Wearable User Interface

Name

Institution

Introduction

Wearable computing technology offers various opportunities in an age when users requires omnipresence dependence on technology and computer interfaces. The requirement is attributed to the research and development of wearable technology. Wearable computing technology refers to computers incorporated into accessories and items of clothing and are worn on the body. The devices assist users in personal activities through aiding and augmenting their everyday life as they perform similar computing tasks such as laptops and mobile phones. However, wearable devices are more sophisticated as they provide scanning and sensory features such as biofeedback (Jhajharia, Pal & Verma, 2014, p. 5700). Wearable user interface offers a modern form of interaction between users and a computer device incorporated into a user's personal space. A thorough design and development of human computer interface is required to let users deploy wearable computing technology during their primary activities and in the field. Wearable user interface has led to the development of sophisticated design requirements such as minimum cognitive load and efficient and easy ways through which users divide attention between tasks.

Wearable User Interface in Health Care

Wearable user interface systems include some sensor devices such as necklace type, wrist watch type, chest type or shoulder type used for getting patient's physiological information such as blood pressure, heartbeat rate and other patient's status monitoring signs in the hospital or at home (Gelogo & Kim, 2015, p. 197). In addition, implanted medical devices and sensors are becoming a commonplace enabling patients to reprogram and recharge them without the use of traditional methods. An example of wearable user interface in healthcare includes devices that allows patients to be able to monitor asthma in real time, a device with smart sensors attached to

a patient's back to give the patient exercises to do, devices and applications that help users track their food consumption or wearable sensors that help monitor mood.

Wearable Sensor, Monitors and Devices

Recent technology advances in sensor and device manufacturing have paved way for new opportunities for deploying wearable technology in the digital ecosystem. Traditional sensor size and front-end devices made is difficult to deploy them in the wearable computing technology to gather critical physiological data. Wearable sensors, monitors and devices are characterized with microcontroller functions, wireless data transmission, miniature circuits, and front-end applications. Wearable sensors are integrated into different accessories, mostly garments such as wrist bands, hats, eye glasses, shoes and socks, while wearable devices are inform of smartphones, headphones and wristwatches.

How Wearable Devices Communicate

Wearable tech devices deploy digital sensors that are integrated into the sensor networks comprising of ambient sensors and other body worn sensors. Some wearable data and gathered sensors are uploaded to a remote site, for instance, a hospital server for further analysis. With the advent of mobile technology and cloud computing, wearable sensors can now be easily accessed ad upgraded remotely without the need for a user to install a software on the wearable product. The advent makes its cheaper and easier to maintain wearable computing technology network such as healthcare monitoring system network (Witt, 2008).

Wearable User Interface and MIS

Wearable electronic products require a management information system for data management, monitoring and control of the wearable devices measurements to apply proactive actions. Wearable user interface has component based monitoring capability that requires the

management information system to have alarms for unexpected behavior and measurement detection and to depict a risk measure for a given metric such as blood pressure of rate of the patient's heart beat. Management information systems manages, controls and monitors the process of integration between wearable devices, smart tools and machines and corporate information systems data such as documents, tasks models, schematics and historical databases. This process anticipates and delivers information and guides in complex procedures (Yamamoto, 2015, p. 524).

Conclusion

Wearable computing technology has paved way for new research opportunities in new intelligent user interfaces that minimize the cognitive workload and complexity and enable users to interact effectively and easily with the technology. Wearable user interface offers various opportunities especially in healthcare where the technology is used for tracking physiological function and biofeedback.

References

Gelogo, Y., & Kim, H. (2015). Integration of Wearable Monitoring Device and Android Smartphone Apps for u - Health care Monitoring System. *International Journal of Software Engineering And Its Applications*, *9*(4), 195 - 202. doi:dx.doi.org/10.14257/ijseia.2015.9.4.20

International Conference on Human-Computer Interaction, & In Yamamoto, S. (2015). *Human interface and the management of information: Information and knowledge in context : 17th International Conference, HCI International 2015, Los Angeles, CA, USA, August 2-7, 2015, Proceedings*.

Jhajharia, S., Pal, S., & Verma, S. (2014). Wearable Computing and its Application. *International Journal of Computer Science And Information Technologies*, *5*(4), 5700-5704. Retrieved from http://www.ijcsit.com/docs/Volume%205/vol5issue04/ijcsit20140504190.pdf

Witt, H. (2008). *User interfaces for wearable computers: Development and evaluation*. Wiesbaden: Teubner.