**Chapter 6: User evaluation results discussion, Project contributions & achievements, Conclusion, Scope for future work**

At a latest stage of the project, an Evaluation Survey Questionnaire was created using Google forms and distributed to users within the target audience of the project to collect feedbacks and opinions about the developed application. From that we are able to do a full evaluation of the project with its reached results, contributions, achievements, conclusion and a scope for future work as it will be explained in the following topics.

**6.1 Evaluation survey questionnaire analysis**

There were **6** respondents to the survey in total (please, see *Appendix XX*). This questionnaire assesses the opinion of users regarding the functionalities of the application as well as the functionalities of Google Assistant connecting to the database through the Google Nest Hub and/or mobile phones.

To Q1, *How user-friendly did they find the application to use,* received 6 responses, all the surveyed (100%) found the application very friendly.

To Q2, *How appealing did they find the overall design of the application (color scheme, font size, design features)*, from 6 responses 50% found the application very appealing and 50% found the application appealing.

To Q3, *How did they find the navigation through the application,* 1 person (16.7%) out of 6 responses found it easy and 5 people (83.3%) found it very easy.

To Q4, *Did they find the login and registration process clear and simple,* received 6 responses, all the surveyed (100%) found the application clear and simple.

To Q5, *How satisfied were they with the application’s ability to stablish connection with an IoT Home device to control some of the application’s functionalities,* 1 person (16.7%) out of 6 responses was satisfied and 5 people (83.3%) were very satisfied.

To Q6, *How satisfied were they with the functionality of browsing categories of pets,* from 6 responses 50% were very satisfied and 50% were satisfied.

To Q7, *How satisfied were they with the functionality of filtering browsing to a specific pet size (Large, Medium, Small),* 1 person (16.7%) out of 6 responses was satisfied and 5 people (83.3%) were very satisfied.

To Q8, *How satisfied were they with the functionality of filtering browsing to a specific pet breed,* 2 people (33.3%) out of 6 responses were satisfied and 4 people (66.7%) were very satisfied.

To Q9, *How satisfied were they with the functionality of having detailed information for the chosen pet (picture, age, personality, shelter),* all the surveyed (100%) were very satisfied.

To Q10, *How satisfied were they with the functionality of looking the location of the chosen pet shelter on the Google Maps, plus contact information about the shelter,* 1 person (16.7%) out of 6 responses was satisfied and 5 people (83.3%) were very satisfied.

To Q11, *How satisfied were they with the functionality of sending intent of adoption form for a chosen pet,* all the surveyed (100%) were very satisfied.

To Q12, *How satisfied were they with the functionality of receiving e-mail from the shelter as response to your intent of adoption form, sent for a chosen pet,* 1 person (16.7%) out of 6 responses was not satisfied, while 2 people (33.3%) were satisfied and 3 people (50%) were very satisfied.

To Q13, *How satisfied were they with the knowledge that this application uses data verification, user authentication, and embedded authorization rules as security measures to prevent unauthorized access to the application’s data,* all the surveyed (100%) were very satisfied.

To Q14, *Did they encounter any technical problems, while using the application (crashing, not opening the intended screen, or not responding),* 1 person (16.7%) out of 6 responses found a technical problem while using the application, while 5 people (83.3%) did not find any issues. The person who found a technical issue while using the application stated that they could not find the confirmation button to finish their registration. After this issue has been reported, we were able to verify that it was a screen size compatibility issue, where the user’s phone screen was smaller than the ones the application was designed for, which has been rectified by simply adding a scrollbar allowing any different sizes of user’s phone screen.

To Q15, *Did they have any suggestion to add/remove/improve functionalities of the application,* 2 people (33.3%) out of 6 responses has suggestions regarding the application, while 4 people (66.7%) did not suggest anything. The two suggestions were related to the filters within the application, where the users found it would be more efficient if they could select a specific breed without having to select a specific size of pet first.

To Q16, *Overall, how satisfied were they with the application,* all the surveyed (100%) were very satisfied.

To Q17, *If they would recommend this application to friends/colleagues to use,* all the surveyed (100%) would recommend the application to friends/colleagues.

**6.2 Project achieved objectives**

The Project’s achievements are as follows:

* Project proposal was done based on performed initial secondary research on the topic;
* Primary research was done on the topic;
* Quantitative research was done using a survey questionnaire to gather information from potential adopters on desired features, functionalities and requirements of the application;
* The results gathered from the survey were analysed and the requirements specification were structured;
* Conceptual model was prepared based on primary and secondary researches;
* The functionalities of the interface and database were designed;
* Coding and testing of the designed application were evaluated by potential adopters who possesses Smart Home (Google Home);
* Integration with the database
* Theses document was completed and the project was presented.

**6.3 Project contributions to research and development field**

In an era in which Smartphones and smart home devices are the major type of communication and daily activities, a mobile application that provides a searching tool for potential adopters to easier find their desired pet to be loved is a valid defence.

The main idea behind this project was to provide such tool to improve the search for a pet. In Ireland, the process of adoption of a pet can be quite complicated form the level of finding the pet to the level of actually adopting it. The adoption itself is dependant on shelter who hold the responsibilities of doing house checks and verifying the background of the adopters. However, the process of finding the pet can and was simplified within this project in a way that potential adopters do not need to leave their home to find the desired pet. Instead of going out on tours throughout several sanctuaries to eventually find their pet, this can be done through your phone, or even just by asking your smart home device to find it for you. The proposed project offers a full display of every animal available for adoption considering different sanctuaries or if the adopter prefers, they can use filters to search for a specific desired animal.

Nowadays, potential adopters have to search through several different Facebook pages, Instagram accounts, different websites from each shelter, including visiting the shelters because the information uploaded in any of these medias are proven through this research to not be real time updated. The facility of having all this information about either shelters and the animals available for adoption in a real time manner and in a single platform in a great achievement and contribution to every one involved in adopting a pet.

With that in mind, this project incorporates the *Principles of Universal Design such as Equitable use, Flexibility in use, Simple and Intuitive use, Perceptible information, Tolerance for error, Low physical effort, Size and space for approach and use* (National Disability Authority, 2020)*; that* can lead to the improvement of the adoption rate in Ireland in a simple and efficient way by using IT capabilities to its maximum potential to have real effects on potential adopters and pets to be rescued.

**6.4 Personal and Professional development achievements**

Many personal and professional skills were developed throughout this project, working as part of a team is one of the most valuable experiences a person can gain from working in a project such as this one. We have gained thorough knowledge on time management, and mainly dealing with uncalled situations and how to overcome unexpected problems. We were forced to deal with a world Pandemic and a country lockdown, which limited our possibilities and we were still able to provide a high standard development. Thus, dealing with pressure in a positive and effective way was also an accomplishment.

This project was an opportunity to apply all the knowledge from our studies into visualizing, designing, developing and creating a platform that we believe will provide a great service for a great cause within the pet adoption reality in Ireland. The opportunity to learn brand new platforms and languages such as Android Studio, Dialogflow and the structure of a NoSQL database were also major achievements during the development of the project.

Within this project we also learnt how to share responsibilities and activities as well as delegate functions and mainly how to help each other in times of need. Sometimes things do not go as planned, thus we developed the ability to provide a different alternative when the plan could not be implemented the way we expected.

**6.5 Conclusions**

This application was developed for potential adopters with the aim to lessen the hassle of finding a pet to adopt by using a single platform which contains information on pets available for adoption on every sanctuary within Ireland without having to travel to each place and see all the pets. We also wanted to provide a link between the Google Assistant platform and the app by gathering information from the database and displaying in the screen whether it is using a mobile phone or a Smart Home device (Google Nest Hub).

The results of our evaluation survey were generally positive. Users found the application easy to use and navigate as well as user-friendly, clear and simple, and they were satisfied with most of the functionalities and the application in general. Our goals towards these criteria were very important thus it is nourishing having such responses.

Though this application has such great responses from user, it can still profit from possible future work in order to improve and add more functionalities within the application.

In conclusion, potential adopters, shelters and pets for adoption can benefit from Pawdopter – the Pet finder app in a way that this service is still not provided in Ireland. Also, the idea of simplifying the search for a pet to be adopted is proven to be needed and welcomed to users as potential adopters and most importantly in terms of improving the adoption rate in Ireland.

**6.6 Scope for future work**

Due to a short time frame allocated for the development of this application, it was unrealistic to undertake the shelters’ interface thus, the shelters’ information as well as the pets’ information were hardcoded onto the database. With that in mind it would be a major improvement to this project the development of this interface once the main idea of the project was to create an interconnected database with all sanctuaries within Ireland in which the information of either the shelters and the animals would be updated and uploaded by the shelters.

For the same reason, the High-end solution from the three proposed designed solutions at the end of the analysis phase of the project, was also unrealistic to carry out. Within this solution, a chatbox would be developed allowing the communication between shelter worker and the potential adopters. Thus, this functionality would also be a great improvement within the project and the quality of the pet search.

Also, with the evaluation survey we could determine that the filters (Category, Size and Breed) should not be nested. The reason why is because people who already know a desired breed should not be obliged to go through the step of selecting the size of the animal. That would mean less clicks on the screen. However, it would be beneficial to keep the category to be selected mandatorily at first to optimize the list of breeds to be displayed on the dropdown menu.

Another improvement to be made towards the security of the application is related to the storage of the users’ password onto the database. Since the Firebase has an authentication system there is no need for us to store this information which can cause a risk on the security regarding the access of this sensitive information.

**REFERENCES**

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