Wearables and Its Future

K Ananya, Vishal MA, Varun K , M Nirmala*

*Associate Professor, Computer Science and Engineering, New Horizon College of Engineering, Bangalore, Karnataka, India

Department of CSE, New Horizon College of Engineering, Bengaluru, Karnataka, India

ABSTRACT

Wearable technology is becoming more and more popular. Wearable technology is anticipated to significantly impact our daily lives in the near future. This study has two objectives. The first is the categorization of wearable technologies into three categories: wearable consumer electronics, wearable textile technologies, and wearable health technologies. The study's second objective is to demonstrate how wearable technology will mark a turning point in both people's daily lives and how organisations conduct their operations in the future. The future will be safer, simpler, healthier, quicker, and more enjoyable thanks to wearable technologies, according to the prospective uses.

Keywords: Research Paper, Technical Writing, Science and Technology

I. INTRODUCTION

Since humanity began to progress towards civilization, technology has advanced progressively.

The development of electronic chips, GPS, Wi-Fi, the internet, computers, sensors, and advances in nanotechnology, however, have recently brought about some revolutionary breakthroughs that have revolutionised the entire globe at a previously unheard- of rate. One of the most significant domains to result from these ongoing technical developments is wearable technology (Tao, 2005). Wearable technologies can be characterised in the simplest form as "the technological devices that are worn on a user's body," even though there isn't a clear and widely accepted description in the literature currently in print (Nugroho, 2013, p. 6).

Although wearable technology has been around for decades, if not centuries, it is only recently that they have gained popularity.

The definition of wearable technology is quite broad and ambiguous, and it is very difficult to pinpoint their traits and requirements. Therefore, it would be very helpful to comprehend how wearable technologies can be categorised based on their fundamental qualities. The wearable technology can be categorised into three primary groups, according to the literature. These subcategories include wearable consumer electronics, wearable textile technologies, and wearable health technologies.

Companies and institutions are working hard to design more comfortable, dependable, useful, integrated, lighter, smaller, aesthetically pleasing, and fashionable products, though, in order to increase the use and adoption of wearable technological devices (Fortmann et al., 2013; Kurwa et al., 2008; McCann & Bryson, 2009). As a result, consumers will start incorporating wearable technology into their daily lives, increasing the sales

volume of these gadgets. According to ABI Research Company and Juniper Research Company, the market for wearable technology will include 170 million devices by 2017 and 19 billion dollars in revenue by 2018 respectively (Kurwa et al., 2008). These projections show how significant wearable technology is. After the growth of wearable technology, there will likely be a revolutionary transformation for people and businesses. This study's objective is to demonstrate via examples how wearable technologies will bring about a revolutionary transformation in society and business practises in the future.

II. METHODS AND MATERIAL

Health technologies for wearables

These days, the health industry has perhaps made the most widespread use of wearable technology. Additionally, the majority of studies on wearable devices in the literature focus on health-related applications. According to Rutherford (2010), the advancements in wearable technology are predicted to cause a paradigm shift in the healthcare industry. In this situation, academics and business experts have worked very hard to design and create wearable solutions for health-related problems (Chan et al., 2012).

The ability to continuously monitor a patient's health state and obtain personal data about the patient is what wearable technology in the health sector contribute most to (Binkley, 2003; Bonato, 2010; Chan et al., 2012).

Other uses of Applications for wearable technology in the healthcare field include cardiovascular disease and rehabilitation. In Functional Assessment After Stroke in Parkinson's Disease (Binkley, 2003). Today's wearable medical technology, however, are primarily concerned with acquiring data, monitoring, and diagnosing health issues.

Textile Wearable Technologies

A relatively new idea allows for the creation of wearable electrical textiles for a variety of applications, including detecting and monitoring bodily functions, delivering communication capabilities, data transfer, and environmental control (Tao, 2005). Particularly, the introduction of nano-fibres and nano-coatings offers exceptional properties and causes revolutionary changes in the textile sector (Hurford, 2010). The ability of clothing to change colour on demand or in response to the wearer's biological indicators is one of the most significant wearable technology applications in the textile industry. For instance, the Bubelle Dress was developed by researchers at the Philips Company and changes colour depending on the wearer's emotions (Philips.com, 2014).

Consumer Electronics for Wearables

There are hardly any research on wearable consumer electronics in the literature. Everyday usage electronics are included in the term electronics. According to Okwu and Onyeje (2013), "Consumer electronics are most frequently utilised for communications, office productivity, and entertainment. TVs, cell phones, cameras, camcorders, music players, and video players are important consumer electronics goods (Hartmann, Trew, & Bosch, 2012). Consumer gadgets that are worn on the body of the user to facilitate daily activities are referred to be wearable in this sense. According to Kurwa et al. (2008), major electronic corporations like Google, Apple, Samsung, Nike, Qualcomm, and Microsoft are making significant investments in wearable consumer electronics.

THE FUTURE WITH WEARABLE TECHNOLOGIES

The most of the important electronic Businesses have concentrated on wearable technology, and some of them have released the early iterations of others are still developing prototypes of their wearable items. For both public and commercial application, wearable technology is currently in the "early adopter" stage (Taylorwessing.com, 2014). Future smart glasses with augmented reality capabilities will likely be the most potent and widely used wearable technology. As these items are developed and their costs come down, they will mature and the pace of the devices' social adoption will quicken.

Two significant debates are sparked by the rising popularity of wearable devices. Is the rise of wearable technologies a breakthrough invention or is it only a fad? is the first topic of discussion. There are always some opposing viewpoints, particularly in relation to technology. Watson stated in 1943 that "I think there is a world market for maybe five computers" and that "There is no reason anyone would want a computer in their home." These were both incorrect Olson (1977) and Rinkworks (2014).This essay makes the argument that wearable technology is not a passing trend; rather, it will become socially acceptable and transform the lives of those who use it.

The question of whether wearable technologies will be safe and beneficial for people is another important topic of discussion. Numerous authors have discussed the risks associated with wearable technology in the literature, particularly as they relate to privacy. According to Popat and Sharma (2013), sensitive information about people and businesses can be stolen if wearable technology are left unattended and/or insecure. Wearable technology could result in an unparalleled loss of control over an individual's personal information, according to Ackerman (2013). Another privacy concern that people may have is discreetly filming or photographing individuals, private properties, locations, or goods. However, rules and regulations, firewall, anti- virus, anti-spyware, and anti-malware soft specifically created for this purpose can alleviate the majority of privacy difficulties.

III. RESULTS AND DISCUSSION

Personal and Public Safety: Despite the claim that wearable technologies will compromise security, wearable gadgets will still society's security. As an illustration, bio-censors will soon be included into wearable technology and will monitor brain activity (Livescience.com, 2014). The use of these tools may be required for both present and potential criminals. These sensors will immediately alert the authorities if they plan to commit a crime. As a result, there will be less crime in society. Smart glasses with unique applications will also be utilised while driving.

Business: It is anticipated that wearable technologies will innovate both company strategy and methods of conducting business. There won't be a need to physically travel to meetings in the near future. Instead of W/C meetings, the managers may convene in an augmented reality-created virtual conference space where all decisions would be recorded (Sanganee, 2013). Secretarial services will also cease to exist. Because wearable technology will serve as the virtual assistant for employees, these assistants will alert the wearer whenever and wherever they are needed, schedule meetings, and remind them of important information. The virtual

assistants will also have a comprehensive understanding of the wearer and never lose any type of information. The wearable technology can be utilised for a variety of corporate tasks, including research, production, sales.

Production: In logistics and production employees should identify and bring the required parts while working extremely efficiently. However, occasionally they can be perplexed as to where the relevant components or goods are. When the manufacturing needs certain items, the list might be instantly posted to the smart glasses. It may navigate the best route for the workers and place them in the correct order, leading to time and cost savings.

Sales: Retailers can implement a system that allows consumers to input their shopping lists to the Smart Glasses, and the glasses will employ interior navigation to help the customers conclude their shopping as quickly as possible. Furthermore, it's possible that wearing garments may become unnecessary in the near future. Travel: Wearables with integrated augmented reality through technology, users can virtually visit cities and tourism destinations. In addition, employ virtual city tours for sightseeing. It's possible that new virtual tourism businesses will start to appear soon. In various ways, travel agencies might present hotels to clients virtually in 3D. The customers will thereby make the proper decisions. Travel: Wearables with integrated augmented reality through technology, users can virtually visit cities and tourism destinations. In addition, employ virtual city tours for sightseeing. It's possible that new virtual tourism businesses will start to appear soon. In various ways, travel agencies might present hotels to clients virtually in 3D. The customers will thereby make the proper decisions.

People with disabilities: The influence of wearable technologies on people with disabilities will be significant. Blind persons can use smart glasses to navigate both indoors and outside. Additionally, they can identify who they meet thanks to the face recognition feature. Additionally, the classes have the ability to read warning signs for the wearer and can forewarn them if they are in danger. It's possible that a brand-new industry may develop that will serve as the blind population's eyes. When a blind person needs to stop, a paid or unpaid volunteer can connect to the smart glass and assist the user with navigating the road and keeping them safe. People with disabilities will be one of the groups that wearable technologies have the most impact on. Blind users of smart glasses can navigate both indoors and outside. They may also identify people they encounter thanks to the face recognition feature. The wearer can be warned if they are in a risky scenario by the classes, who can also read the warning signs for them. It's possible that a brand-new market may develop into the blind people's eyes. When the wearer of the smart eyewear has to stop, a paid or unpaid volunteer can connect to the device and assist with navigating the road and keeping them safe. A sophisticated set of glasses could detect and change the voice for those who have trouble hearing.

Health: Wearable technology is most likely going to utilised frequently for health-related problems. Wearable technology may continuously check the indications of people's health. If something goes wrong, the device can instantly send a signal to the emergency services, communicate the patients' present state, and share the patient's precise position. In the future, the body of the patient may contain some unique wearable technologies that, in an emergency, might provide the patient with treatment. For instance, the wearable device will inject the appropriate quantity of insulin when the body's level of the hormone drops.

IV. CONCLUSION

As a result, wearable technologies have developed gradually alongside other modern technology like computers, sensors, GPS, Wi-Fi, electronic chips, and the internet. The consumer electronics, textile, and health industries are where wearable technologies are most commonly used.The aim of the study is to show how wearable technology will dramatically affect both people's daily lives and how businesses operate in the future. In conclusion, wearable technologies will make the future safer, simpler, healthier, quicker, and more enjoyable.

V. REFERENCES

[1].　　https://www.forbes.com/sites/forbesbusinesscouncil/2022/09/29/how-smart-wearables-are-shaping-our-future/