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CLARDIA

Comprehensive Family Health Analytics

Business Proposal

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CONTENT

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1 EXECUTIVE SUMMARY

We welcome you to Clardia, our Comprehensive Family Health Assistant which could provide predictive health analytics to your entire family. Our team at Olivescript identified the need for a family focussed healthcare device which could be used with great convenience and thus look after your health. Through the surveys conducted it was evident that the users possess the need for such a device and that their knowledge on diseases and there symptoms were limited.

Clardia is a combination of hardware and software, where the user health paramters are obtained through the hardware device and analysed to predict a broad scope of diseases ranging from cardiovascular, respiratory and nutrition related diseases and even diabetes.

The product is based on an innovative concept where user health parameters are obtained via the sole of the user. The user is only required to stand on the compact Clardia hardware platform for a period of 20 seconds where all the parameters would be obtained for analysis. The user could thus visualize the analysis via the mobile and web applications or generate reports.

This unique user friendly solution can be used effectively to enhance the quality of the family and possess key technical, medical and business innovations in built to create great value.

CLARDIA

WHAT WE DID

We researched on methods to obtain a comprehensive set of health parameters of a user for disease detection. Obtaining such parameters from the human sole was identified as unique to develop a user friendly total design focussing on the entire family. We studied many existing world class researches and identified a unique method never tested before.

The hardware compoenent was developed in order to obtain the parameters. Sensors were placed on a designed platform which the user could stand on. Research was conducted for optimum sensor placement, and the device was optimized to cancel noise, motion artifacts and ambient light artifacts to ensure accurate readings.

The obtained parameters were used to develop algorithms for disease prediction. A study was carried out to identify diseases and their casues. Currently we are analyzing the data we obtained to develop effective algorithms for disease prevention.

THE CHALLENGE

- **Our surveys identified that a majority of the population do not have regular health checkups. By the time of detection some for some patients it could be too late.**
- **Most of the people do not have a sound knowledge on the early symptoms of a disease.**
- **Some health conditions and medical diagnosis requires constant monitoring of the user which is a challenge for normal households.**
- **The general public possess the need of detecting diseases early since prevention is better than cure.**
- **The lack of existence of a single device to monitor a comprehensive set of health parameters of the user.**
- **Non availability of a unique user friendly system for family health analysis and disease prediction.**

COMPREHENSIVE FAMILY HEALTH ANALYTICS

A web and mobile application was developed in order to visualize the meaningful information in an attractive method. The user possess the ability to analyze the data and generate reports for medical diagnosis. The system developed real time connectivity with the application and developed hardware.

OUR UNIQUE SELLING POINT .....

01 **Technical Innovation** - No one has ever applied the PPG technology to obatin health parameters from the human sole. (Research Paper Pending.)

02 **Business Innovation** - A single product for the entire family to analyze and keep track of health.

03 **Medical Innovation**- One device to detect a broad classification of diseases. (Respiratory, Cardiovascular). Disease prediction based on demographics & health parameters, visualization through app & report generation.

04 **User Friendly Application** - Non invasive, Non wearable, Just 20 seconds of usage, Automatic User identification, No user interference required.

2 CLARDIA INTRODUCTION

Clardia is a Comprehensive Family Health Assistant which would allow you to keep track of key health parameters of your family through a simple user friendly innovative design. Clardia comprises of a Hardware Platform and an Analytics component which focusses on identifying potential threats of diseases and thus provide predictive health analytics. The mobile and web applications visualize the analysis and key health parameters for the user, while the system also possess the ability to generate comprehensive summarized reports on user health.

HOW CLARDIA WORK

The user requires to stand on top of the developed Clardia hardware platform for a brief period of 20 seconds. Health parameters of the user is thus extracted from the device and communicated to the server via home wifi connection.

There is no fixed schedule for the use of Clardia. However the efficiency of predictions would enhance through increased usage. It is recommended that Clardia is used at least once or twice per week. The user can identify his/her health related analysis through the visualizations in the web or mobile application.

HOW CLARDIA WORK

Lets walk through the process of using Clardia.

CREATE USER ACCOUNTS

Dowload the Clardia mobile application or use the web application to create user accounts for the family members.

ONE TIME HARDWARE SETUP

Connect the Clarda Hardware platform with the home Wifi connection and setup the device.

USING THE CLARDIA PLATFORM

The user requires to stand on the device for a period of 20 seconds.

CLARDIA ANALYTICS

The obtained health parameters would be communicated real time to the servers and analytics carried out.

INFORMATION VISUALIZATION

Usage of the Web applicatoion or the Mobile application to visualize the analysis.

REPORT GENERATION

Generate a report containg the Medical history of the user and analysis upon user requirement.

CLARDIA HARDWARE PLATFORM

The Clardia Hardware platform is an innovative device which is developed to identify each family member and extract the user health parameters for the analysis. The user is required to stand on top of the developed platform for a brief period of 20 seconds where all the needed parameters would be obtained through the sole of the user. This is a novel innovative design where the developers have researched and experimented on existing technologies to developed a unique method of obtaining user health parameters by applying PPG technology on a human sole which has not been done elsewhere. The conducted experiments and research is published in the following sections.

BASIC HEALTH PARAMETERS OBTAINED

- Blood Oxygen Level
- PPG Signal of User
- Heart Rate
- Temperature
- Weight

CLARDIA HARDWARE - KEY FEATURES

- ✔ Automatic User Identification
- ✔ Minimum User Interference
- ✔ One Device for Everything
- ✔ Automatic On / Off

CLARDIA ANALYTICS COMPONENT

Clardia provides the ability to generate comprehensive reports for the user in order to aid the medical diagnosis process. However it is not advised to use the device as an alternative to a standard medical device. The physician examining the patient would have a much better understanding on the variation of the users health parameters through the report generated via Clardia. Clardia would also be useful at instances such as white coat hypertension where the readings of the desired health parameter is deviated due to the medical environment or nervousness of the user in the presence of a physician. Such situations could also be avoided through obtaining health paramteres using Clardia in a homely environment.

MEANINGFUL INFORMATION

Our disease prediction analytics is much more meaningful aiming at your demographics and lifestyle.

PRIVACY

Your privacy is our concern. The data will not be shared with any third party, and will always be secure with us.

SECURITY

Encryption and Security mechanisms to ensure the saftly of your data while storage and communication.

REPORT GENERATION

Obtain all your medical history and generate reports for medical dianosis.

WEB APP

Review your detailed health analysis for a healthy lifestyle.

MOBILE APP

Cross platform mobile applications to provide your health details at the touch of your fingertips.

CLARDIA MOBILE & WEB APPLICATION

The Clardia Mobile and Web application aims at visualizing your health parameters in a user friendly and convenient manner. The data presented would not be only the recorded numerical data which cannot be interpreted by general users. The information would be visualized in a meaningful manner, where the user can easily identify the percentage of risk associated with each disease. Hence the user can easily identify if he/she is prone to some disease. The applications also possess the ability to notify the user of critical risks related to a particular disease.

CLARDIA REPORT GENERATION

Clardia provides the ability to generate comprehensive reports for the user in order to aid the medical diagnosis process. However it is not advised to use the device as an alternative to a standard medical device. The physician examining the patient would have a much better understanding on the variation of the users health parameters through the report generated via Clardia.

3. RESEARCH & EXPERIMENTATION

INNOVATION

The Application of PPG technology for the sole of the user is a novel concept which has not been experimented before.

The technology related to Clardia has been developed based on the research and experimentation carried out by our team. The research findings are presented in this section and the research paper presented is currently pending for publication.

Clardia can be identified as a unique product which has embraced the latest technologies and researches around the globe.

RESEARCH & EXPERIMENTATION

Upon the identification of the user needs and challenges existing within the current society retlated to healthcare we identified that devices capable of catering these challenges would be a viable market solution. The initial brainsorming sessions were conducted in order to identify the most easiest possible area of the body to deploy our device. In order to identify the most suitable and convenient area we analized exhisting products and researches conducted.

Obtaining the required health parameters through the human sole was an innovative idea which was considered. The important reason for selection was the fact that it was the only method to obtain the users weight parameter which itself is a good indicator of possible diseases. Also through our research we identified that when a parameter such as weight is combined with other crucial health parameters much more meaningful predictions could be made realted to diseases. Thus the development commenced to design a device in built with sensors, which the user can stand on. It was identified that ECG is an important measure for extracting medical information from a patient. We identified that researches have been carried out to extract the ECG of a user through the sole. However it had its potential drawbacks and also the practicality in applying ECG to a commercial product had complications. Thus we focussed on researching on other technologies to obtain the similar parameters obtained by ECG.

The PPG technology was identified as a much more accurate method for the purpose and however it should be noted that the technology was not applied to a human sole before. Thus started on conducting our research on applying PPG technology to the human sole. After verifying that it was a viable option we further extended our research to identify the most optimal point on the sole to extract the PPG of the user. The entire procedure is identified in our research paper presented next page. The paper has been submitted for a research conference and the status of publishment is still pending.

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4 | DISEASE DETECTION

The diseases which Clardia can identify ranges over a wide range from cardiovascular, respiratory, kidney, nutrition related diseases. These diseases are identified through the health parameters obtained by the Clardia hardware platform. The parameters are analyzed and according to the standard medical observations of these parameters the diseases are predicted. The use of Machine Learning techniques and pattern recognition has also been used to identify and predict diseases.

OUR APPROACH

- We have analyzed the obtained health parameters based on standard medical research.
- Clardia also focuses on applying ML techniques and pattern recognition to identify possible disease symptoms hidden to the naked eye.
- We focus on providing a risk score associated with the infection of a particular disease. Clardia would thus be able to alert the user to meet their Physician for further examinations.

WHAT IS IMPORTANT:

- The predictive analysis of Clardia should not be mistaken for a standard medical diagnosis. Clardia only provides an indicator for the user early detection.
- The disease predictions are based on the average human taking into their Age, Gender and Demograph into consideration. Any user unique conditions should be specified for optimum predictions.

DISEASE DETECTION

PHOTOPLETHYSMOGRAPHY (PPG)

Non-invasive optical technology that detects changes in blood volume in the vascular system.It can evaluate cardiac output, arterial resistance, aortic elasticity, blood pressure, heart rate, and other peripheral vascular diseases. A PPG signal is derived as a voltage signal generated by a photodetector for light with changes in the flow of blood; the light passes through the skin, arterial blood, venous blood, tissue, etc.

HIGH BLOOD PRESSURE

PPG Technology can detect changes in blood volume in the vascular system. Hence through identifying patterns of change in the blood flow of a patient for a period of time, Clardia identify changes in patterns and sudden deviations and inform the user regarding it.

VASCULAR DISEASE

Cardiovascular disease and endothelial dysfunction is considered to be one of the first manifestations of vascular disease. Photoplethysmography is a non-invasive technique to evaluate endothelial dysfunction based on the emission of infra-red light on the skin.

OBESITY

Through continuous monitoring of BMI for a period of time, Clardia can identify whether a User tend to get Obesity. Overweight was defined as having a body mass index between 25 and 29.9; Obesity Class I as a body mass index between 30 and 34.9; Obesity Class II as a body mass index ranging from 35 and 39.9 and Obesity Class III as a body mass index of ≥40.

TYPE 2 DIABETES

Through calculating different indexes and ratios from the features extracted from PPG signal, we can benchmark them with patients already having Diabetes and calculate the probability of occurrence. Further there is a correlation between BMI and Diabetes, with incremental increase of BMI is a primary cause of Diabetes.

NUTRITIONAL DEFICIENCIES

Nutritional deficiencies, known as malnutrition, are the result of your body not getting enough of the nutrients it needs. Children are more at risk for serious complications due to nutritional deficiencies than adults. Deficiencies can lead to a variety of health problems. These can include problems of digestion, skin problems, stunted or defective bone growth, and even dementia.

5 VALIDATION

> Such a device would be beneficial for the patients as an initial screening to detect diseases.
> - Dr. M.A.S.Munasinghe,MBBS
> Medical Officer of Health
> District General Hospital,
> Ambilipitiya.

Upon the successful development of the initial prototype of Clardia, we approached technical and medical personalities in order to validate our product and obtain further feedback for the product development. We have consulted Academic Staff from University of Moratuwa, Physicians and a Researcher from the MIT Research group in USA. Their feedback and ideas have positively refelected on Clardia.

VALIDATION

We have pitched our product to a number of Physicians and have obtained their valuable feedback in order to assess the viability and suitability of the product through a medical point of view. It was identified that Clardia is a feasible solution which require proper testing and implementation. Hence it was identified that Clardia is a viable solution by professionals both in technical and medical fields.

We were able to secure a opportunity to use the laboratory and hospital facilities at the Poly Clinic Private Hospital in Ambilipitiya for the testing phase of the Clardia product. It will be a great opportunity to further validate and develop the product.

6 FEASIBILITY STUDY

The developed idea was evaluated to identify the feasibility of deployment as a commercial product. Feasibility was mainly evaluated through reffering technical & Medical Research Papers as well as a User Needs Survey.

FEASIBILITY STUDY

FINANCIAL

Clardia is a financially feasible product which can be manufactured at a competitive price which is affordable by the general public. The user needs survey has identified the expected price range of the product and under the financial plan of the proposal the entire price estimations have been derived upon. The conclusion justifies the feasibility of deploying Clardia.

SOCIAL

The survey carried out identified that the general public had the need to identify potential threats of diseases in advance to safe guard themselves and also it was evident that due to busy lifestyles healthcare is neglected and that they require a conveninet solution.

TECHNICAL

The technical feasibility of the product Clardia has been extensively discussed in the above sections of this proposal. Hence in conclusion it should be noted that the technologies deployed within Clardia are commercially viable. Research Paper and Medical Journals are provided under Appendices to justify the claims made through out the proposal.

ENVIRONMENTAL

The proposed product does not affect the environment in an adverse manner and thus the product could be identifed as environmentally feasible.

7 | MARKET RESEARCH & COMPETITOR ANALYSIS

SMART HEALTHCARE INDUSTRY

The market research revealed that the Healthcare Industry could be identified as one of the most expanding industries in terms of the growth. The expected CAGR for the period of 2016 - 2020 is estimated at 24.55%. This indicates that the the healthcare industry is lucrative and expanding and Clardia possess great scope in terms of the market growth. The value of the Smart Healthcare Industry is expected to be valued at $57.85 billion with the integration of IoT & Data Analytics which is also a main consideration of Clardia. Hence in conclusion it could be identified as a lucrative venture to invest in the Healthcare Industry and Clardia.

SOURCES

Global Smart Health Care Market (2016 -2020) by Technavio
The Market for Smart Wearable Technology ,A Consumer Centric Approach by WiFore Consulting
Smart Healthcare Products Market by ResearchMoz

COMPETITOR ANALYSIS

The Main Similar Products Available

FITBIT

The fitbit could be identified as a popular product which extracts user health parameters however it cannot be used for family healthcare as its focus is on single individuals.

WITHINGS BODY CARRDIO

Withings Body Cardio is able to some health parameters and provide analysis using PWV technology. However this technology is limited to cardivascular diseases, and the product reviews suggests some concern over the accuracy and convenience.

PRESTGIO FAMILY HEALTHCARE

The Prestgio solution focusses on the entire families health. Although in order to provide the service a user needs to buy all the above devices where as Clardia is a single device convenient solution.

MOBILE APPLICATIONS

Numerous mobile applications are present which analyze the health parameters which the users have to enter manually. However they do not have any hardware device or mechanism to extract the health parameters. The accuracy of the applications are also questionable.

CONCLUSION

The available healthcare products does possess great competition to Clarda. However none of the products are able to provide the functionalities which Clardia presents. Withings Body Cardio can be identified as the main competitor. Although it only focus on cardiovascular diseases compared to Clardia which can focus on respitaory, kidney and many other nutrition related diseases. The PPG technology is also more advanced & accurate compared to the PWV technology used by Withings.

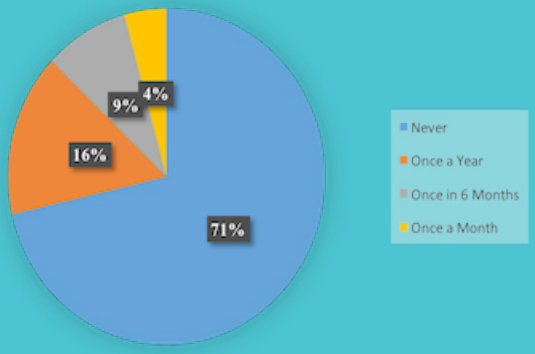
8 | USER NEEDS SURVEY

The user's needs and ideas are highly essential to develop a commercial viable product. Thus we conducted a online user survey where a questionnaire was prepared covering a broad spectrum of questions ranging from the demographics, user requirements in a similar product and also most importantly the level of understanding about diseases which the users possess.

USER NEEDS SURVEY

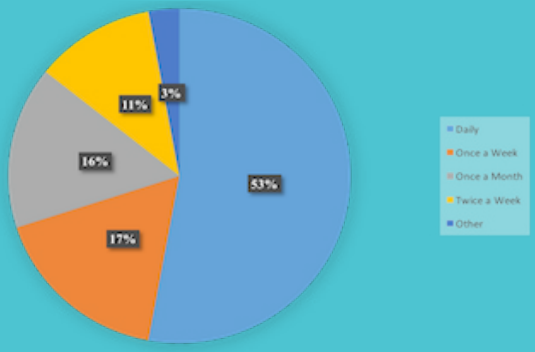
TO DESIGN A PRODUCT WHICH MEETS ALL YOUR EXPECTATIONS

KEY FINDINGS



Regularity of Health Chekups

It was identified that a majority of the participants (71%) did not take part in health chekups which shows a clear indication of the effectiveness of Clardia and the opportunity existing towards disease prediction.

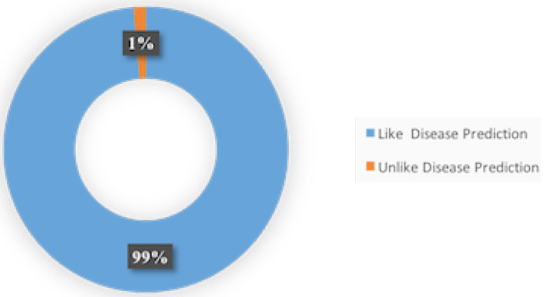


Time willing to spend with Clardia

Considering the practical implementation of Clardia the participans were asked about the average time they are willing to spend on the device. It was identified that 53% opted for daily usage, where as 11.4% and 17.1% were interested to use the product twice a week and once a week respectively. Thus in conclusion a higher majority of the users would find Clardia a convenient solution.

It was identified that 99% of the participants wanted to identify and predict diseases at an early stage. Hence we belive that Clardia would be the most convenient solution for all of them.

In addition to these parameters the practical aspect of installation of Clardia was identified.



The user's were also required to comment on their level of knowledge on disease symptoms which showed that there were diseases which a majority was unaware of. Thus in conclusion the user needs survey portraits positive aspects towards the deployability of Clardia.

OUR

9. BUSINESS MODEL

It is important to identify the most effective business model for the successful development of the product Clardia. Thus a study was conducted in order to identify possible business models and the practical aspects related.

Value Proposition

Clardia is a combination of a hardware and software solution which is able to cater many challenges existing in the current society. It can be uniquely identified as a solution with a combination of technical , medical and business innovation.

Target Market Segment

We have identified a B2C business model where we focus on our target market, the consumers in the Smart Healthcare Industry. The initial target would be to deploy Clardia within the untouched Sri Lankan Healthcare market and thus expand globally.

Market Position

Clardia provides an unique solutions for the consumers, although there exist products which have some overlapping functionalities with Clardia. Clardia could be identified as the first comprehensive family health analytics solution available and thus the focus on first mover advantage.

Core Competency

The core competency of Clardia lies within the innovative design and the health analytics. Thus the importance for the continous development of the product and analysis techniques.

Revenue Generation

It is expected to produce the Clardia hardware platforms and focus on selling the device through conventional distribution chanels. However it is important to note that the Clardia software is an unique solution which has been developed for health analytics. Hence the total retail cost of the product Clardia would include both the hardware and software costs. (A detailed costs analysis is presented in the next section.) Thus the user would be able to purchase the Clardia hardware from a retail store and download the Clardia mobile and web application free of charge.

Customer Relationship

The customer relationship should be considered as a highly important aspect since Clardia directly focusses on sensitive health analytics of cutomers. Hence it is important to enhance the focus and ensure the security, privacy as well as an efficient customer service for their queries.

10 | FINANCE & MARKETING PLAN

In the previous sections of this proposal a comprehensive Market Research, Competitor Analysis was conducted and the Target Market was identified. This section of the proposal would mainly focus on the Marketing Strategies, Marketing Goals as well a comprehensive Financial Analysis.

Marketing Strategies

Strategies in terms of Advertising , Direct Marketing and Social Media Marketing could be identified as suitable means to increase the product awareness of Clardia. Also it is important to note that upon successful implementation the marketing could be carried out via the word of mouth of Physicians which would be an important method of validating the product and increasing the product brand image and recognition.

FINANCIAL AND MARKETING PLAN

Marketing Goals

One of the key aims of marketing would be to focus on creating brand awareness since Clardia is a novel brand. The unique functionalities existing within Clardia must also be specified and communicated efficiently. The surveys carried out also suggested that the Sri Lankan Healthcare Industry is still untouched by any major player. Thus it could be beneficial to initiate Clardia through a focus on the Sri Lankan market and upon success expand globally. Hence the main focus would be to focus on the 82% of the users in the Sri Lankan market who are interetsed in healthcare and currebtly do not use any healthcare device.

FINANCE PLAN

The Finance plan would focus on the initial development costs in terms of product proto typing as well as the costs related to testing. A subsequent cost analysis is also presented for the development of 1000 units of the Clardia product along with a cost breakdown related to the Clardia product. (The Finance forecasts are presented on the next page.)

FINANCIAL PLAN
PRODUCT PROTOTYPING COST ANALYSIS

PROTOTYPE DEVELOPMENT
Electronics, Printed Circuit Boards, Enclosure and related costs **$3,000.00**

SOFTWARE / FIRMWARE DEVELOPMENT
Machine Learning / Pattern Recognition Algorithm Development, Mobile/Web Application Development, Cloud Services **$8,000.00**

TESTING AND DATA COLLECTION
Alpha Testing, Beta Testing, Customer Review Analysis **$7,000.00**

TOTAL:	$18,000.00

NOTE

The above initial proto typing costs invloves the labour, transportaion and logistic costs related.

FINANCIAL PLAN

PRODUCT COSTS ANALYSIS (1000 UNITS)

ELECTRONICS Microprocessor, Wireless Connections, Printed Circuit Boards and Related costs	**$15,000.00**
ENCLOSURE 3D Printing, Soft Tooling	**$6,000.00**
SOFTWARE / FIRMWARE DEVELOPMENT Machine Learning / Pattern Recognition Algorithm Development, Mobile/Web Application Development, Cloud Services	**$17,000.00**
QUALITY ASSURANCE Testing, Certifications	**$3,000.00**
TOTAL:	**$41,000.00**

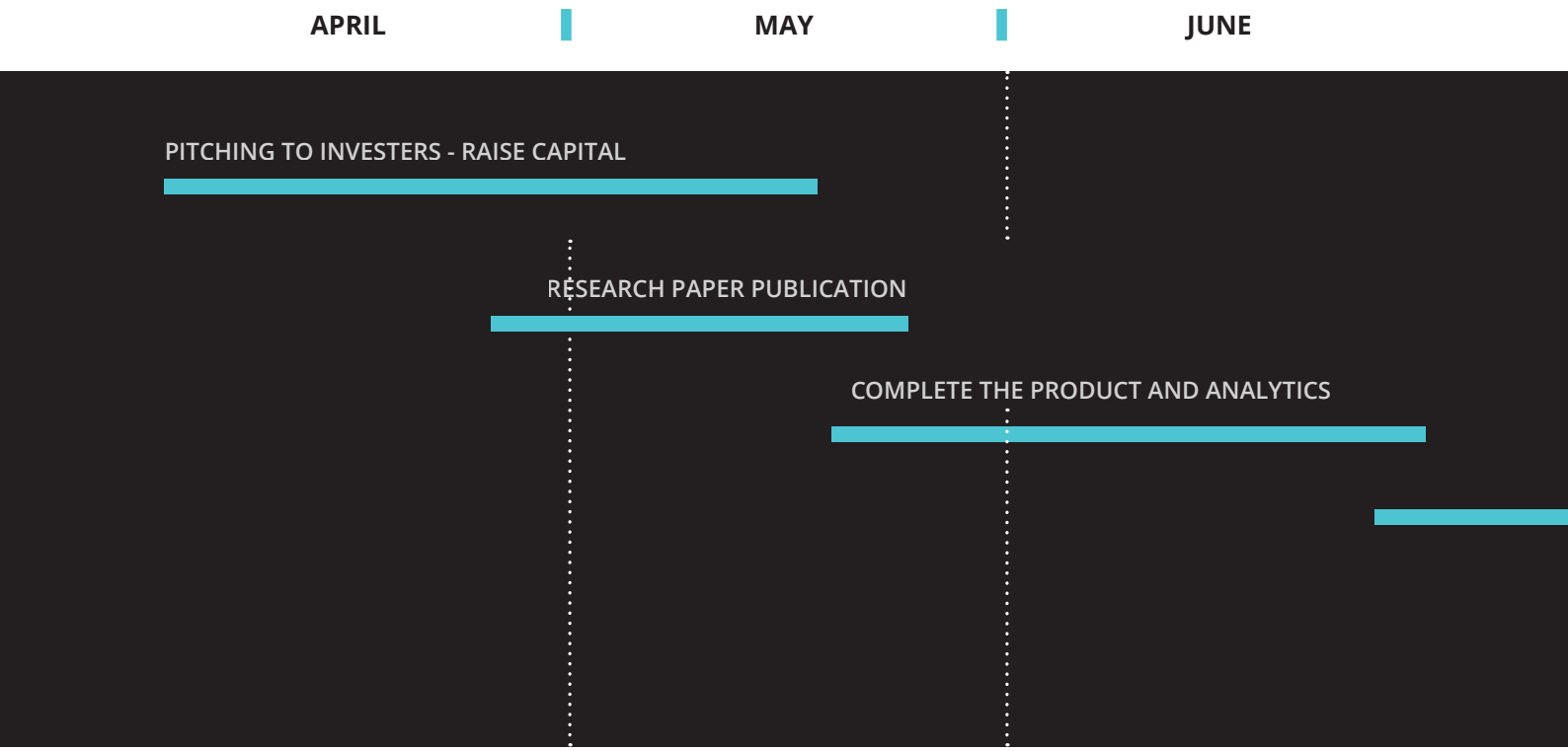
UNIT COST OF CLARDIA	**$41.00**
PROFIT MARGIN	**$30.00**
PRICE PER UNIT OF CLARDIA	**$71.00**

ESTIMATION OF INVESTMENT

PROTO TYPE DEVELOPMENT	**$18,000.00**
PRODUCTION	**$41,000.00**
TOTAL:	**$59,000.00**

BREAKEVEN UNITS (AT PROFIT PER UNIT $30) **1967 UNITS**

11 TIMELINE OF DEVELOPMENT



PITCHING TO INVESTORS

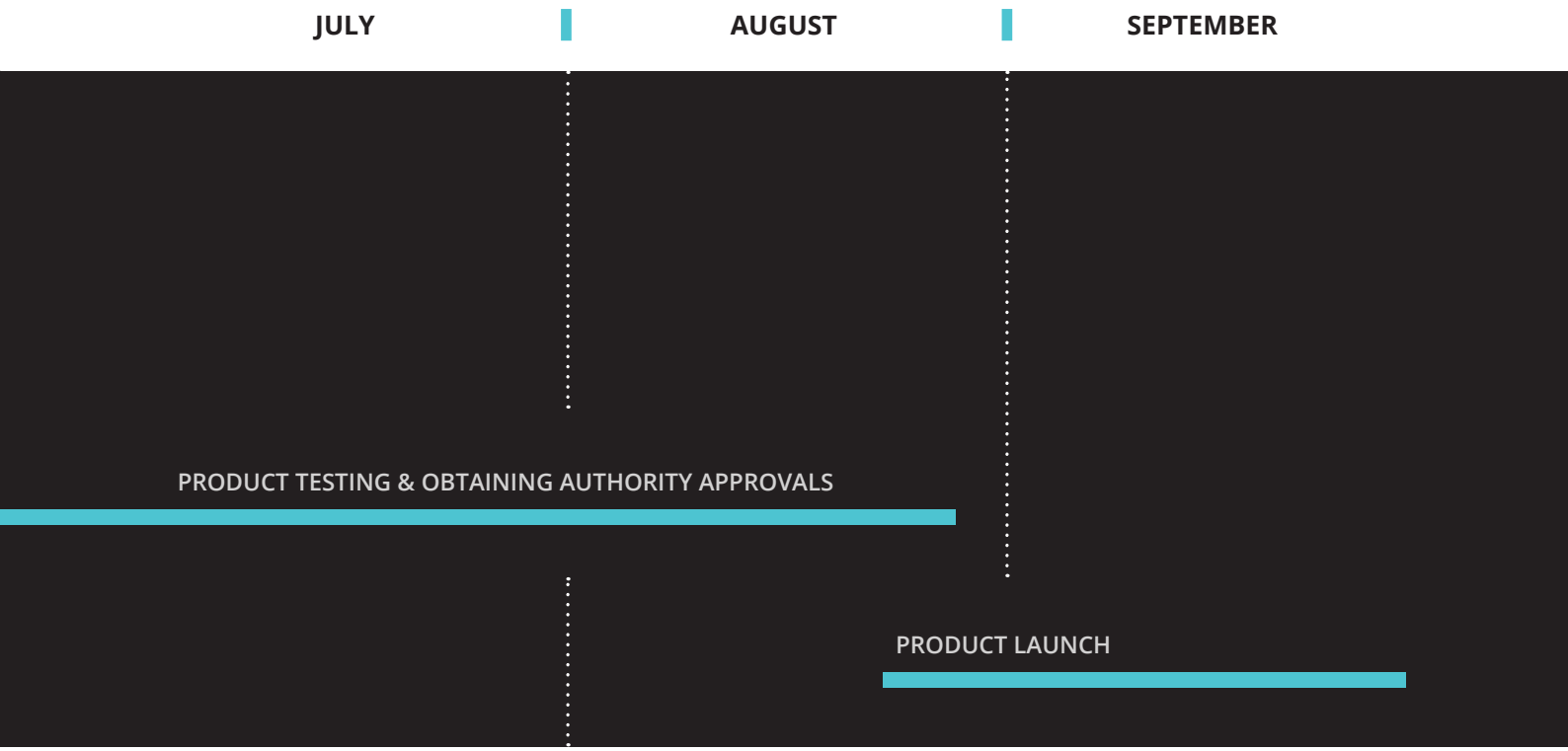
The further development of the product requires some investmenst which we are focussing in order to develop a fully operational commercial device. The investment and colloboration would be essential in developing a sound strategy for Clardia.

RESEARCH PAPER PUBLICATION

The conducted novel innovative research needs to be submitted to identified Research Conferences. The publication of such research would add value to the product Clardia. Patenting the methodologies developed in Clardia would also be a concern.

COMPLETE THE PRODUCT & ANALYTICS

The current fully operational prototype could be further optimized in terms of power consumption and commercial development. Thus the focus would be to enhance the product with a better enclosure and PCB. The focus will also be on to work on the improvement of the Clarda Analytics to identify diseases accurately, and increase the scope of diseases identified.



PRODUCT TETSING & APPROVALS

The product testing could be identified as a crucial part of development, where the functionalities should be tested for all user cases. The accuracy of the Analytics also should be verified. Upon successful testing the approvals of the authorities needs to be obtained to deploy the product commercially.

PRODUCT LAUNCH

Upon the successful completion of the previous phases of development, it would lead towards a successful product launch.

12 | FUTURE DEVELOPMENT

POTENTIAL STRATEGIES AND SCALABILITY OF CLARDIA

01 EXTENSIVE RESEARCH ON THE RELATIONSHIP OF WEIGHT & CARDIOVASCULAR PARAMETERS

RESEARCH AIDS THE CONTINOUS DEVELOPMENT OF THE PRODUCT TO ENHANCE CAPABILITIES

We are focusing on using the Clardia hardware platform for further research related to the relationship of weight & cardiovascular health which is identified as a unique area of research. Through such research many insights on cardiovascular diseases could be obtained and used for the betterment of the users. Currently researches have only used numerical techniques in the form of surveys to ascertain existence of such relationships. However a scientific method such as Clardia would be much more effective.

02 BUILD CLARDIA AS A STANDARD HEALTH DEVICE

THE EFFICIENCY OF SRI LANKAN HOSPITALS COULD BE INCREASED IF ONE STANDARD PRODUCT EXISTS FOR OBTAINING HEALTH PARAMETERS.

It can be identified that currently during general medical examinations the physicians need to use a number of devices to obtain the patients heart rate, temperature and the blood pressure. Thus the possibility exists to replace these devices with one single device such as clardia. In order build such a device more research and focus on the existing device would be required. This would result in increased accuracy. In order to achieve such a goal more focus on research and development would be required.

03 MACHINE LEARNING & BIG DATA ANALYTICS

IDENTIFY PATTERNS IN USER HEALTH PARAMETERS.

Many hidden patterns exist within the users health parameters. Identification of such patterns would enhance medical diagnosis and would lead to the betterment of the human kind and medicine.

13 CASE STUDY - WHY USE CLARDIA?

THE PRACTICAL IMPORTANCE OF CLARDIA FOR OUR LIFE

01 FIRST TIME HEART ATTACKS

It is important to identify the requirement of Clardia and methods by which Clardia differs from existing healthcare products. According to the American Heart Association and the Center for Disease Control and Prevention in USA 73% of the total heart attacks are first time heart attacks. This is a significant percentage and relates to a massive number of people.

People always have the risk of death due to heart attacks, and for that reason when a person is faced with a first time heart attack he or she would be fully unaware of it. The importance of Clardia surfaces in this case as if you a Clardia user with time your PPG characteristics will be recorded, and the possible changes will also be detected. Through these minute changes related to cardiovascular health Clardia is able to provide some insights on the users health. Through the risk score Clardia generates and through notifications the user may have some insight so that he or she could consult a Physician and obtain a health checkup. Through such methods the user may well be able to safeguard him self from a first time heart attack. This is the case for most diseases where early disease symptoms are quite vague and instances where the user doesnt have much knowledge on those symptoms.

02 CHEST PAIN THE FIRST SYMPTOM OF HEART DISEASE

Studies have identified that in 92% of the cases the first symptom of heart disease is a heart attack. Thus its quite evident that in diseases such as heart diseases there arent many prior indicators which we can use generally.

Although the physically seen symptoms are minimum, there are symptoms which are hidden to the naked eye. Clardia is the solution to identify these minute symptoms and thus take preventive action. Failure to detect diseases in advance also results in critical medical conditions, which would have been diagnosed if detected at an earlier stage.

03 BUSY LIFESTYLES - NEGLIGENCE OF HEALTH

During the market survey we carried out we identified that nearly 73.4% of people never schedule a health checkup. They only focus on their health once they are affected by some disease. This is quite common due to the busy lifestyles. However Clardia does not require much effort from the user. It only requires 20 seconds of the valuable time which is convenient. Another benefit of Clardia is the abilit to keep track of the user data and notify the user when there is a risk of some disease. Thus a Clardia user doesnt need to review the data as the system it self will analyze and provide with meaningful information.

14 OUR STORY

We are a group of Engineering enthusiasts, on the lookout for opportunities to test our skills through the innovation of marketable solutions to everyday problems encountered by the consumer and merchandiser alike, in this ever evolving world of tech heavy entrepreneurship.

Our ultimate goal is to be of use to the entire societal spectrum, with the onus on a type of technology innovation that guarantees the highest possible level of simplicity, in order to ensure ease of access to the customer. Through these goals, we belive that we can contribute handsomely to the overall technological development of Sri Lanka, for our vision embodies the ideal perfection is but a beacon, and the pursuit of perfection ought to be available to all.

Vision

”Our Vision is to be the icon of innovation and creativity”

Mission

“We Strive hard to explore the unchartered innovations with passion to generate value”

OUR TEAM

CHIRATH HETTIARACHCHI

CO-FOUNDER , CEO

Department of Electronic & Telecommunication Engineering, University of Moratuwa.
CIMA- Passed Finalist

BUDDHISHAN MANAMPERI

CO-FOUNDER, CTO

Department of Electronic & Telecommunication Engineering, University of Moratuwa.
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15. APPENDICES