

Chapter 19

Role of Smart Wearable in Healthcare: Wearable Internet of Medical Things (WIoMT)

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ABSTRACT

Remote Health monitoring is encouraged to keep an eye on the patient's health status outside the zone of the clinic. These smart wearable gadgets are now integrated with mobile apps to work efficiently as telemedicine and telehealth to incorporate into the Internet of Medical Things. This chapter introduces WIoMT (Wearable Internet of Medical Things) and reviews smart wearable healthcare devices' scientific terms as well as commercial pains. Internet of Medical Things is displayed through a refined background, wearable computing, wearable technology, cloud frameworks, and architecture design. Included are required hardware and software, body sensors, smartphones, the smart medical application, medical location analyzers for data storage, and finally, a diagnosis. Wearable devices are tested under strict observation fitness, vital signs, and smart environment. Wearable devices are now used for a wide scale of monitoring healthcare.

INTRODUCTION

Today's busy standard of living led people to be less prioritize on their health which is overlapped with another family, work, professional, study issues to take care of it. Health is dynamic on one's part which may be an impact of an environment, outbreak diseases, food intakes etc. in some of the other way. Concerning about health to be monitor is the utmost important issue to be noticed early. Personalize health

DOI: 10.4018/978-1-7998-8052-3.ch019

monitoring system will be an attracting choice in the right place. This system will help to identify critical problems (if there) before getting worsen and ensures about health concerns. It will also prove a good prevention from dreadful diseases which can be detected in an early stage. Thus, It can be understood that the personalized health monitoring system will not be something like a desktop or laptop or even a mobile which accompany all the time with patient or person rather than it will be something which can be comfortably worn and quietly do its job. Here, the concept of wearable devices jumps in, these wearable devices which are monitoring individuals is beyond the fields of health as well these devices are controlled by the Internet. Internet of things connecting wearable device the whole concept now can be called as "Smart Wearable". This chapter will discuss the smart wearable role in healthcare.

The wearable device works primarily for health monitoring on regular basis. The device quickly enables itself to gather the person's data (temperature, heart rate, heat, pulses) including location, date & time. The device is an intelligent enough to sense the abnormal data (crosses the critical level) of person and not wasting a moment it will automatically send notifications(all details) to person's relatives & friends as well location of nearby emergencies. Smart wearable is capable enough to provide details in the form of the test report for the physician as well for the patient which will be highly useful at the instant critical moment. Smart wearable should be thankful for -ever well implemented mobile invention with latest smart technology in everyone's hands. Although smart-phone is quite uncomfortable to be worn all the time due to its confine features (size, weight etc.). This wearable can be trusted enough to capture an individual's live stream data which will enable oneself to have self-knowledge about his/her body's physiology and kinesiology. Smart-phones have limited functionality to help people with health and fitness issues. This can be seen from the popular smart-watches, smart wrist-bands which are able to keep track of physical activities in a whole day, a month etc and also provides with fitness goals and other information which keeps users boost up. Smart self-monitoring wearable is so much helpful in measuring blood pressure, stress, and hypertension which will be able to control a number of diseases which are the root cause of many illnesses (Metcalf et al., 2016). Smart Wearable contribution in health is under research and making stunning progress which will be expecting a lot more in case as in surgery (Atallah et al., 2011), (Cicero et al., 2015). Surgical procedures via smart wearable are a highly convenient way of observing patient's critical signs thus reducing equipment size as well as external devices wiring. This will save the patient from transition and transportation chaos as well keeping them away from deteriorating condition in case of an emergency which may lead to injury complications. These applications contribute to improving medical quality. Leaf Technology is an example of sensor product for the patient which will be able to prevent complications to arise in a patient during a stay in the hospital. Although certain subjects should be considered while installing smart wearable for health care. For instance, People get exhausted of the fitness bands and discard them. They aren't useful; people lose their fitness drive (Wearable and the Internet of Things for Health, 2015).

BACKGROUND AND HISTORY: THE INTERNET OF THINGS (IOT) IN HEALTH

The Internet of Things (IoT) is a promising concept for the variety of new potentials brought about by enveloping connectivity. This concept expands itself with the help of network and computing ability to have connectivity with objects existing with sensor and capable to exchange data useful in daily life without humans help. The IoT principle establishes itself to construct, control, and supervise the corporeal world with the method of enveloping smart-networking, data-gathering, deep optimization,

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