



WEARABLE TECHNOLOGY

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ABSTRACT: A very wise age old saying goes like this – HEALTH IS WEALTH. The importance of having a Healthy Body and Mind was very well understood by our ancestors and lot of research has gone into identifying the types of Diseases, their root causes and probable cures. With the advent of technology and high end devices, the research has got a step further into minute detailing of the occurrence of the diseases.

While at one side, we are making good progress on the research and innovation of things, at the other side, we get to hear people suffering /losing life from heart attacks, panic attacks and nobody is there to attend to them immediately and provide the right medical help.

Keywords: Heart beat, Pulse rate, service provider, Health details recording devices, GPS.

I INTRODUCTION

Wearable devices are currently at the heart of just about every discussion related to the Internet of Things. The requirement for self-health monitoring and preventive medicine is increasing due to the projected dramatic increase in the number of elderly people until 2020. Developed technologies are truly able to reduce the overall costs and time needed for prevention and monitoring. This is possible by constantly monitoring health indicators in various areas, and in particular, wearable devices are considered to carry this task out. These wearable devices and mobile apps now have been integrated with telemedicine and tele-health efficiently, to structure the medical Internet of Things. This paper reviews wearable health care devices both in scientific papers and commercial efforts.

II OBJECTIVE

III EVOLUTION OF WEARABLE TECHNOLOGY:

The Wearables history dates back to 13th Century when Eye Glasses was invented. Later in 16th Century, the earliest Portable and wearable clocks were invented. Another invention in China during 17th Century was a wearable abacus ring.

Around the same time, Pocket watch was taking off in Europe. By the end of 19th Century Pocket watches had reduced in size considerably. Wearable Technology achieved mainstream popularity with the Bluetooth headset in 2002.

Between 2006 and 2013, iconic wearable technology devices like Fitbit, Google glasses emerged.

With the progress of the Technology, the features, capabilities and purpose of the wearables have evolved [1]. Wearables have market in every industry the has the operations Sports world, Fitness zone, Health care or Entertainment Industry.

IV PROBLEM ANALYSIS

Unlike in developed countries, Health Care industry in India is very unorganized. Most of the people in India who are below Poverty line are deprived of the basic health care facilities. There is a need for an organized Health Care. Having said, it is also observed that off late, some of the hospitals are adopting the Corporate culture of having a

My paper is intended to provide instant and immediate health service to the emergency condition. It communicates between an individual, Health Centers, Dispensaries, family members and colleagues. This process reduce the communication time between patient and health center and there is a lot of risk reduction process. The system works with sensor devices, GPS for patient location transmission, Server to maintain hospitals data, cell phone communicated details, organization details in which the person is working and finally the location where the patient is at present.

It also provides the immediate health treatment to the patient without delay. In certain cases, patient is unable to communicate their health condition to their neighbors. The solution provided in this paper will take care about the related networks, communication and action steps to rescue the patient from serious health problems. It also enhance the healthy and life span of citizens can be extended.

'Happy Customer' 'Better Service' and 'Returning Customer' as their primary motto [2]. The hospital management should understand the importance of emergency better, and provide quicker and smoother service to a patient who walks into a hospital /clinic.

Hospitals need to understand and value the storage of important details of citizens at a centralized server with very basic citizen data like – Name, Age, Address, Primary contact, Alternate contact, Allergic foods, Allergic medicines etc. With the Wearable devices available in the market, we can enhance the functionality of the device to provide continuous feedback of the tracked patient's statistics [3].

Currently, the wearable devices like FitBit captures a person's Vitalstats like heartbeat, calorie burnt, sleep patterns and so on. As part of this solution, I am proposing that the device should be provided with a capability of data transmission feature to the right one immediately. The Wearable device should be capable of transmit the vital stats of a person like Heartbeat, Blood Pressure on a periodic basis to the HealthCare providers. The moment the device detects Storage of Patient's Data. There are plenty of Patient Management System / Hospital Management System software that are available in the market [5].

To address the solution, one such software can be picked up and customized to suit the individual or organization employee requirement[7].

- a. Selection of Device / Develop Device :
Device should be developed to capture the wearer's vitals and have storage capacity as well.
- b. Transmission Approach:
A Network should be built to transmit the data from Patient to the HealthCare provider.

V PROPOSED SOLUTION PROCESS

The solution includes the identification and introduction of devices for sensing the details and forward to the destination depicted in Fig. 1. It is important to monitor the required health details continuously by wearable devices as mentioned above. The decision regarding the advise of medicine or treatment or call emergency vehicle for treatment is based on the scenario specified in Fig. 2.

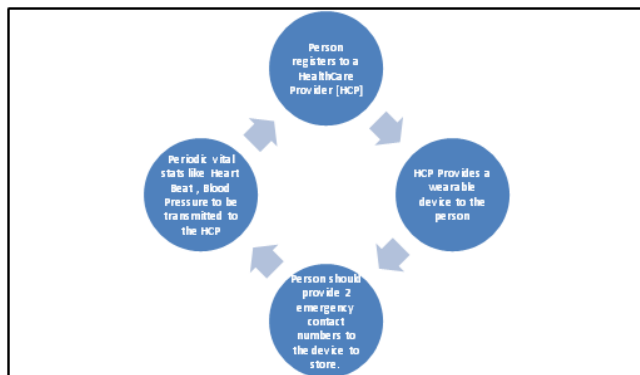


Fig. 1 : Flow of the health problem detection and devices management

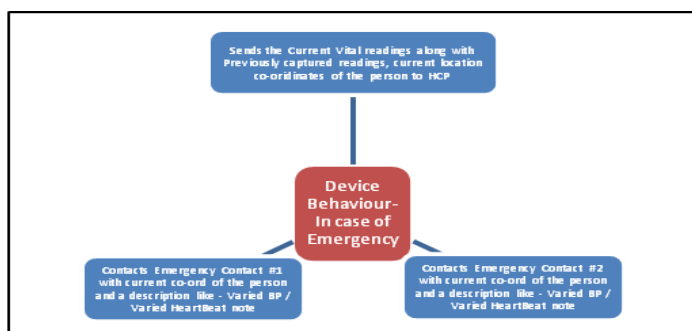


Fig. 2: Behavior of the Wearable Device in case of Emergency

With the Wearable devices exit in the market, we can enhance the functionality of the device to provide continuous feedback of the statistics of user. Currently, wearable devices available in market like Fitbit band, captures a person's statistics like heartbeat, calorie burnt, sleep patterns and so on. As part of this solution [4]. I am proposing that,

we should enable data transmission feature on the Wearable device that will transmit the vital statistics of a person like Heartbeat, Blood Pressure on a periodic basis to the near by HealthCare centre [8]. The moment the device detects any variation in this regard, it should have the capability to capture the time and location of the ill person, and co-ordinates the person details along with the observed abnormal health readings and the previously captured readings to the Health care centre that this person is registered with [6]. It is also advised to maintain the emergency contacts of nearby hospitals for the same health disorder treatment to inform the emergency and take the patient to the health centre. Also the device should be able to send a note to the emergency contacts with the location co-ordinates and description of the variation, so that a family member is aware of the incident and can provide timely help.

VI CONCLUSION

Going by the industry reports and business need, it is clearly evident that Wearables are very useful to the organization employees in the present world scenario. With the changes happened in the technology moving from Web 2.0 to Data warehouse, Cloud Computing, Big Data and analytics, Internet of Things, Artificial Intelligence and Deep Analytics, Wearables are going to reach wider population in some way or the other.

Not only in the Health Industry, but also in every industry is essential to implement. The future scope of this paper is to enhance the facility to identify the patient's emergency numbers and intimate the status and also advice the near by known person in recent calls for the first aid or immediate medication to rescue the patient from risk.

The system should also required to maintain the survival data of patients by wearing health status detection bands along with the new updates in devices as well as software required. It is also the responsibility of the service provider that the services are continuous and never fail in any situation. In case of any failure, the system should find alternate services to rescue the patient in emergency cases.

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