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The Future of Wearable Technology[1]

Wearable technology defines devices that can be worn on the body, are always on and constantly taking input from different sensors. Current examples include: the Nike Fuelband, Pebble, Apple's iWatch, etc. We are currently experiencing the early adoption phase of this technology; it will only be a matter of years until this technology becomes the new standard.

There are many forces driving the growth of wearable technology. Cloud computing, which is constantly becoming cheaper and faster, allows us to have even more context-specific solutions to our needs. Hardware that keeps on getting smaller and more powerful, increases the portability of the devices, meaning that we can have increasing computing power in even smaller gadgets. However these devices still need to overcome certain issues like the constant need for battery recharge, privacy concerns, and limited functionality.

This year alone, sales of wearable devices reached more than $4.6Bn. Credit Suisse predicts this number will surpass $30Bn by 2020 (see Appendix). This correlates to the increase popularity and acceptance of this technology by the average consumer. A survey conducted by April Modis found that 1 in 2 geeks would buy a smart gadget, but perhaps more interestingly, about 1 in 3 non-geeks were also interested in owning such a gadget.[2]

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[1] Original article by Jones, Scott. The Future of Wearable Technology. <http://www.inc.com/scott-jones/future-of-wearable-technology.html>. Dec 1, 2014.
[2] Modis. Americans Don't "Sneak Their Geek" According To Modis 2013 Geek Pride Day Survey. *Many Americans Want Wearable Technology.* <http://www.modis.com/about/press-room/2013/americans-dont-sneak-their-geek-according-to-geek-pride-day-survey> Dec 11, 2014.

With motion trackers, temperature sensors, speech recognition systems and skin sensors that keep on getting tinier and finer, we can expect to have even smaller and smarter devices as time goes by. *"Intel, Hewlett-Packard, Qualcomm, Bosch and Texas Instruments predict mobile sensor demand will rise from billions/year today to trillions/year by 2025."*[3] The Internet of Things will be a main driving force for this increased demand.

There will be 3 big main markets for wearable technology. One of them, and perhaps the most evident one, is the fitness, wellness and health sector. We already are seeing the first wave of devices that are entering this space. Smart shirts, socks that learn about ourselves, safer helmets are just a few examples. In medicine, we will be able to print chips into our own skin and reengineer our own DNA. As it becomes easier to integrate circuits into clothing, we will see even finer sensors and tracking devices in our everyday lives.

The entertainment and fashion sectors are also a projected market for this technology. Some early examples include dresses that can display Tweets and wristbands created by Disney that can track more than just movement. Bluetooth 4.0 will enable the development of an entirely new wave of devices that leverage on information provided by the surroundings.

Lastly, the military, one of the early adopters of wearable tech, will experience some improvements in wearable hardware and software solutions.

[3] Grady, Steve. Powering Wearable Technology and Internet of Things Devices. Cymbet Corporation: 2014. Print.

Smarter crews with cutting-edge technology covering every inch of their uniform and computers that can be worn inside the body will soon be a reality.

Interestingly enough, this technology could become so ubiquitous that it will not only be used by humans, but also by animals and plants. Imagine being able to track your dog's activity and vital signs by connecting a FitBit to his leg. A farmer's job will be made easier if he can quickly check his stock through an app on his phone. Plant's photosynthesis can be optimized to the maximum if we know the exact amount of nutrients, water and sun that they need at each moment of the day.

In conclusion, it is clear that the trend for wearable technology is not slowing down. Shipments of units (currently at 45 million per year) are expect to increase ten-fold in the next 5 years (see Appendix). We can expect devices with better design, improved interfaces and increased functionality within the next decade. We will have more access to our data and we will be more connected than ever. Wearable technology might just be the successor of our beloved smartphones and personal computers.

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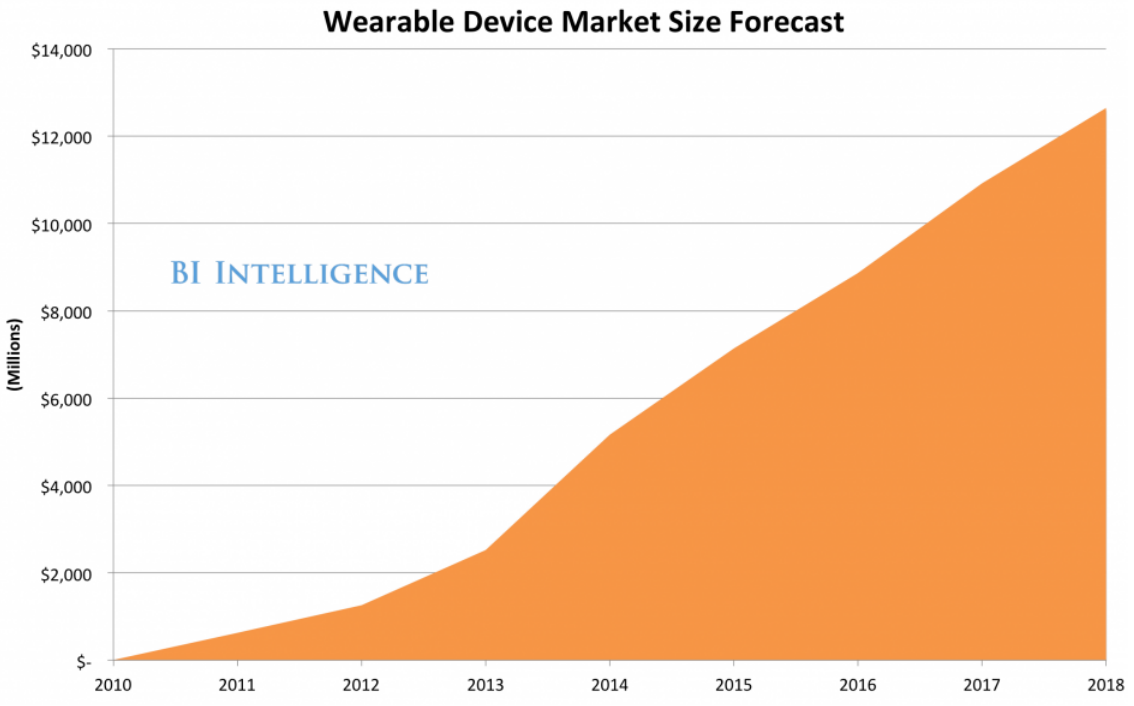
APPENDIX



Source: BI Intelligence estimates, ABI Research, IMS and Juniper

Wearable Technology Market - Worldwide

Unit Shipments (Millions) 29-Jan-14

	2014	2015	2016	2017	2018
Smart Glasses	0.8	4.5	9.8	23.4	47.8
Smart Watches	8.9	35.3	75.0	133.3	214.3
Fitness & Activity Trackers (1)	21.2	25.6	32.8	43.8	57.8
Heart Rate Monitors (2)	15.0	16.4	17.5	17.9	17.6
Total:	**45.9**	**81.8**	**135.1**	**218.5**	**337.5**

(1) Includes new fitness monitors such as Fitbit Force, Withings Pulse, Basis B1 Band, Nike and Polar Loop – plus all heart rate monitors, pedometers and sports watches.
(2) Primarily consisting of products that require the user to wear a chest strap, these devices are aimed at two quite different market segments: (i) Serious athletes : this segment includes professional and amateur athletes who are engaged on a structured training programme; (ii) Leisure users: those who exercise mainly for recreational reasons and for whom a heart rate monitor offers mainly novelty benefits.

Source: Generator Research Download data in Excel:
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Source: Generator Research