Feasibility Study

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JustHealth

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1.0 Introduction

1.1 Purpose and scope

Applications are designed to make specific aspects of life easier; JustHealth will improve the safety of the user by assisting their medication routine. Defining the target audience as both patients and carers gives allows for some extra functionality within the application. We are looking at some of the primary challenges associated with full time care and incorporating them with the latest technology to help.

1.2 Objectives

JustHealth will be an application that deals with some of the major challenges in the health care industry. It will be created using Android software development standards and will integrate with a web-based application for non-android users.

The applications will assist patients with when to take medication and remind them when they haven't. The mobile application will integrate with the native calendar application and will track appointment times, containing doctor's details for ease of use when trying to make contact.

JustHealth will include functionality for the carer to access medication records and other information to assist with caring for the patient.

The database must comply with necessary security standards in order to ensure the safety of medical records and patient confidentiality. JustHealth will also comply with current web content accessibility guidelines (WCAG 2.0) in order to meet the needs of our target audience accurately.

2.0 Study

In this study we will look into the operation, technical, schedule and requirements feasibility. It will also analysis the current market and the risks associated with this project and come to an overall conclusion on how successful this product can be.

2.1 Operational feasibility

If the system is developed, will it be used?

From our market research and target audience research over 83% of the people loved the idea and thought it would be extremely successful. As a project we are not trying to match people up with carers or even search for carers in the area we are simply improving the process of caring for a patient and helping someone with a chronic health condition stay up to date and on top of their health condition. We feel this product will become extremely useful and regularly get used.

Human and social issues

Since this application will hold personal and sensitive information we fall under legal issues of the Data Protection Act, 1998. Throughout the development and the production lifecycle of the application JustHealth and any affiliates will stay within the UK law and aim to achieve higher standards than what the act requires. This has been explained in more detail in our legal documentation. We feel as long as we make sure all our data is secure and private our app will become socially acceptable and used regularly by carers and patients.

2.2 Technical feasibility

What technical risks are there?

Browser compatibility can potentially be a problem when it comes to developing our web interface, especially with Internet Explorer. To overcome this we have decided as a group not to develop for anything lower the Internet Explorer 8 otherwise this would involve a separate style sheet. Our Android compatibility can also cause problems. However, we have decided to develop the app for android 2.3 upwards to overcome this problem.

Security of data is another technical risk we face. To overcome this we will design and build a safe and secure database, test our system regularly and ensure that the application has 2-factor authentication.

Is the project possible with current technology?

As a group we feel that technically we are able to complete this project. We had different options when it came to choosing a platform to develop in (as seen in our why android document.) We decided to develop in android because we already have prior Java knowledge. We have all the necessary technology to create this project and private secure systems from the university.

2.3 Schedule feasibility

This project requires a high level of technical knowledge. However, we feel that with the prior Java and web development knowledge that we have already got that it will not take us long to get to the level we require to develop a android application. The project will be scheduled so that the first few iterations will focus on small simple tasks primarily with the website, which we have stronger knowledge in. Once our Android skills have improved we will then work on the mobile application development. By iteration 4 or 5 we will have both the web and phone application at the same level and from then on develop the phone and web applications in parallel.

We will schedule 2 week iterations because we feel as a group we want a quick turn around and will stay more focused if we have short quick targets.

Our project deadline is our university week 21. We aim to have all the basic requirements complete by Christmas and in the spring term work on extra additional features. We will aim to stick to the Gantt chart as much as possible however, we have allowed ourselves contingency time in case we fall behind with development.

2.4 Requirements feasibility

Are our requirements able to be fulfilled?

For our project we have come up with a list of overall requirements in the MoSCoW method. We have broken them up into Must, Should, Could and Wont. Our project aim is to have all the must and should requirements complete by Christmas this will mean our application will be fully functioning and useable. After this we will perform user testing and work on the ‘could’ requirements.

We feel that all our must, should and could requirements can be fulfilled with our technical knowledge and skill set we have acquired over the past years. We have elected a technical manager who will oversee all the technical work and we will test our system at the end of each iteration to

ensure all requirements are met to the correct standard. Overall all our requirements are feasible with our technical knowledge and skill set.

MUST

1. Login Screen
2. Carer Interface
3. Patient Interface
4. Personal Profile
5. Ability to update personal profile at any time after account creation
6. Ability to add medication incl. frequency, dose, name, criticality (determine the alert to the carer)
7. Access Control (Security, Privacy etc)
8. Accessibility Features (per WCAG 2.0)
    a. Larger Fonts
    b. Bold Fonts
    c. Change colour scheme
9. Ability to de-activate the user account

SHOULD

1. Record and track medication that has/has not been taken
2. Reminder to take medication
3. Alert carer to abnormalities i.e. if medication hasn't been taken
4. Ability to record appointments with the hospital/GP etc.
5. Emergency Alarm to carer, this feature may to be turned off
6. Interfacing with NHS Direct website
7. Database of drug names

COULD

1. Remind carer if they are running low on medication
2. Alert Pharmacy if they are low on medication (by email)
3. Track the movements of patients using google maps
4. Give directions to the doctors or hospital when the patient has an appointment
5. Live chat – patient is able call or instant message the carer
6. Heart Rate monitor
    a. Ability to record and track this over time
    b. Ability to alert carer of abnormalities
7. Blood Pressure monitor
    a. Ability to record and track this over time
    b. Ability to alert carer of abnormalities
8. API to support accessories
9. Wheelchair request/Wheelchair accessibility alerting (Integrate with TFL)
10. Links from emails to put appointments directly into the app
11. Facility to allow carers to notify patients easily if they are running late
12. Primary/Secondary Carers to account for holidays etc.
13. Text to speech functionality
14. Interface for relatives to be able to track patient medication/appointments etc.

WON'T

1. Call 999 if no response from carer/patient after emergency alarm is activated.
2. Support smart watches

2.5 Management capability

In our group we have all been assigned roles to ensure the project is completed to the standard in which we have set. These roles are project manager, technical manager, risk and test manager and quality assurance manager. All these roles each have their own tasks but together will ensure the overall success of the project. The details of the roles can be seen in our role document

2.6 Market analysis

From our market research we have found that there is nothing like this already in the market. There are applications that offer some of the features we are building but nothing that combines them all and allows the carer and patient to interact with each other. We have also spoken to patients and carers who think this idea would make the caring process easier and allow patients more control on their day to day live with their health condition.

This can be seen in more detail in both our questionnaire results document and our market research document

2.7 Marketing strategy

Once our application has been built, to ensure that it is successful and users download and use the app we have decided to advertise with posters in local hospitals, doctor's surgeries and rehabilitation centres. We will also contact large caring organisations and advertise with them.

2.8 Risk analysis

For this project we have identified many risks and analysed what we will do to prevent or mitigate them. We also have selected a group member that will be in charge of the risk management. This can all be seen in our risk analysis documentation.

3.0 Overall feasibility evaluation

From accessing operational, technical, schedule, requirements feasibility and also looking into the management capability, the current market, our future marketing strategy and completing a full risk analysis we have come to the conclusion that this project is feasible. We have all the resources available to us and have a large amount of time to complete this. We have identified all the risks that could possibly occur and devised a solution to be able to mitigate these.

The majority of people we have spoke to thought the product was an excellent idea and that it would be a success.