This survey has ten questions about how often people need freelance workers, how they find them, and their opinion on an app that could help them in these situations.

The results of this research were obtained by interpreting the data collected by a survey evaluation developed in Google Forms. This was done to verify the viability of the application on the market, since until then we were basing ourselves solely on our own need. The questions involved topics about the customer’s need to search for a professional, how often they would use the app, which are the most wanted professionals, among others.

TABLE I. QUIZ

| Query |
|---|
| 1. How old are you? |
| 2. How often do you need a freelance worker? |
| 3. When you need a freelance worker, which resource or method do you use to find one? |
| 4. Would you use, or do you already use, an app on your smartphone to find freelance workers? |
| 5. Which categories of professionals do you need most often? |
| 6. What information about this professional would be essential for you to hire a service? |
| 7. How often do you use your smartphone? |
| 8. For what purpose to you use your smartphone the most? |
| 9. As for the number of apps on your smartphone, how many would you say you have installed? |
| 10. How would an application about freelance workers be considered by you? |

A. Data Analysis

According to Figure 2, we conclude that the app would be feasible, since approximately 80% need a freelance worker from time to time.

How often do you need a freelance worker?

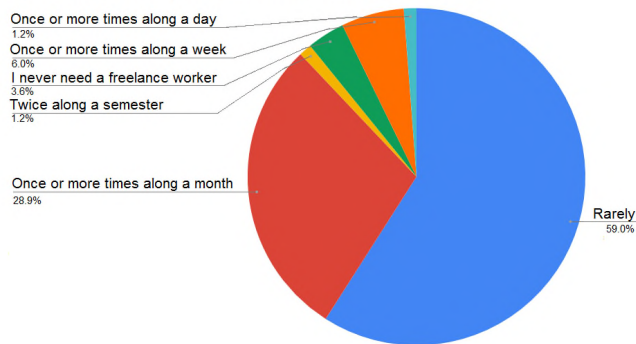


Figure 2. Result of the survey applied.

Other needs verified:

- Identification of the most wanted freelance services:

The results showed that the four most sought after professions are: Masons, Electricians, Mechanics, and Computer Science Technicians;

- The app user possible age range:

By weighted average, it was verified that the average age of our possible users is 32 years;

- Essential information the app most provide for supplying a service:

As can be seen in Figure 3, potential users consider important information to qualify the professional, such as vocational courses, technical courses, or even a higher level course; professional experience such as, places where they have already performed some service; and lastly the one that stood out most as requirements by the users, evaluation of the professional by other people, that is, the importance of the evaluation influences when choosing a professional.

What information about this professional would be essential for you to hire a service?

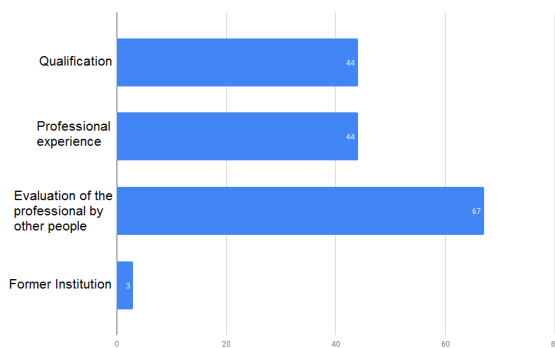


Figure 3. Result of the survey applied.

- And finally, how necessary would this app be:

According to Figure 4, the evaluation of possible users regarding the need for such an app, the result shows that approximately 85% of people questioned consider the app to be essential or necessary.

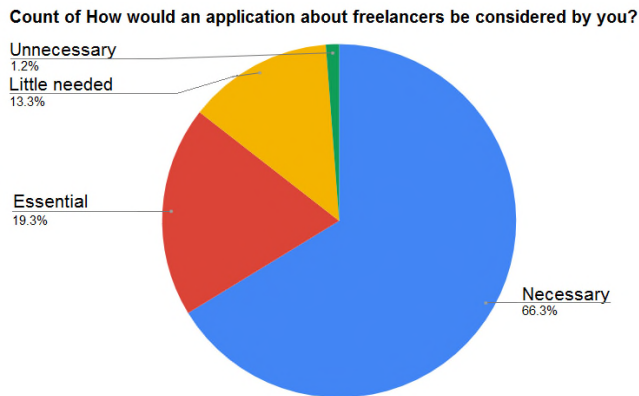


Figure 4. Result of the survey applied.

B. Development Tool

Since it is a development tool based on visual components and the organization of the data arranged in the spreadsheet, here are some screens of the application and the development process.

Figure 5 show the app screens: first, the list of freelance workers category, the second shows the registration screen of a given freelance worker category, such as “mason”, for example. And lastly, the list of professionals registered in a certain profession category.

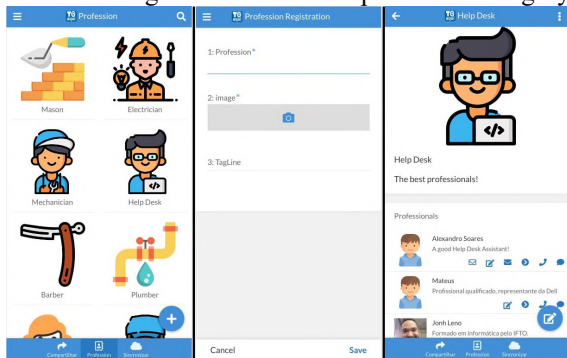


Figure 5. App Screens

Figure 6 shows the professional registration screen, and the description of a particular professional.

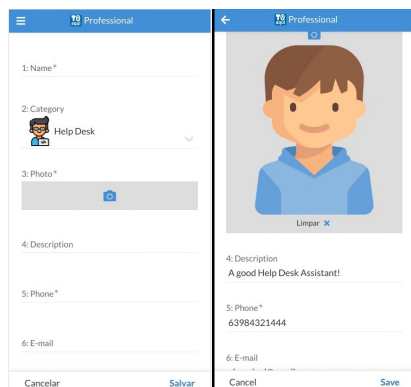


Figure 6. App Screens

V. CONCLUSION AND FUTURE WORKS

Apps are used for a variety of services around the world. In this scenario, the “TÔ aqui” project presents itself as a reliable and viable option for a person looking for a professional to do domestic chores, as for the professionals who need to advertise their activities and work to earn a living. In an unstable job market, offering options for people to work and thus survive, motivate us to contribute even more to the development of this app.

Therefore, in order to continue pointing towards the use of mobile applications to solve problems, from the perspective of mobility, this work presents the possibility of gathering information on trust and credibility in a collaborative environment that will bring more security to the user at the moment of choosing a professional by showing suggestions, evaluations, and opinions left by other users.

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