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## **Executive Summary**

The following report details a product that was proposed by the group members which is named as Mantra Okhati Application- a mobile application that is designed for health care of children of our city. A team of professionals in the field will create and implement the algorithms and software as well as provide business experience to the company. An application was developed with the main purpose of providing solutions to existing health problem of children. The technology used in our application is programming language like C++ and other language to implement the code and various computing technology.

Idea generation techniques such as Force Fitting triggers and Mind mapping have been used to generate the maximum ideas as possible. These techniques have been used to assist in solution of problems as well as the evaluation of the effect of ideas generated. The next procedure was to introduce an application which includes its prototypes, technology used and the principles of application. When the prototype of an application was ready then the developers recognized the market and begun the advertising campaign of an application. The last stage of the report assessed the idea by using different analysis like SWOT analysis and different other analysis by different group members to determine whether the idea should be pursued or discarded.

## Introduction

## 1.1 Company Background

Mantra Tech is an Information Technology (IT) Consultant Company established on 2010 A.D. that is experiencing consistent rapid growth and progress over the years. This company is well-known and dedicated IT company of Nepal since its formation. This company helps to deliver innovative solutions on customer services/products. Mantra Tech is committed to actively listening to the community and assisting them in every way possible by bringing appropriate solution in response to their problems. Mantra Tech intends to introduce a brand new application (Mantra Okhati) seeking solution to existing health problems among city children as a result of

its excellence involvement in the fields of creativity and innovation. Thus, the company aspires to develop a solution that is commercial and able to sustain for at least 5 years, if not longer.

# 1.2 Problem Analysis

## 1.2.1 Problem Statement

Hectic schedule, transiences, inconsistencies and lack of appropriate knowledge about children's health is creating fatal issues, among younger age group.

## 1.2.2 Objective Statements

Student's Name	Student ID	Objectives
Sandesh Subedi 'A'	NPI000040	To construct a prescription reminder mobile application that is integrated with almost every hospitals and pharmacies in the city, and can assist patient virtually.
Nabin Chhetri	NPI000032	Mobile application helps people to clarify about the diseases, symptoms and prevention, if they themselves or their children suffered from any diseases.
Suraj Pandey	NPI000051	To provide health facilities through digital technology
Sandesh Giri	NPI000041	To develop a mobile application that focuses on health care of children and keeps the information of doctors of children and many more features.

## 2. Idea Generation

### **Mind Mapping**

Mind mapping is the concept of graphical technique in order to connect imagination between the pieces formed from ideas or information. This technique is usually used for developing the new product. The main purpose of utilizing Mind mapping is for taking notes, finding solution to solve problems, planning projects, improving your study, setting career and personal goals and brainstorming.

### **Advantages of Mind mapping:**

### Best technique to connect multiple types of list:

We can focus on the ongoing conversation properly that makes easy while you attend meeting which indicate to form itself a to – do list.\_

#### Best technique for tracking which need to be done:

You can easily know about what need to be done and relevant information should be divided to group member about the project when you have written out in your to – do list.

#### Best technique for visualized the complicated task:

Moreover, Mind mapping is the best technique for task break down into small chunks which can be faced out easily.

#### Best technique to point outs notes quickly during a meeting:

In addition, mind map is actually a best technique to get solution for old aged information which had issued and that has been overloaded.

#### **Disadvantages of Mind mapping:**

#### Over complicated faced easily:

Mind maps does not contain complicated sentences in which it needs group of phrases and words. That why, idea can be trigger easily by your brain for remembering information through breaking down words.

#### Messy can be seen on paper:

While you write out in mind map by using pen, it cannot have enough space for a branch of ideas or you can write easily something in wrong way. Then, mind maps make it as breezily which indicated to exist of software.

#### Tasks cannot elaborate easily:

It will be poor choice for choosing mind maps, when you are working on some projects and suddenly you have to note down truly complicated words to get sense at a later date. Notepad might contain some lifeline in it, so we should not throw out that notepad.

#### Proper mind map need consume time to build:

For good mind maps, there need to be some extra time to write out. When you do not have enough time, then make sure that you gather and write out properly and need to be move as soon as possible before mental snapshot lose by you.

After analyzing the problems, majority of people lives in cannot visit hospital due to lack of hospital in some countryside areas. Moreover, they are not able to know the diseases, symptom and their preventive measures. People who are physically disabled or has problem of mobility might get difficult to visit hospital while they get small injury. So, from Mind-mapping technique which used in mobile application can be easy for countryside people to take care themselves properly.

The best is idea generated to solve after analyzing issues which mentioned problem analysis part:

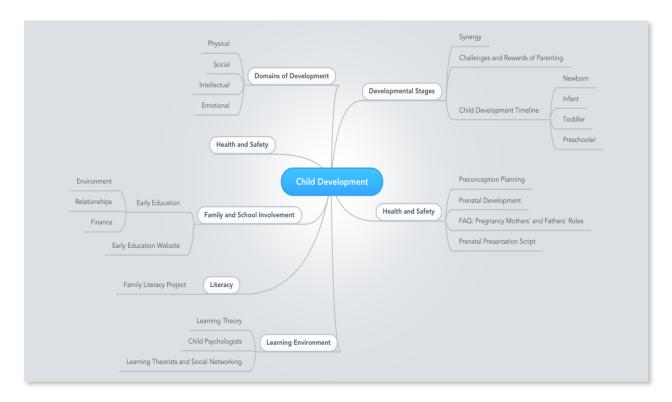
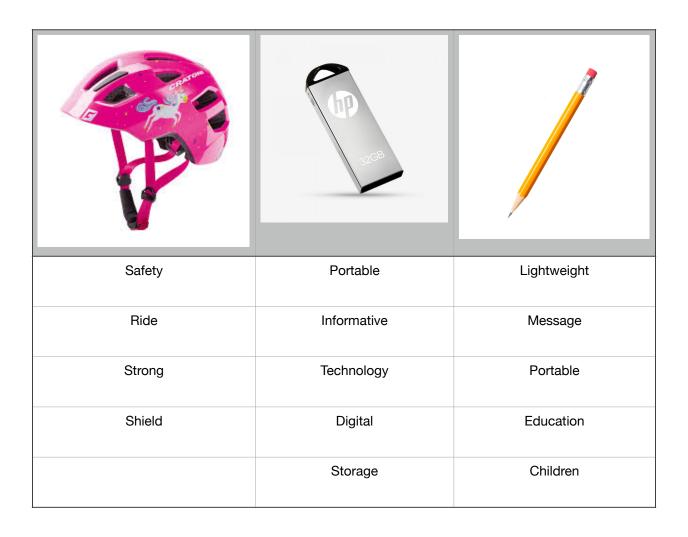


Fig: Mind Mapping

Moreover, use of digital technology is raising highly in all over the world. And, majority of people are depending on their use of technology. Due to hectic schedule of people in this 21st century, they wish to complete their each and every task through mobile application. In addition, each and every sectors like education, shopping, banking and even health sectors are impacted by digital technology. Due to digital technology, people does not need to visit bank for small transactions. Similarly, people does not carry money for shopping because they prefer to pay through technology available in mobile like, esewa, and other application. This indicates that people are more lean towards the digitalization. So, after analyzing above problems, people love and more prefer towards digitalization which will be easy for understanding that only done by Mind mapping. So, development of mobile application would be greater success for our company in future.

#### **Force Fitting Triggers**

Force fitting trigger is a simple idea generating technique. This is the most commonly used technique for the development of the new product. So, we have also chosen this technique for our project too. In order to generate idea using this technique we need to list down three unrelated object. They must be placed in tabulated form in a single row but in different column. Then, one word attribute of each object which describes object are listed in respective column. After that at least one word from three different column are combined together and a list of such combination is prepared. The best possible combination of the words are chosen and idea is generated which can solve the problem mentioned in problem analysis part.



As mentioned in problem analysis, the problem are that due to current scenario it is difficult for parents to take their children to the hospital, if small injury happens to them which can be cured at home. Similarly, It is a great problem to those parents who has the problem of mobility or are physically disabled. So, from above combination best possible combination is mentioned below with its outcome.

Combination	Outcomes
Portable(small device) +Message(notification	A mobile application which notify regarding
or chat)+ informative +Safety(measures)	medication time and medication refill along
	with chat facility with doctors and information
	regarding medicines and first aid measures.

The use of digital technology is now rapidly growing. People wish to do their each and every work through mobile phone. Digital technology has great impact in every sector like banking, shopping and even health sector. People does not want to visit bank for small transaction. They even does not want to carry money with them rather they wish to pay through various software available such as eSewa, Fonepay or any other available application. So, this shows that people are more lean towards digitalization. So, after analyzing problems mentioned above and people's love towards digitalization, development of mobile application would be the greater achievement for our company.

## Individual Section (Sandesh Subedi 'A') - NPI000040

## 3. Competitor Analysis

After deeply observing the market, few companies which can be considered as competitors of **Mantra Okhati** came under our sight. The companies are :

#### 1. Divine Med



'Divine Med' is the first online prescription reminder application in Pokhara city. This application was introduced by a group of business stakeholders back in 2016. Divine Med aims to remind people who are a regular medicine consumer. By affixing a particular type of alarm inside the app, patients are reminded in a time to take their medicine. Additionally, the application also provides basic information of some medicines that avoids users from any sort of confusion.

#### 2. Hamro Medico

'Hamro Medico' is a health related application, that provides information about medicine from anywhere, at anytime. The app comprise of a feature that allows users to scan the code in medicine bottle and receive the details (Acharya, 2000). This application system was developed for users to let know if they are using the correct medicine.



This was probably the most popular medical application in Pokhara city of Nepal until 2019. However, due to some uncertainties within application features, users started opting alternatives.

## **Attributes Comparison**

Attributes	Divine Med	Hamro Medico
Uniqueness	Divine Med Application introduced a inbuilt alarm system within the application along with medicine name and its information.	Hamro Medico established a scanning feature in their application that facilitated users to check medicine details by simply scanning the wrapper barcode.
Limitation	This application provided basic information about the medicine but it provides no integration facility with any hospitals or clinics. Users complained about unassured information and lack of automation in the application as well.	Scanning feature in this application turned out to be disastrous. There are hundreds of complaints from users that says scanner does not function and even views imprecise results more or less times.

Attributes	Divine Med	Hamro Medico
	Machine Learning	Bar-code Recognition
Technology	Machine learning refers to analyzation of data, that allows system to gain understanding, recall and make alterations without instructions. Divine Med uses machine learning to remember user inserted medicines and also recommends other similar information.	Bar-code recognition studies the figure like code from the products, detects what it is, and provides information relevant to it. Hamro Medico uses this technology for their scanner feature.

## 4. Product Concept

### **Objective Statement:**

To construct a prescription reminder mobile application that is integrated with almost every hospitals and pharmacies in the city, that can assist patient virtually and makes sure that no patients ever miss their medicine.

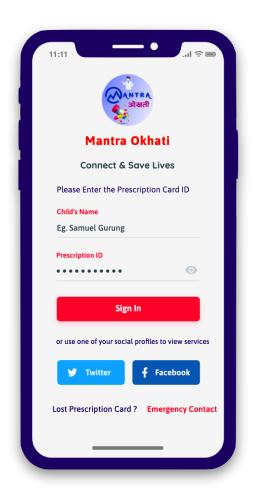
### **Product Concept Description**

'Mantra Okhati' is a smartphone application designed to provide a trustworthy way to lessen patients disobedience. Our application focus on improving child's health by facilitating them with reminder and other medical details. Since children's health is taken care by their guardians, our app reminds them to feed medicines to their children in between their hectic schedule. Moreover, it also furnishes clients with a suitable way of keeping the path of pill count. The additional feature that creates a private group among the community who share common illness can also assist users to learn more about the disorder and treat it accordingly. The application is designed with a user-friendly interface and will be unified with medical centers and clinics' to

automatically store patient records in the database. During emergencies, users can also video call doctors and seek help virtually through our application.

#### **Features & Functions**

#### 1. Secured Authorization:



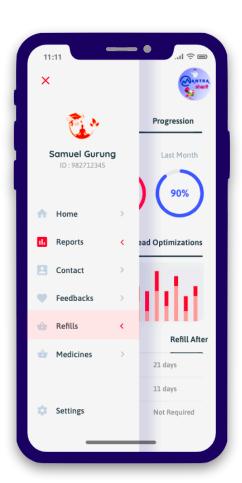
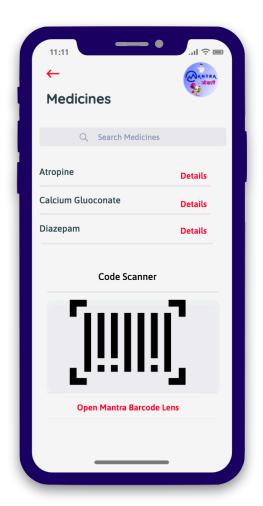


Figure: Security feature in application

One of the prime objective of our application will be to keep our user's data protected from any sort of online threats. To facilitate users with this service, our application will ask for prescription ID as credential so that only authorized users can access the system. Once a user is approved, he/she can set a 4 digit pin, that will make login easier and quicker. To maintain maximum security, users will also be able to let system know if their prescription ID is stolen or misplaced.

#### 2. Medication Details:

This feature will allow users to search obtainable medicines and get detailed information about them. To make things easier, there will be a in-built scanner, that detects medicines from the QR/barcode present on bottles. Users can do research on medicines that their children will be fed. Furthermore, parents can consult doctors through the app in case of any dilemma.



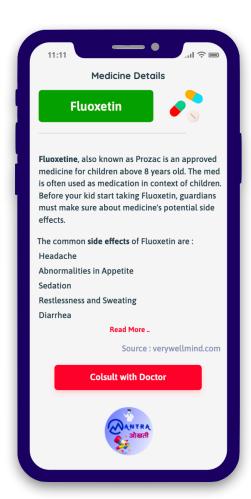
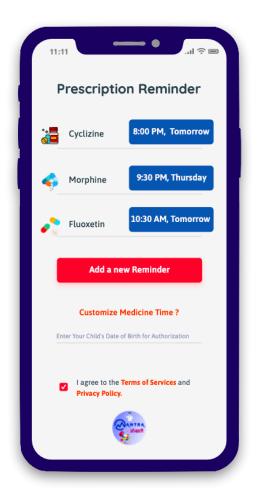


Figure : Medicine information in application

### 3. Prescription Reminder and Progress Report:

The 'prescription reminder' will set a prompt that reminds guardians (application users) about the medicine time. This feature can be lifesaving to thousands of daily prescription children, who are victimized with chronic diseases such as congenital heart disease, attention-deficit, etc.



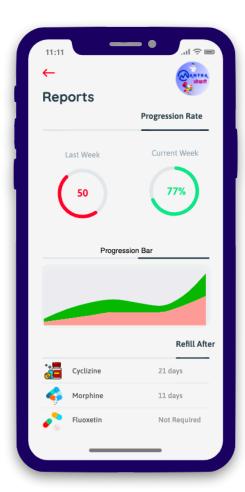


Figure: Prescription reminder and progress report features

As our application will be integrated to health institutions, children's health will be analyzed virtually and weekly reports will be provided accordingly. The application will notify users about medicine quantity and whether they need more refills.

#### 4. Medical Institutions and Communities

With this feature, users can search their prioritized hospitals and receive details about services. With mutual acceptance from both parties, members on the application can also communicate with doctors via video calls. This feature will help users to find nearest clinics or hospitals that will be advantageous during emergencies.

What's more is, there is also a community group created among the users facing same illness. It allows people to get assistance from experienced people which might be effectual in taking care of children. Users will be allowed to share reviews of hospitals services that will help people choose the best alternatives.

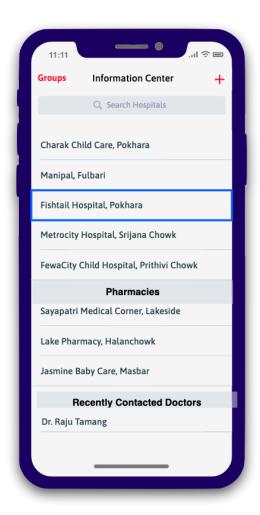


Figure : Hospitals and community discussion features

## **Technologies**

Observing at technical points, we will use Object Oriented Java for interface design. With OOPs concepts in Java programming language, productive user friendly interface can be designed. Google sheets will be used as a spreadsheet software while MySQL will be providing database

management service. Similarly, there will be usage of 'Python P.L.' for the succession of machine learning and virtual communication while 'Amazon Web Service' will be used for backup cloud storage.

### **Information Structure:**

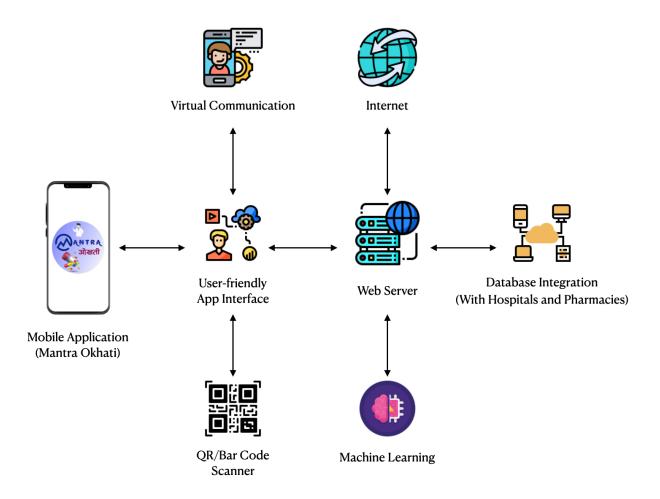


Figure: Information Structure of Application

## 5. Market Identification

### Target Market:

Our inceptive target market will incorporate children who are victimized with chronic diseases. Along with them, we will also be considering hospitals and medical institutions who primarily focus on children suffering chronic illness.

#### **Market Size:**

According to Nepal DHS (Demographic and Health Survey) 2016, about 7.6% of children suffer from diarrhea, 2.4% from ARI and 21.2% get affected with fever annually because of carelessness in health treatment (Singh et al., 2019). On the other hand, UNICEF in 2020 mentioned that about 23,000 children could be in trouble from pneumonia due to lack of vaccines and antibiotics. Aiming every child in Pokhara to get necessary medical assistance, the projected market size is around 25,000 users initially.

### Marketing and Sales

#### **Marketing**

Despite having four main areas to focus for marketing (i.e, Price, Place, Product and Promotion), our product can be considered as a platform itself. Therefore, the market plan will primarily focus mainly on other three areas (CRAWFORD, 1984).

#### 1. Price:

Application users will be provided with 45 days of trial period. Once the trial period ends, the cost of one subscription will be Rs.150 per month. Moreover, there will also be semi-annual and annual subscription packages at Rs.800 and Rs.1500 respectively. The application will accept cash as well as online payments via Esewa and Khalti.

#### 2. Place:

Our application will be available for free on Google Play Store for Android users and on App Store for (Apple/iOS users). Users having complications on those two places can also access our application through website (GÜREL, 2017). Furthermore, we will also be available on social media platforms such as Facebook, Twitter and Instagram.

#### 3. Promotion:

The promotion planning of our application relies on several distinctive medias. Our main target will be to generate partnerships and gain mutual understanding with hospitals and clinics in and around the city. The second way will be 'Word-of-Mouth' (WOM), where our facilities will be demonstrated in our users' conversation (HAYES, 2021). The '45-days free of charge subscription' will also be one of our promotion plan.

#### **Sales**

As of sales, the leading plan is to create a user friendly, functional application that will motivate users to choose us among all available platforms. We will also build a long term relationship with hospitals and add up honesty awards for users who will use application in a genuine way.

## 6. Idea Evaluation

## **SWOT Analysis**

### **Strengths**

• Project development around motivated individuals

The whole team, leaded by the company CEO Mr. Krishna Gurung comprise of visionary and inspiring individuals who will give all for project to end up at the highest level.

• Support of Provincial Health Emergency Operation Center (PHEOC), Gandaki

PHEOC of Gandaki province is contributing in our platform with trading and developmental strengths. They will aware majority of medical institutions about our application and why they should choose us over anyone else.

#### Weaknesses

#### • Connection Issues

Pokhara, despite being one of the major city of the country still faces multiple issues regarding network and other communications modes. Since the application requires swift internet connection to function, it might create inconvenience.

#### • Language Barriers

The 'Mantra Okhati' application will support two languages: English and Nepali. Nepal, being a multi-lingual nation includes people who speak over 120 languages. While majority of population can clearly understand Nepali, there are also people who can only understand the language of their culture.

### **Opportunities**

#### • Business Enhancement

Creating partnership with medical institutions and getting backed by provincial health center, there will be a larger business opportunities in upcoming future. We will have a golden chance to expand our services within the health sectors all over the country or even globally.

#### • Introduction of Premium Amenities

Our market research uncovered that a lot parents want doctors, nurses or physicians to visit their child rather going to hospitals, especially during this COVID-19 pandemic. So one of the opportunities will be to introduce a new home visit service, which we believe will help in growing our market size in future.

#### **Threats**

#### • Inconvenience from health institutions

The ample threat for 'Mantra Okhati' arises from hospitals and other medical institutions. We might not be able to provide them with actual solution they are searching for. Or, they might even decide to create their own version of application rather than integrating with ours.

## **Cost-benefit Analysis**

### **Crucial Suppositions**

• 25,000 regular drug using children

The initial goal is to reach up to 20% of total assumed users(i.e, 5,000) within first two years, directly through the application. With monthly and annual subscription costing Rs.150 and Rs.1500 respectively, the aim is:

2500 \* Rs.150 (buying regular sub) and 2500 \* Rs.1,500 (buying annual sub), the total ie expected to be : (375,000 + 3,750,000) \* 2 years = **NPR 4,125,000** 

#### • About 800 hospitals and pharmacies

Among all these medical institutions providing health facilities within the valley, the goal is to integrate about 50% of total health centers (i.e, 400), within first two years. Assuming 3 users per day in average from each institution, it will be 1,095 users annually making it 2,190 users in first two years.

$$(2190*150) + (2190*Rs.1,500) = (328,50 + 328,500) = NPR 3,613,500$$

If our goals are achieved, we can receive a revenue of about Rs.7,738,500 after 2 years.

## Revenue by Year:

# Revenue by Year

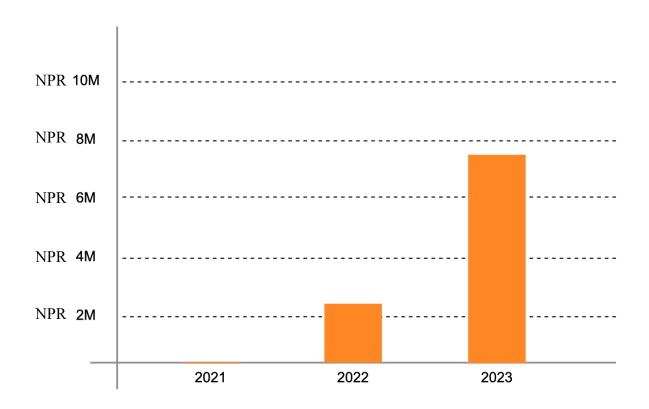


Figure: Revenue by Fiscal Year (2021-2023)

## Financing

In financing department, we have done calculations dividing the funds into two sections : fixed charges and variable charges.

### **Fixed Charges:**

• Legal and Authorization cost: NPR 200,000

• Graphics and logo scheming: NPR 75,000

## **Variable Charges:**

• Promotion and Marketing cost: NPR 16,000 per month = 192,000 per year

• Developmental costs: NPR 85,000 per month = 425,000 for 5 months of completion (assumed)

## **Sources of finance:**

• Originator Investment : NPR 500,000

• Sponsors and Partnership: NPR 250,000

#### **Statements**

## **Projected Costs and Benefits**

	Fiscal Year 2021	Fiscal Year 2022	Fiscal Year 2023
Revenue	NPR 0	2,413,997	7,738,500
<b>Direct Costs</b>	NPR 312,723	1,244,723	1,415,900
Gross Margin	NPR 312,723	NPR 1,169,274	NPR 6,322,600
Gross Margin (%)		48%	82%
<b>Operating Costs</b>			
Business Renew	NPR 30,000	NPR 30,000	NPR 30,000
Employee Wages	NPR 40,000	NPR 65,000	NPR 90,000
Cloud Back-up Services	NPR 15,000	NPR 20,000	NPR 30,000
Market and Promotion	NPR 16000	NPR 10,000	NPR 10,000
Total Operating Costs	NPR 101,000	NPR 125,000	NPR 160,000

# Net Profit / Loss by Year

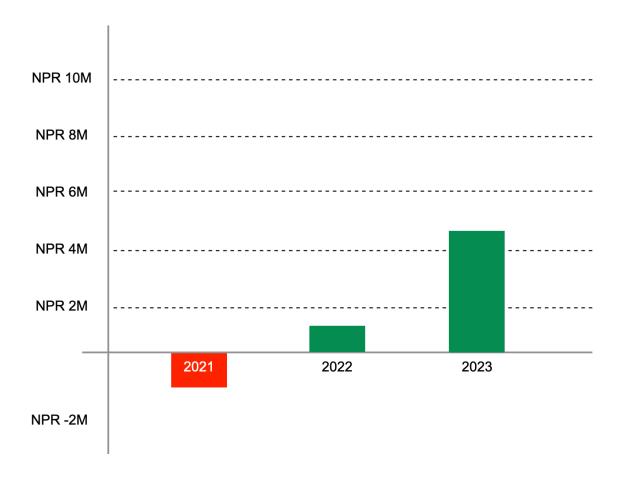


Figure: Bar chart demonstrating profit/loss by year

## Nabin Chhetri (NPI000032)

## 3. Competitor Analysis

A competitor analysis is a plan of action for recognizing and research about products, marketing plan, and sales of opponent product which exists in same market. After analyzing the opponent strategies about marketing, you can able to create a solid strategy for your business which assists you to competes with other business brands. This analysis provides details information about competitor way of working for their business. By this, you can recognize potential chances where you can compete with other products. First, there is so much difficult to compete with other competitors but not impossible. You can recognize your potential strength and work on it for providing better facilities rather than provide facilities by other. Throughout this analysis, you will able get information about the strength and weakness of your competitor on which you can work for providing best service.

Likewise, we decided to develop mobile application which is related to health care of children. Our application provides facilities through online. By this, family does not need to visit hospital, they can get their health services for their children through online. As we all know, meanwhile, we all people get challenge against COVID – 19 in which we did not visit any places physically. For this, our team planned for providing service to those people who want to visit hospital for their or themselves. There are lots of competitors are available in the market who can competes with us for our dream project 'Mantra Okhati'. So, amongst them, any two competitor's application are described below briefly:

#### • Health is wealth:

Health is wealth is best online health services facilitated for each and every people in our country. This company was launched in 2009 and still this company provide the facilities

to the public. Now, this company provides more services with easy way. Majority of people can use this application. The main headquarter of this company is situated in new Baneshwor, Kathmandu. Facilities that this company provides to the public like, list of doctor's contact numbers, service of nurses, medical delivery at home, available vaccine of different virus as well COVID – 19. Moreover, people can book their bed if their appointed doctor suggest them to hospitalize. People can book for available schedule of doctors. Recent time, they provide their services through "healthylife.com". For their achievement in their business, they got some wards from Nepal health associated with community, best website for health care 2015 ward from Pokhara health ministry and so on.

#### • GTECH:

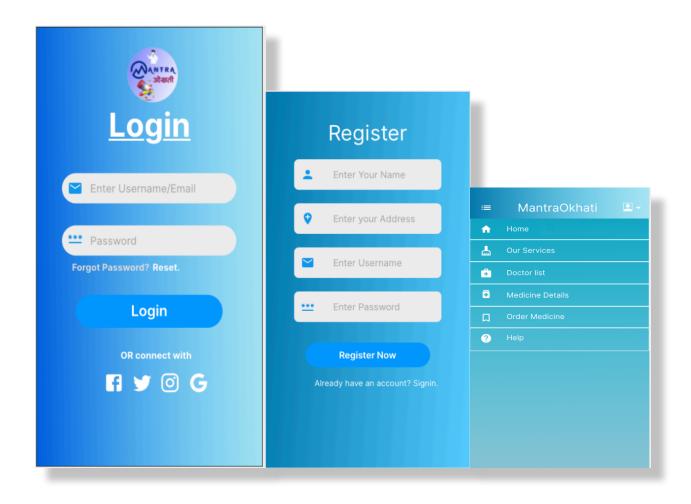
GTECH is one of the renown leading company in Pokhara while provide facilities through mobile. The founder of this company is Dr. Saujan Baskota in 2007. They provided their services through different branches but their main branch located at Mahendrapool, Pokhara. This company works on various web based system, application of mobile and games with more features. For this kind of services, GTECH company is working on application to provide service in whole Pokhara valley as well as some part of Nepal through "Onlinecheck" application. So, our team fully analyzing this company to compete as a competitor. Moreover, this company also awarded as various awards through different organization as well Nepal Health Organization for providing best services through online.

Now, the comparison between two these competitors are mentioned in tables:

Name of company	GTECH	Health is wealth
<b>Product Name</b>	Onlinecheck	<u>healthylife.com</u>
Uniqueness of company	<ul> <li>Patient can book bed if their appointed doctor suggests them to hospitalize and also can book available schedule of doctor.</li> <li>Nurse facility as well as almost all minor facility provided in hospital are providing in home through this application</li> </ul>	<ul> <li>Available vaccines are provided to the patient who filled the form for requesting vaccine.</li> <li>Some tips and steps are demonstrated for public to become healthy during pandemic time.</li> </ul>
Limitation of company	<ul> <li>It requires some amount of cost in order to download this application</li> <li>It require internet connection for using this application</li> </ul>	<ul> <li>It requires internet service for using this website.</li> <li>Sometime, people might not book their private doctor due to hectic schedule.</li> </ul>
Technology	- Database System	- Database System

# 4. Product Description

Our 'Mantra Okhati' application will develop as a mobile based application in order to facilities the patient during pandemic time. According to the survey of WHO, they predict that the pandemic might last for at least 4-5 years.



In this case, people feel fear to visit any places and mostly to visit hospital. In this scenario, majority of people should visit hospital for mirror injury, but by the help of Mantra Okhati, each and every people can gain services at home which provided in hospital. In order to providing this kind of services, our team are planning to develop this application in which child health care should be priorities must.

In this 21<sup>st</sup> century, most of the people depends on smart technology. In this way, we are planning to develop the application which provide the information about the first aid regarding medical. Our application will be available in both android and IOS in order to help public for recognizing our application.

#### **Features:**

Firstly, there are lots of available application on internet. But, only least number of people download this kind of application because still there so many people who cannot know about how to use it due to illiterate. Following features are available in our application which helps people to recognize our application:

- 1. Different languages are available in order to understand in easy way.
- 2. Online payment.
- 3. Information about various disease and their symptoms and prevention.
- 4. Details about the doctors with their contact number and images.
- 5. Book the appointment of available doctor.
- 6. Symptoms and prescription are shown through video by related doctors.

### **Function:**

Above features works through their own functionality which are mentioned below:

- 1. Virtual meeting should be conducted between doctors and clients through video conferencing or text messages.
- 2. Available doctors and their schedule for taking appointment.
- 3. Prescription report with full details of disease can show throughout the meeting and can upload it in private text box.
- 4. Payment of medicine and fee of doctors can pay through PayPal, esewa, and fonepay.
- 5. People can get full details information about the medicine if they already have as first aid or need to order from pharmacy through this application.

## **Technology:**

#### 1. Database:

Mango DB will be applied in order to handle large volume of data with high level of speed. This kind data need to store unstructured, semi – structured and structured data in this application, so, Mango DB which is non – relational database is executed.

### 2. Programming language:

This application should work in both Appstore and Google play in which C++ like programming languages should be important in order to develop this application.

## 5. Market Identification:

### 1. Package:

In this application, premium and free are the packages available. Both packages are come with different features. Free package has least features like medicine information, doctor's bio – data, and details about diseases. Whereas, in case of premium packages, they can gain all the services they want from this application. Features like, booking appointment and bed while hospitalize, prescription, checkup, and extra feature provided by doctor.

## 2. Pricing:

This application will be available for free of cost in both Appstore and Google play. There is no any cost need for download it. However, people should pay money for using above mentioned features available in this application after subscription. In this application, people have subscription choice as monthly, six months and yearly. In this case people have \$1,99 premium package for monthly. Likewise, \$9.99 for six months and \$17.99 for yearly premium packages. The cost for monthly and six monthly premium packages is higher in contrast with yearly packages.

#### 3. Place:

First of all, we decided that we start to promote our application only in Kaski district. All the hospital, pharmacy, and doctors available in kaski district will use and connect this application. After, analyzing download rate, we will future proceed to promote this application in all the countries.

#### 4. Promotion:

The reason behind that any company get succeed from their product is how they represent themselves in the competition market and also depends on their advertisements. If the company's advertisement does not attract public, then it might indicate the failure on company's product. This leads that company might get loss on business. There so many strategies that should be implement for this application in order to gain success in it. Strategies like, as we all know that, majority of people are more interact on mobile phone. That why, the companies should focus about advertisement in the mobile through social media like Facebook, You Tube and Instagram. In order to advertise more about the application, they have to provide at least two weeks free of trail. In this way, people will may know well about the importance of the application.

## 6. Idea Evaluation:

Idea evaluation is process of recognizing essential subject or project with strongest leverage which made through evaluating important aspect of project's ideas and its innovation. There are so many companies which get loss on their business due to lack of idea evaluation. Not only generating creative idea is enough for project, a review of choose innovative is equally importance. As we know, there are so many idea evaluation techniques available but we have chosen any two amongst them which assists us to generate idea. The two techniques are shortly described below:

# I. SWOT Analysis:

SWOT analysis is one of the widely used technique for idea evaluation. This analysis provides us about strengths, weaknesses, opportunities, and threats of the potential solution which are mentioned below:

Strengths	<ul> <li>Download cost for this application is free and provide two weeks' free trails.</li> <li>Details information about disease, symptoms and prevention measures.</li> <li>Contact number of doctors are available.</li> </ul>
Weaknesses	<ul> <li>in case of serious accident or injury, people have to hospitalize according to doctor suggestion.</li> <li>There might be chance of getting error on symptoms checks and recognize wrong disease.</li> <li>Some people cannot know about how to use smartphones.</li> </ul>
Opportunities	<ul> <li>This application might help to get inspiration by youth in order to develop next best creative technology.</li> <li>Due to increase rate of using smartphone and adaption new technology day by day, which indicates that this application will identify by more people.</li> </ul>
Threats	<ul> <li>Each and every people might get confuse on package. They might have confusion on get package or not.</li> <li>Middle class family might feel offended due to high premium packages.</li> </ul>

## II. Cost Benefit analysis:

This is also widely used idea evaluation technique. This technique used to analysis the total sum of costs to identify the success of idea. Cost benefit analysis will help to find out whether the product will be profitable or not and helps to find out that this application comes under the decided budget or not. If the decided budget fulfill all the requirement need for development of the application, then we can further proceed to develop the application.

Before we begin, we have analyzed the requirements and their needed cost in order to develop the application. Likewise, some amount of cost required during promotion in which public can use their premium packages. For instance, our estimated cost for development of the application will be 1.5 million dollars. If at least 1 million people in the globe use this application as yearly package, then our total income will reach over 20 million dollars, which will be huge benefits for our application. So, this application is deserving to develop.

## (Suraj Pandey) - NPI000051

## 3. Competitor analysis:

Competitors are the organisation or a person who is involved in providing either same or similar facilities and goods to the customers. Competitors might be exists currently or may evolve in future who might compete with us in our market. So, to remain in competition is very difficult but not impossible. For that we need to provide better facilities to the customer then existing competitors and also the facilities which might be provided by the competitor who evolve in future. So, during competitor analysis we need to identify the competitors available on the market and gather informations and analyse the strength and weaknesses.

We are planning to develop an application to provide online healthcare services for children so that they need not to visit hospital physically in this covid-19 pandemic for regular check up or small injuries or sudden illness. So, any two competitors who are available in the market and who are providing similar facilities that we are planning to provide through our 'Mantra Okhati' application are briefly described below:

#### 1. Health At Home:

Health At Home is the heath service provider who provides quality health services to the people at their home. It is the web-based health service provider. This company was established in 2007 and is providing this facilities since 13 years(HeatAtHome.com,2021). The headquarter of this company is located at old Baneshwor, Kathmandu. They are providing the facilities like doctor on call, nursing care, vaccinations, medicine delivery at home along with the counselling and appointment booking through phone calls. This company is also the winner of Surya Nepal Asha Social Entrepreneurship Award and Best Poster Community Development award in 2012 and 2014, respectively.

#### 2. InfoTech:

InfoTech is one of the leading company in Pokhara which was founded by two brothers Shyam and Talak in 2005. The head office of this company is located at Siddhartha chowk, Pokhara. This company focuses on developing various web based system, games and mobile applications. Beside this, InfoTech is actively working on providing health related facility like Telehealth, online appointment booking service to the people around Pokhara valley through an application called 'virtualCare'. So, we have considered this company as direct competitor to our product. This company is also the winner of various award, awarded by Nepal Health Department recognising their good service towards health sector.

The comparison between the product of this two competitors is:

Company Name	InfoTech	Health at Home
Product Name	virtualCare	HealthAtHome.com
Uniqueness	<ul> <li>Support long distance clinic health care services through tele-health and nursing care facility at home is also available.</li> <li>Patient can book appointment through online.</li> </ul>	- Provide home vaccination service to the patients.
Limitations	<ul> <li>This Application is available only on android but not available on the device who operates under IOS.</li> <li>Internet connection is necessary for the use of this application.</li> <li>Smart phone is necessary but all people are not able to use smart phone.</li> </ul>	<ul> <li>Internet connection is necessary for the use of this website.</li> <li>Video conference is not available only message chat is available.</li> </ul>

<ul> <li>Database system</li> <li>Programming language used i java</li> </ul>	<ul> <li>Database system</li> <li>Programming language used are Html, CSS, javascript, php.</li> </ul>
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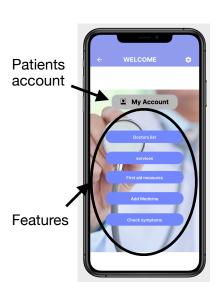
# 4. Product description:



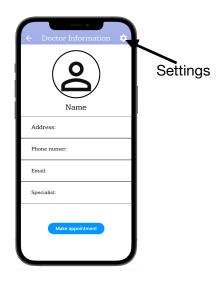




Register Form



Features



Doctor's profile



Add medicine for reminder

'Mantra Okhati' application is mobile based application which will be focused on paediatric care. To use this application people need to login. They can login either through social media accounts or need to register into the system. People need to visit the doctor list and select the doctor to book an appointment. Online payment system is available to pay fees of doctor. This application is available in both android and IOS.

#### **Features:**

The features that our application will include are:

- 1. The current situation is not good enough to visit doctors physically, so video conferencing and telemedicine service will be included in this application.
- 2. Patient could be able to view and edit their profile and view doctors information.
- 3. ePrescription service is will be available.
- 4. Search box feature for patients.
- 5. Book and view appointments
- 6. Reminder feature
- 7. Symptom checker
- 8. Online Payment

## **Functions:**

Each features listed above have their own functionality which are mentioned below:

- 1. The video conferencing and telemedicine service helps parents to counsel with doctors virtually either through video conference or through text message without taking their child to the hospital.
- 2. ePrescription features helps parents to collect prescription details from doctor and even order it through online from nearby local pharmacy if they have the problem of mobility.
- 3. Patient's guardian can pay bills of medicine and fees of doctor through eSewa, fone pay or credit card through the online payment feature mentioned in the application.

- 4. Patients can select the doctor from the list and book an appointment and view previously booked appointment details as well.
- 5. Reminder feature reminds us through notification when it is time to take and refill medication.
- 6. For first aid measures, evaluating symptoms seen on child, parents can simply go through this app and view the notes prepared by paediatricians and experts regarding the measures of the symptoms as well as medicines details.

# **Technology:**

The technology that are used for the development of this Application are

#### 1. Database:

Since, large volumes of data need to be handled in high speed and need to store unstructured, semi-structured and structured data in this application, non- relational database called MangoDB will be implemented.

## 2. Programming Language:

For the development of the mobile application selection of appropriate programming language is important. Since, this application must be made available both in Appstore and Google play the language that we have chosen is C++.

# 5. Market Identification

#### 1. Package

There are two types package available in this application that is free and premium package. Free package allows only limited number of features such as view profile and doctors list, set medication reminder manually, view first aid measures prepared by paediatrician experts to use by the people where as premium package allows people to use pro feature such as symptom

checker, video conferencing, Appointment booking, payment, ePrescription, automatic medication and refill reminder according to the prescription provided by the doctor.

### 2. Pricing

This application will be made available in App Store and Google play free of cost. People need not to pay money for the utilisation of this application. But as mentioned above for the use of all features customer need to do subscription. There are three types of subscription that is monthly, every six months and yearly. The cost of the monthly premium package is \$1.99 while 6 month subscription cost is \$9.99 while yearly subscription package is \$17.99. Cost of monthly and every 6 months subscription package is slightly higher in comparison to yearly subscription.

#### 3. Place

In the beginning, this application is target to be released only on Pokhara valley. The hospital, pharmacy and doctors within Pokhara valley will be connected to this application. After recognising the download rate, we will further proceed to release it all over the country.

#### 4. Promotion

The success of the product depends upon how we have promoted the product. Even the product is good but we lack the advertising techniques then there's the greater chance of failure of our product which leads company towards loss. So, keeping this things in mind, we have listed certain strategies for the promotion of 'Mantra Okhati' application. Some of the strategies that we are planing to implement for the promotion of our product are:

- Since, most of the people are engaged on social media, we could advertise this application through social media like Facebook, instagram and YouTube.
- O We could do visual advertisement in-front of malls in city area where there are maximum number of people so that they can visually experience and understand about its features and the benefit of using this application.
- One month free trial service will be provided to the people so that people can experience the paid features free of cost.

# Comparison of our product with competitors product described in competitor analysis part.

After analysing the features that will be included in our application and the features that are available on related product of competitor we came to conclusion that our application is going to be recognised more by the people than this two product because our application contains all the features present tin both app along with additional feature. So, people would like to use single product rather than using two different product for same features along with extra features.

# 6. Idea Evaluation

Idea evaluation is the most important factor both for successful idea management and innovation management. There are many such companies who are unable to progress due to lack of idea evaluation technique. Some can reject innovative idea over less innovative ones (Jeffrey Baumgartner, 2008). So, generating creative idea is not enough but reviewing selecting innovative one is also important one. So, the idea evaluation is done on the basis of answers provide to us during survey. There are various idea evaluating techniques among them we have chosen two techniques which helps us to choose right idea generated above. The techniques are described below:

- I. SWOT analysis
- II. Cost Benefit analysis

# **SWOT** analysis

This is one of the most used idea evaluation technique. It is the framework of identifying strength, weakness, opportunity and threat of generated idea. The strength, weakness, opportunity and threat of purposed solution are as follows:

Strength	<ul> <li>It is free to download and even one month free trial is available.</li> <li>Service is available 24/7.</li> <li>Data security is more due to the use of DBMS in our application to store data of doctor, hospital, pharmacies and patient as sensitive information need to be store.</li> <li>This application is available on both android and IOS devices. (Q.No. 10)</li> <li>It is easy to use due to the simple interface design.(Q.No.10)</li> </ul>
Weakness	<ul> <li>People need to visit hospital for serious injury or illness, they cannot cured through this application.</li> <li>Symptom checker sometime may not be accurate and may not identify correct diseases.</li> <li>This app needs internet connection for the use, so there may not be internet connection all the time.</li> <li>All people may not have smartphones. (Q.no. 8)</li> </ul>
Opportunity	<ul> <li>Use of mobile phone and adaptation of new technology by people is increasing day by day so more and more people may recognise this app in near future.</li> <li>This application may be useful for people of all group in future.</li> </ul>
Threat	<ul> <li>People may get offended due to the premium package.</li> <li>Cost may rise due to additional feature that are unique in this application.</li> <li>Individual may not ready to pay extra for additional features.</li> </ul>

# **Discussion:**

After analysing the SWOT table above there are still some weakness in our application so, we need to still work on it to convert those weaknesses into strength so that even more people than estimated can recognise our app and we remain in this competitive market for the lower period of

time. Similarly, we need to upgrade our application time to time with the innovation of new technology so that our product remain in top in market for longer period of time.

# **Cost Benefit Analysis**

Cost Benefit Analysis is one of the most commonly used idea evaluating technique. Cost benefit analysis is the process of comparing the estimated cost and total expected financial benefit. Although it sounds similar to the feasibility study but there is vast difference. This analysis helps us to determine whether this application is worth enough to develop or not. If the financial benefit is more than thank total expected cost then we can proceed towards the development of our application.

At the beginning, we need to identify the total cost required for the development of our application. Since, various features will be available in this app, the production fee is also obviously more due to more effort and manpower required. Similarly, the cost is also added during promotion we we need to do paid promotion.

Let us supposed that our development cost will be about 1 million dollar. Among 7 billion population if only 1 million people recognise our app and use it with annual subscription then our total income will be 18 million dollar in a year. Hence, this is the huge profit that our app can provide us. Hence, this application is worth-full to develop.

# (Sandesh Giri) - NPI000041

# 3. Competitor Analysis:

#### Children Health Care:

Children Health Care is a company which was established in early 1990 with the aim of making better life of children. Its main headquarter is situated at North Texas, U.S.A and branches in different places of Nepal ("Mobile App", 2021). The startup of company was founded by May Froster Smith as a part of Dallas Baby Camp. This company is chosen as competitor because the technologies they used the same as those used in proposed solution.

This company gives services of full-service hospital and family-centered care team. The application ideas are mostly based on real-world neurological research. At present times, this company has more than 15 features for health care of children. Their main targets are children below 7 years old and their parents.

#### **Enuma Tech.:**

Enuma tech also known as LocoMotive Labs is a company which was established by Sooinn Lee and Gunho Lee which creates health based service for children specially. The company has its branches office at Nepal besides its main headquarters at Berkeley ("enuma", 2021). This company is chosen as competitors because they used the same technologies as proposed solution.

The team of this company collaborates with speech-language pathologist, special teacher of the children and other educators. Enuma mainly focus on providing healthy life content for children with exceptional needs and limited access to resources. Todo Online Medicine Service is their main products. They can be easily downloaded through Play Store and App store.

	Children Health Care	Enuma Tech
i. Product Name	Children Health Application	Todo Online Medical Service
ii. Uniqueness	HCR award from US Department 2014 and 2015 and also the finalist of Verizon's Powerful Health Application Award ("Mobile App", 2021).  - User can pay their bill online and	- Also provide information of doctors' specialist and hospital where
ii. Limitation	available in Health Application so	- A limitation in Todo Online Medical Service is that the application can be downloaded from Play Store but not from App Store.

iii. Technology	- Community: This application also	o - This application uses the database	
	contains a forum where user can	system to keep the information of	
	share their advice related to their	medicine, doctors and hospitals.	
	children healthy life.		

# **Objective Statement:**

Covid-19 cases are increasing day by day in Nepal. Due to Covid-19, people and their children in Nepal are facing the difficult time to visit the hospital. People have to go to the hospital only to book their appointment for doctor and pay their bill. It has become one of the most serious problems in Nepal. So, this problem or an issue needs to be somehow overcome through the application. Therefore, Mantra Tech introduces a creative and innovative application called Mantra Okhati especially for the online consultancy of doctor to the patient children. The main aim of this idea is to reduce a line at hospital for appointment and consultancy of doctor. Moreover, this application should be able to provide the different tips of healthier life of children given by different user. Thus, an application should be implemented with huge data technologies to collect data from children, doctors and hospitals. Similarly, the technologies and techniques used in the application's development and implementation should be currently available.

# 4. Product Description

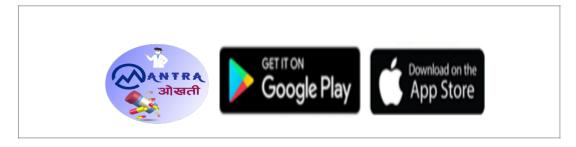


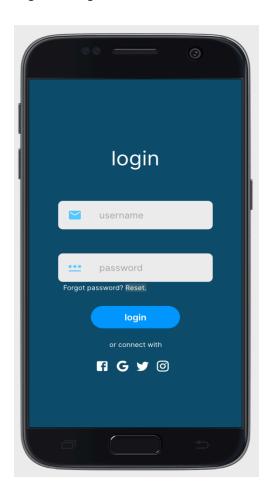
Fig: Mantra Okhati Application

Mantra Okhati Application is a mobile based application which mainly focuses on health care of children. This application also serves as a stepping stone to better lifestyle and it is primarily aimed at Nepali children between 3 to 7 years old. Nowadays, children use more smartphones, tablets and different device therefore they can use Mantra Okhati application to learn about importance of good health. This application will be made downloaded from both android and IOS device thus maximum number of people can use. Following are the features and functions of the product and the technologies used in development of product;

#### **Features**

There are many features which are included in our applications which are listed below:

Login and register service for user:



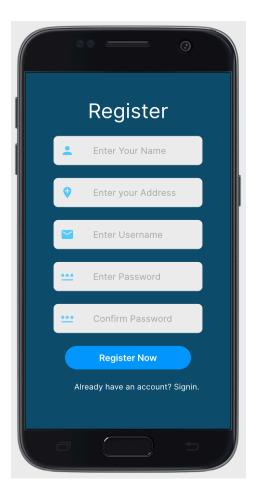


Fig: Interface of Login And Creating a Account for the user

- iv. Children mode
- v. Online medicine delivery service especially of children
- vi. Healthy Life Tips box
- vii. Online payment of bill and fees:



Fig: Interface of Online Payment

# viii. Map direction to recommended hospitals



Fig: Interface of Map direction

ix. Video conferencing to doctors if disease can be cured

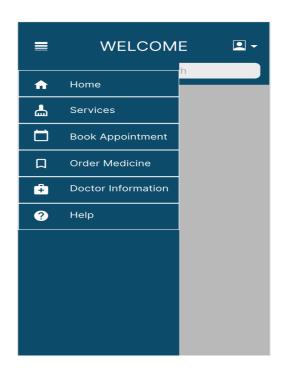


Fig: Interface of different services provided by application

- x. Book and view appointment for doctor
- xi. Checker of symptoms of disease for children

## **Functions:**

Every feature in the application has their own functions which are described below;

- i. Login and Register Service: Users who wants to use this application needs to create their account from their G-mail id, Facebook and twitter then login to it. They can also login through guest id but the one who have their own account may have more features to use.
- ii. Online Medicine Delivery service: The users who are in need of medicine but could not go to pharmacy for medicine can order their medicine which is recommended by doctors
- iii. Children Mode: Inside the application, there is children mode in which children can get general knowledge of healthier life through quiz and different other informative games.
- iv. Healthy tips box: In this box, parents can give tips how to care health of their children and every users of the application can see that tips and implement in their daily life.
- v. Map direction to recommended hospital: This application also have features of direction to the hospitals from the Google maps.

# vi. Online payment of bill:

Users can also pay their bill of medicine and different other fees through several online transactions like Credit card, E-Sewa, ImePay and through different other online payment service.

### vii. Video Conferencing to the doctors:

This application allows users to interact with free doctors if the disease can be cured through medicine only as recommended by doctors.

#### viii. Book and view appointment for doctors:

In this application, patients or user can book and view their appointment for doctors which will be the main features of the application. Similarly, they can also view previous booked appointment.

## ix. Checker of symptoms of children disease:

Parents cannot find out what kind of disease their children are suffering from. So, this features helps user to find out the disease by writing the symptoms of it and date when it started.

# **Technologies:**

The development of the Mantra Okhati Application entails the use of different technologies in order to comprise features and functionalities which are mentioned above. In order to build a user-friendly and robust mobile application, the right programming language

must be chosen. This application is made compatible for both Android and IOS users which is developed as cross platform mobile application. Similarly, it uses a single programming language allowing it to be used on all platforms. After reviewing the several programming language, C++ is chosen as the programming language for application since it is known for being fast and stable and it also facilitates the development of application for both Android and IOS (Kumar, 2020).

**Databases** are used to permit storage and retrieval of data in the application and for the case of Mantra Okhati, it allows users to view the information of doctors, hospitals and their own account (Van Wersch & Kelk, 2017). As said by Solanki (2017), CouchDB is a non-relational database that will be used in this application because it permits for continuous read and writes, allowing the developers to book and view appointment and user to choose from wider range of doctors and hospitals where they want. **Artificial Intelligence (AI)** is also used in this application for chat-bot. Natural Language Processing (NLP) and Machine Learning (ML) is combined in an AI. Users may now seek advice or instruction without having to wait for assistance person to become available as the chatbot is always available.

# 5. Market Identification:

The process of identifying and targeting a group of potential users for inclusion in the marketing mix is known as market identification (Lake, 2021). Marketing mix consist of four p's – package, price, place and promotion which are described below;

# **Package**

This application is available on two package which is free and premium package. Free package permits user for limited features such as viewing profile and list of doctors and hospitals, children mode, view different health tips suggested by the users and premium package permits users to use almost all features like symptoms checker, online payment and book appointment for the doctors to visit them.

## **Price**

In the initial downloading from play store and app store, people do not need to pay the money for it. However, as previously stated, for the usage of all subscriptions is required for certain features. Monthly and yearly subscriptions are two types of subscription for the user. The price of monthly subscription package is \$2 while yearly subscription is \$20.

## **Place**

In the initial phase, this application is intended to be launched just in the Pokhara valley. This application will be connected to the hospitals, doctors and people of Pokhara valley. If the download rate increases, we will release it all over the nation.

## **Promotion**

Promotion is a group of activities which includes public relation with people, advertisement and sales promotion. The main aim of promotion is to grown an application brand and permit the application to reach to large audience. We can advertise application from different Social Medias like Facebook, Instagram, and YouTube. One month of free trial service will be provided to users. We also plan to advertise an application in hospital mainly where there are maximum numbers of patients.

# 6. Idea Evaluation

Many of the company are unable to progress due to lack of idea evaluation techniques. So, idea evaluation is the most important aspect in good idea and innovation management. I have described 2 of the idea evaluating techniques or analysis below;

# **SWOT** analysis

Strength	Weakness
- The mobile's application user interface is	- This application does not support multi-
made interactive and user-friendly with	language. [R5,R7]
features such as chatbot that answers any	
question the user may have. [R1,R3]	
- The application has partnered with different	- Injury cannot be cured through the
hospitals of the city which save the time of	application i.e. children needs to visit hospital
patients and also medicine delivery functions.	physically for injury. [R1,R10,R9]
[R5,R8]	
- Children mode in an application may attract	- Smartphone with internet connection is
the children to use this application.[R10]	required to operate this application. [R6, R8]
- Free to download and at least 1 months free	- Symptoms checker of the disease may not
trial function. [R7, R9]	find the exact disease where different disease
- Service of application is available for 24	may have similar symptoms. [R2, R4]
hours a day. [R2]	
- Users are able to view their data and book	
appointment for doctors. [R4]	

Opportunities	Threats
- People will be remaining at home because of	- People may not be willing to pay extra
lockdown due to COVID-19 pandemic which	money for more features. [R1,R10,R6]
improves the application's ability to motivate	
people to use health related service online.	
[R2,R4]	
- It is feasible to co-operate with government to	- Premium package of the application can
make this application available in hospitals so	offend people. [R3]
that many children and people can use and take	
benefit from it. [R7]	
- Children are adapting new technology and	- Different type of paid Ads when using the
using smart phones for education so the app	application can upsets the user. [R9,R8]
will be recognized in the near future. [R1,R5]	

#### **Decision**:

The SWOT analysis is the first technique used to determine whether or not to pursue the given proposal. According to the results reported in the analysis above, the user's friendly interface is one of the strength of proposed idea. As for weakness of proposed application, several technical difficulties have been overlooked such as lack of multi-language support which was pointed out by respondents. The limitation of an application can be addressed by taking the suggestions into consideration made by respondents of the survey. To summarize the findings of SWOT analysis, the strength and opportunities outweigh the weakness and threats indicating that the idea can be pursued further.

# **Force Field Analysis:**

Force for Change		Force Against Change	
	Score		Score
- Incorporating a healthy life in	5	- Children may addict in the use of	3
children is necessary as it maintains		smartphones. [R1,R5]	
the health and well-being of the			
children.			
- There are not enough innovative	4	- Children may feel lazy to use the	4
products in the market that promote		application because they are more	
healthy life of children.		interested in games.[R2]	
- The targeted user may not know the	4	- Premium subscription may include	3
latest technology and prefer to go		high cost so all the features cannot be	
hospital physically for appointment		used by normal users. [R7,R10,R3]	
and pay the bills and fees.			
- When compared to others	4	- Multi-language is not supported so it	3
competitors, the proposed idea is more		might be difficult for people to	
relevant and reliable to target market.		understand. [R8]	
Total Score	17	Total Score	13
Total Score	17	Total Score	13

#### **Decision:**

The second technique is Force Field Analysis where it gives an overview of current forces that drive and oppose change. As it can be seen from above analysis table that the majority of forces are in the favor of proposed idea with 17 score whereas the force against the change with total 13 points. Thus, as the force for change is greater as compared to force against change, it indicates that the proposed idea can be pursued (Dowding & Jackson, 2021).

 END OF INDIVIDUAL SECTION	
END OF INDIVIDUAL SECTION	

# **Conclusion**

Given these points, inventiveness and innovatory vision is crucial for any business plan to triumph. This helps in constructing effectual problem solving expertise and also provide potent techniques to tackle incoming difficulties. Our company 'Mantra Tech' with thoughtful aim of discovering or promoting a business solution for child health through mobile application, believes in creative approaches crossing various stages from generating an idea to its evaluation. Once the evaluation is finalized, several alterations are performed to erase limitations and enhance solutions so that children can be facilitated with great health service.

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