The Future and Past of Wearable Technology

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Abstract

As technology evolves, so does the way it is used. With the increasing popularity of wearable technology, smart devices have begun to integrate into every aspect of our life. Monitoring workout activity, steps and even tracking the user's heart rate is an essential part of a smart watch's functionality. But beyond just a smart watch, there is room for wearable technology to help us in our day to day routine.. Looking towards the future, it is predicted that wearable technology will become just as necessary and popular as an iPhone.

Introduction

Before examining the future of wearable tech, it is helpful to look into the past to see how much it has changed life already. Briefly understanding the history will allow us to understand the overall trajectory of wearable tech. Wearable tech dates all the way back to the 1950s, but the release of the Walkman in 1979 (1) was one of the most notable releases. The Walkman was a small device that could play audio. Most people carried their Walkmans in their pockets and used wired headphones to hear the music. The Walkman allowed people to be able to listen to music on the go for the first time, which was a totally new concept. Not only did the Walkman help push wearable technology mainstream, it completely revolutionized the music industry as well.

The 2000s also served as a defining time for wearable technology. Innovations like Bluetooth, the iPod and Fitbits were extremely popular. In the beginning, Bluetooth was mostly used for wireless headsets (1). Headsets allowed the user to take phone calls without having to hold the phone up to their ear for the entirety of the conversation, offering a more comfortable call experience and enabling the user to accomplish more while they talked. The iPod could be considered an improved version of the Walkman, allowing users to store more music directly on the devices instead of relying on cassettes. iPods were also much smaller and more portable than Walkmans, which in turn increased popularity as well as usage. The Fitbit was valued for its ability to accurately keep track of the user's daily activity and provided motivation for the user to stay active. The Fitbit showed the world that there was tremendous potential in using wearable technology to monitor health, paving the way for the modern, wearable technology that one could see now.

During the 2010s, the wearable technology industry exploded. Breakthroughs like the Google Glass in 2013, the Apple Watch in 2015 and the Oculus Rift in 2016 have shown that the potential for wearable technology is completely limitless. The Apple Watch being the most notable (as well as the most popular) innovation of wearable tech arising from the past decade. The Apple Watch uses bluetooth to connect the users mobile device to the watch. The Apple

Watch serves as an extension of the user's mobile device and allows the user to access the most essential parts of their mobile device quickly. The Apple Watch is full of practical uses that could help the user as they go about their day to day activities. The most recent Apple Watch provides accurate exercise tracking, music and phone capabilities, and even extensive health tracking features. The latest Apple Watch has an electrical heart sensor built in, allowing the watch to take accurate ECGs of the user's heart. This feature is especially notable because it shows that wearable technology has massive potential for healthcare. Perhaps in the future, one will look back on the Apple Watch as the first big breakthrough of wearable technology into the healthcare industry.

Technical

With the 2010s being the defining decade of wearable technology, the possibilities are now endless. Recent technological breakthroughs in AR/VR over the past few years will allow wearable tech and AR/VR to merge. From there, it is impossible to predict what the next big wearable tech breakthrough will be.

It is theorized that wearable tech will start to get smaller. The smaller the technology, the more powerful it will be (2). Clothing is an example where smaller tech could lead to more possibilities. Clothing companies like AiQ Clothing, Hexoskin and OMsignal are actively working on ways to blend tech with style (2). Hexoskin smart clothing is capable of monitoring continuous cardiac, pulmonary, activity & sleep data all using technology known as “textile sensors.” (5) The textile sensors send all data to the corresponding phone applications. This is a fantastic way for people to comfortably monitor their biometrics without having to change much of their daily routine. Another example of smart clothing is the Neviano Smart Swimsuit. This suit works similarly to the Hexoskin clothes by using textile sensors to detect UV levels (3). UV levels are harmful to our skin and can cause cancer, so for someone who spends a lot of time outside, it is important to be aware of the sun and know when it's the right time to put more sunscreen on.

Exoskeletons will transform industry. Exoskeletons are robots that you can wear, assisting in lifting heavy objects, construction and manufacturing (3). Exoskeletons are key to keeping workers healthy and safe by providing full body support, arm support and crouching support. The strain on the body of a manufacturer worker can be very intense, but exoskeletons will take off part of this load by providing more support (4). Arm support from exoskeletons will provide more grip strength, as well as acting as a third arm. With the strength and added utility provided by a third arm, the weight of most objects will be lessened severely. The productivity of workers will increase due to these wearables allowing them to do more in a less amount of time (4).

Conclusion

Wearable technology is not going anywhere. The data collected by these devices are proving to be insanely valuable. Tracking the little things in life such as how many steps you take in a day, UV exposure, heart rate and breathing activity has shown to pay off. Research has suggested that wearing an Apple Watch could add two years to your life (5). Taking a step back and looking at the overall trajectory of wearable technology shows that humanity has a lot to be hopeful for as wearable technology becomes more popular and accessible.

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