National College of Ireland

Project Submission Sheet – 2017/2018

School of Computing

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I hereby certify that the information contained in this (my submission) is information pertaining to research I conducted for this project. All information other than my own contribution will be fully referenced and listed in the relevant bibliography section at the rear of the project.
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Date: 17/07/2017

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3 Assignments that are submitted to the Programme Coordinator office must be placed into the assignment box located outside the office.

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Lean Canvas

Cloud based e-healthcare Application

17-July-2017

Problem

- People in isolated district of India are living in a lack of healthcare facilities.
- Hospitals are distant from villages.
- Due to violent protests they are not able to reach to the nearest hospitals,

Solution

Cloud-based app which can book appointments with doctors on a location-based frame, recommends generic salts, and stores and retrieves diagnosis reports.

Key Metrics

- Reliable doctors
- Data synchronization
- Collecting user feedback for doctors
- Diagnostics for people using app
- Doctors rated automatically by the app and by patients as well depending on patient feedback

Unique Value Proposition

1. Interactive and informal UI
2. Supports most local languages
3. Diagnosis are saved on cloud free of cost and available to the concerned doctors who need them for convenience
4. Easy and 24/7 access to doctors

Unfair Advantage

1. Generic salt option is hard to duplicate.
2. Company will use word of mouth to increase the faith of users in itself which will help connect users with the app.

Channels

- Advertisement
- Social Media
- Social Volunteers
- "Word of Mouth"
- Advertising with our local partners without paying them

Customer Segments

Users: patients suffering from non-commutable diseases and doctors living in the district of Assam, in India

Customers: doctors serving in these isolated areas helping gather patient data

Cost Structure

1. Cloud based app development and deployment cost
2. Software licensing cost.
3. Salaries
4. Promotional activities and maintenance.

Revenue Streams

1. Online advertisement on our app.
2. 20% commission from the consulting fees from the doctor.
3. Commission from the generic salt manufacturer.

POCDoc

BUSINESS PLAN

1. EXECUTIVE SUMMARY

- POCDoc is formed by Vikas Sharma, as a startup student of national college of Ireland, Dublin. Which tend to focus on developing a village e-healthcare management system.
- The POCDoc is an interactive application which will overcome the problems faced by people living in isolated or remote areas. It is an application which will allow people to place their appointment to the doctors from their village only. Users can save their diagnosis reports on cloud. Customer can even get the option for generic salts of medicines and pay the doctors consulting fees from the application only.
- The application will be divided into three categories, appointment booking, generic salt of prescribed medicines and save diagnosis report.
- POCDoc will provide ease of payment system as well, users can pay from their application itself instead of paying at the reception at doctor's clinic. Application will generate a ticket for the appointment. this payment will be secured with PCI security standards for safe payment.

2. Company Summary:

   POCDoc is a startup company, which is formed Master's student Vikas Sharma, of National College of Ireland in 2017. Company is currently focusing on developing an e-healthcare application in underdeveloped/isolated areas. POCDoc is a company providing solutions such areas where the healthcare system infrastructure is not appropriate or lacks to serve the communities. POCDoc will be a cloud based application to provide facilities to the people. As the company grows, we will focus on improving the facilities for the people of underdeveloped countries with the use of technology which will be safe for the environment as well as user-friendly.

Lean canvas model description

1. Problem:

People living in the isolated parts of India, specially in the north-eastern part which has the negligible connectivity and hence limited governance access. Only a few healthcare infrastructure facilities are provided with limited resources. Very few road network link is there for the road transport communication system to visit a doctor. On regular basis it is cost a lot for the poor people living in such conditions as well as time consuming.

1. Less government facilities: currently government is working only on local infrastructure like road links, basic sanitation and including people to the basic democratic mainstream.
2. Violent protests makes it more difficult to government to provide the essential facilities.
3. Slow and time consuming clinic checkups, patients have to wait for hours in queue for getting consultations.
4. Rare and costly drugs prescribed by doctors makes it difficult for patients to accommodate the high expenditures and looking for the drugs.

For the progress of any country citizen of that country needs to be healthy and fit. So that they can give their best in their fields which results into the prosperity. As per best of my knowledge and assumption government is not able to provide the facilities for these people and they are still living in lack of medication and are dependent on the indigenous and home remedies. Many uncertified doctors and quacks are practising in these areas which is highly dangerous. At the time of any viral diseases people suffers a lot due insufficient quality treatment.

2. Solution:

To overcome these problem POCDoc Pvt. Limited is going to deliver a solution with cloud based e-healthcare interactive application POCDoc which will solve these problems as well as adds an X-factor to the healthcare system.

POCDoc will allow the users to make appointment for their visit to certified and eligible doctors, save their diagnosis reports, and to find the cheapest and universal generic salts for expensive and rare prescribed drugs.

POCDoc is an app designed to since it will help book an appointment with a doctor and give a diagnosis report without actually having to make a trip to the doctor's clinic.

This will help with resources as well. Since the government is not allocating enough resources to the public for funding health-care, the cost can be off-sourced to the patients. They will pay a reasonable amount to get a diagnosis from the doctor, and app users will get a commission by the doctor to reduce their fee.

Although the patient has to visit the doctor's clinic for diagnosis in person, the doctor creates a diagnosis report and uploads it to the patient's online profile, where it is available for many other specialists to view before they make medical recommendations. This eases the process of having to bring reports to each and every medical centre. They can simply access them online when the doctor or patient sends it to them.

There is no waiting in queues for a checkup and diagnosis like is usually the case. Once a health report is generated, it is very easy to share it with different specialists.

To solve the problem of expensive drugs which are recommended by medical centres, doctors are given a list of with generic salts for a much lower price and perhaps higher effectiveness. These salts can be given to the patient depending on the diagnosis of their condition as they have a wider range of treatment capabilities than expensive medicines which can have harmful side effects, and possibly won't work. The drugs for exorbitant prices are also usually very specific in the problems they treat, unlike generic salts. They can work across a range of diseases.

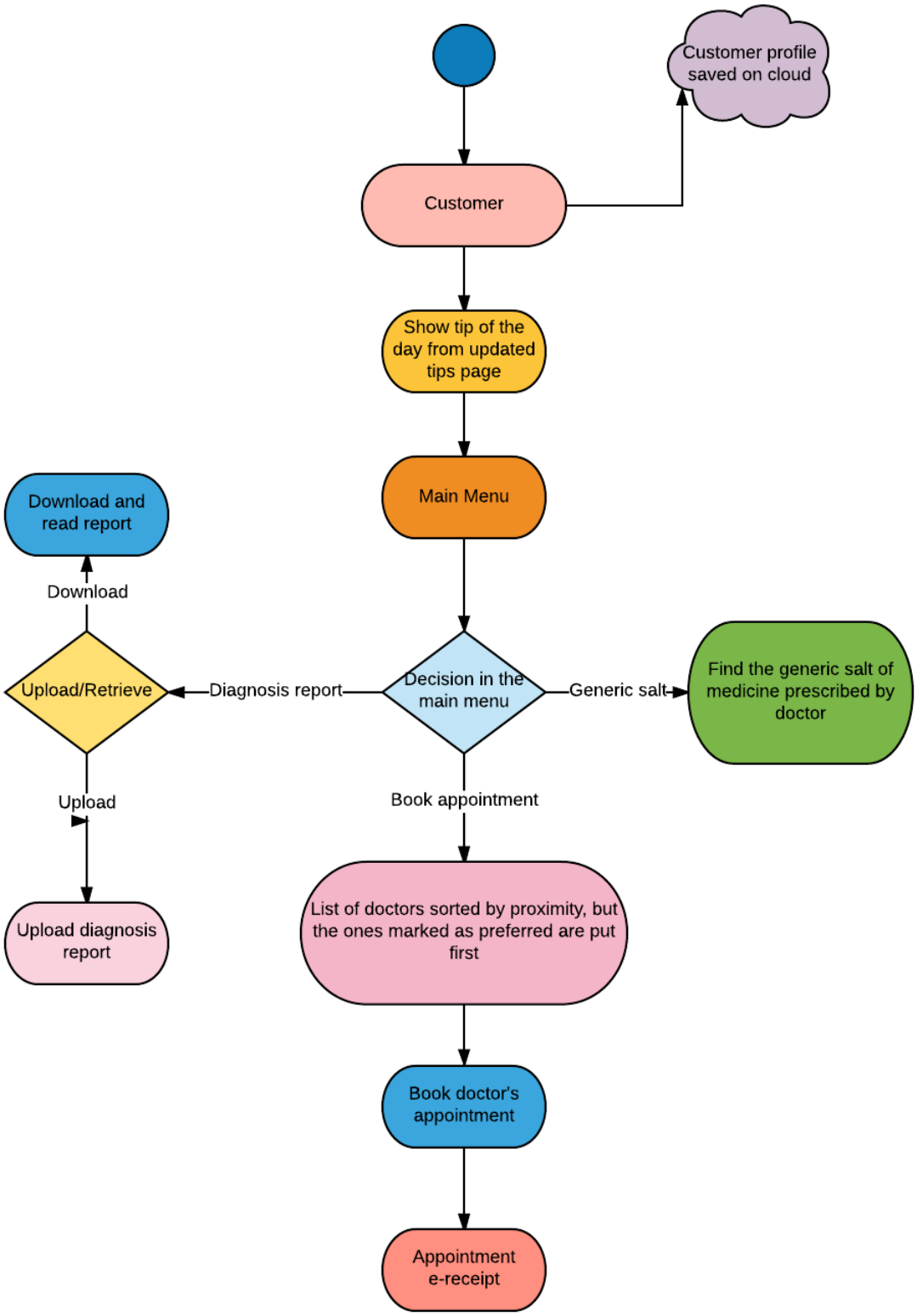
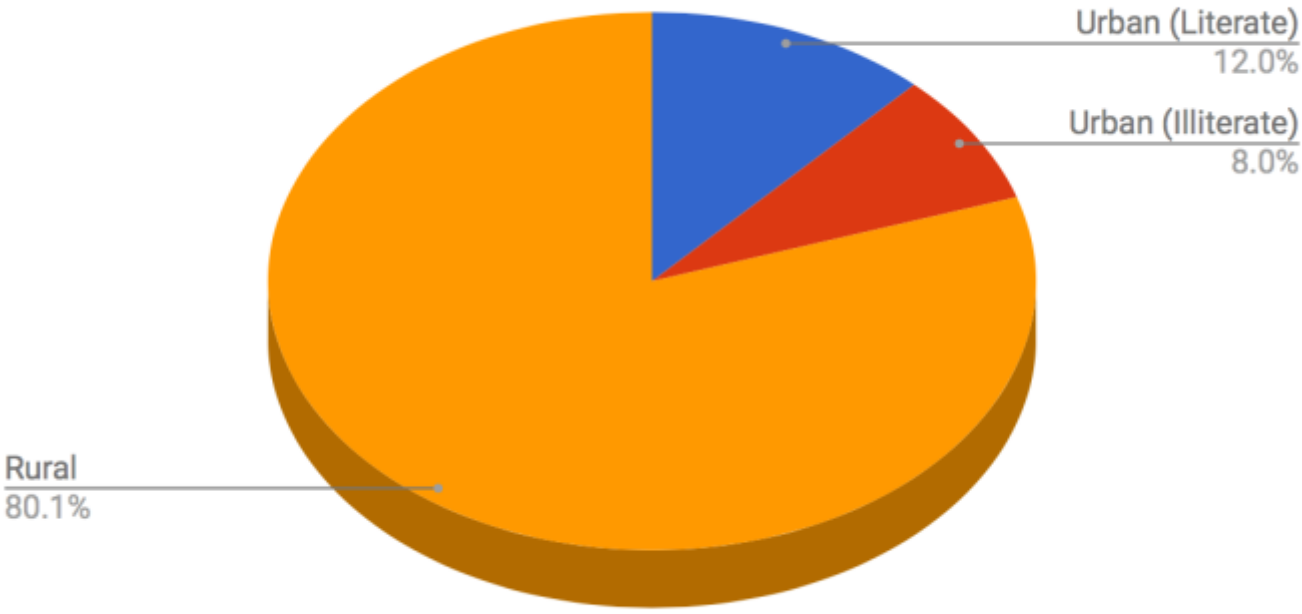


Fig. 2.1 The expected workflow of POCDoc

3. Customer Section:

Every product is designed keeping customers in mind. This idea was developed to giving a socio-tech solution for problems mentioned by united nations' global goals for sustainable development. Company is designed to provide the services to the people living below poverty line, in remote/isolated areas.
As the number of target customer and users is big company's policy is to start from the place where it is required the most and keeping the customer segment as specific as possible. POCDoc believe in self sustainable business policy and will spread their customer accordingly as the feedbacks and with a better way to serve.

Customers of the company will be doctors and pharmacy shops whereas users will be the patients.



The rural and urban population of Tinsukia, Assam is represented in the pie chart above. Out of them, 80% is rural and will not have access to smartphones or Internet, so they can be ruled out. In the urban population, around 60% of them are literate and therefore be able to use the Internet and phones. They are the target customer segment of the company.

4. Revenue Stream:

1) **Commission on the consulting fee from doctors:** our main revenue generation will be from the consultation fee. Company will charge 20% of the consultation fee from the eligible and certified doctor in respect to providing patient. Doctors will be happy to give this much amount in order to increase their no. of patients with a continuous order.
2) **Commissions from the local certified pharmacy shops**: company will charge a 2% of commission on sell of every generic salt option generated by the application from the pharmacy shops.
3) **Advertisements:** The last but another effective piece of generating revenue is from advertisement. Company will use a policy like google Advert to show pop-up and flash advertisement.

5. unique value proposition:

1.**interactive and informal UI:** Detailed information about every service will be user friendly.

2. Application will be launched in the local language more people will be able to use it. So that there will be no dependency upon English literate persons.

3. diagnosis saving portal- all the diagnosis will be saved on cloud and will be available on cloud remotely whenever required. It will decrease the burden of carrying reports with patients.

4. Easy and fast access to nearest doctor: app will provide the location of the nearest doctors with their address. In case of emergency it will be faster to visit doctor even in night time when most of the clinic are generally closed.

5. Appointment system will decrease the queue waiting time which will be helpful.

6. Channels:

1. **Word of Mouth:** words are the universal factor for any business to run successfully. In such isolated areas it will play a vital role by telling people about our services.
    a. In early days volunteers will be raised and sent to villages telling the locals about the application and its benefits. In this process local help from youth will be taken which will develop the emotion attachment of people with the application.
2. **Advertisement:** advertisements are one of the important key factors that must be considered as it reaches to the customers easily. We can attract more users and

customers using bus shelter posters, bill posters, distributing brochures, pamphlets and hoarding.

3. **Social Media:** in 21st century social media is one of the best keys to reaching customers no matters where they are. There are enormous possibilities where application publicity can be done at a low cost. Facebook will be the biggest medium to make people aware about the application and services.

7. Key Metrics

1. Doctors and their diagnosis should be reliable. Therefore, the app needs to be associated with good medical centres who hire highly qualified medical professionals.
2. Data synchronisation should be ensured between doctor(customer) and patient(user) because they will have a slightly different version of application. The doctor needs a feature to upload patient report diagnoses, and the patient should be able to download and view them in an appropriate file format.
3. The app will regularly collect user feedback from the patients about a particular doctor or medical centre. Ratings out of 5 or 10 will be appropriate. This is also aimed to find out if the patient's health improved after a doctor's diagnosis or deteriorated.
4. The app will keep track of diagnostics such as the number of people using it, how it is rated on the app stores of iOS and Android, and its ratings on the stores. Anonymous user data can also be collected from every user who has installed the app on their smartphone. This helps in improvement of the app using the logs collected. If anything in the app crashes or doesn't work as intended, any user can file a bug report with screenshots, activity logs, and diagnostics to send to the developer for corrections.
5. The doctors will be given ratings from the patients as well as by the app automatically based on the data gathered from the patient reports. A doctor is given a higher rating when a patient's status on consulting them improves, and a lower one is given if their condition worsens after consulting them. There is no change if the patient's illness is not cured or remains the same. A doctor's ratings climb higher the more patients they treat, and fall if they cure less patients, as well as compared to all other available specialists. These ratings are an overall average of the most patients treated from all the ones coming to them, and all of those who have used the service by going to any other doctor. A doctor simply has to cure more patients than the ones whose condition remains the same or worsens to keep his ranking optimal. If he cures more patients than all of the others, his rankings climb to the top and stay there as long as his curing streak continues. Of course, some doctors will always cure more patients than the ones who deteriorate, as well as compared to all other available doctors. The ratings are then based on how many patients they have cured, and if that doesn't decide who is on top of the list, the patient's ratings are used to elevate their ranks. If the patient's ratings are similar too, it is done based on the number of consultations that they have done and the reports generated. If there is still no tie-breaker, the app searches their ratings according to the medical centre they work for and uses them without changing the ratings received by the patients or automatically generated by itself. These lists are useful when a new user joins the

app or when someone who hasn't consulted a certain doctor wants to know how they are ranked. These rankings are displayed prominently at the top of the page for booking appointments and on a separate screen for future reference. They can be used whenever someone needs information on a doctor they don't know, or just to see who is the specialist most likely to diagnose their condition. Other ratings like the speed of diagnosis or how the reports look are not factored because of their complexity and the calculations or algorithms involved. They may also slow down the app when a patient is booking an appointment, so it best to leave them out in case the app freezes or crashes while making appointments just because of complex calculations which aren't necessary or won't improve accuracy of the application's usage.

8. Unfair Advantage

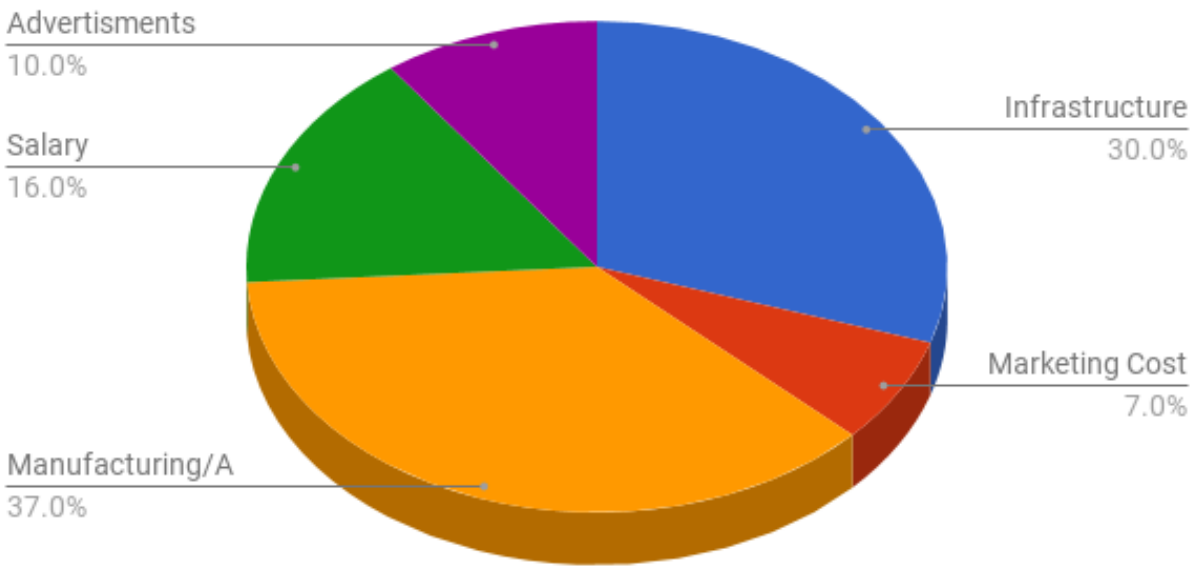
Unfair Advantage for any start-up is one of the factors which strikes the start-up apart from its rivals. It is the uniqueness that you should have against your opponent. It defines the way you are different from an approach from your counterparts. It is some special thing or feels that your product/service that you cater to your customers.

- Generic salt option is hard to copy. The system uses a set of generic salts which are suited for general treatment of most disorders, instead of an expensive drug which only treats a very isolated problem or diagnosis. As long as the methods for preparing these salts are kept secret, they are very hard to duplicate.
- People living in isolated area are not in the priority of many companies. There will therefore be less competition in the market for apps targeting rural patients, most target the richer, urban sections of society.
- The "word of mouth" will establish a relation with customers which will be harder for the opponents to copy. The volunteers or canvassers who help promote the app will form a rapport with potential users in villages which cannot be replicated. The sales pitch and method which they use to communicate with rural people about how the app is used, what are the benefits, and how much they save on using it will be kept unique and localized to the district in which the target customer segment exists. Since it is kept restricted to the nearby population, it will only be understood by those who speak local dialects and cannot be reused easily.

9. Cost Structure:

Cost Structure defines the total number of the expense that is incurred by any business from production till market. Cost structure will include all the variables and fixed cost related to startup. The expenditure for the Alpha Table start-up are categorized as follows:

- Infrastructure Cost
- Marketing Cost
- Manufacturing/Assembling Cost
- Salary
- Advertisement



Infrastructure Cost relates to all the basic expenditures related to the organizational structure such as building, power supply, salary, Internet connection, Stationary Supplies etc.
Marketing Cost will relate to all the expenses with marketing, before and after production. Expenses refer to creating a website, social media promotions, brochures, pamphlets etc.