The Investment Case for Wearables

Executive Summary

Wearable technology devices are mobile electronics that can be worn on a user's body or attached to clothing for applications such as: Sports and Fitness, Industrial/Military, Infotainment/Lifestyle, and/or Healthcare and Medical. Examples of wearable devices include: activity trackers, smart watches, smart glass, body cameras, health monitors, virtual reality headsets, hearables, and wearable industrial computers. There are many reasons that wearables may be attractive from an investment standpoint. Global analyst MarketsandMarkets[1] estimates the global wearables sector will grow in size from $23 billion today, to $173 billion in 2020. Wearable devices seamlessly integrate computer and monitoring functionality, providing easy and reliable access to immediate information, acting as an "untethered" gateway to the Internet of Things. It is no wonder that according to Forrester Research[2], 76% of global tech and business leaders have wearables on their agenda as a tool to harness data and enhance customer interaction. When it comes to the enterprise market, Forrester expects wearable adoption to go "mainstream" from 2017 to 2019 and to move to "business centrality" from 2020 to 2024.[3]

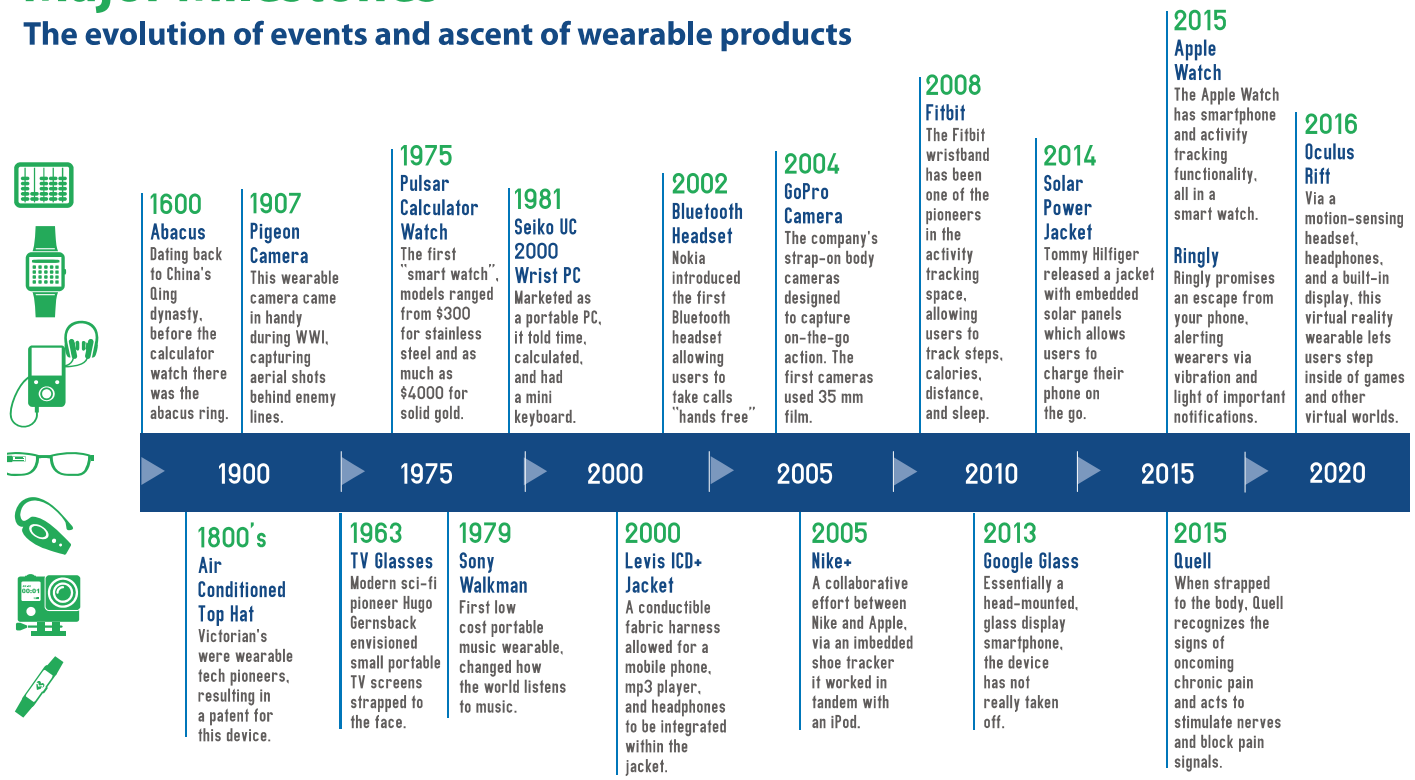
A Brief History of Wearables

Wearable devices such as activity trackers, smart watches, body cameras, and virtual reality headsets have taken the consumer market by storm, with a multitude of devices available for purchase. But how did it all begin?

Humans have always adorned their bodies with gadgets, for show, utility or both. The history of wearable technology is littered with many commercial failures, but also some groundbreaking commercial successes. While the air-conditioned hat, Pulsar calculator watch, and Levi's ICD + Jacket never took off, the Sony Walkman portable music player was a huge commercial success in 1979, paving the way for other music players such as Apple's iPod in 2001. Fitness trackers have been one of the most popular consumer wearables in recent years, tracking steps, speed, heart rate, and sleeping patterns. Body cameras have also gained popularity among consumers and have gained commercial acceptance among law enforcement.

[1] 2016 UPS Pulse of the Online Shopper https://solvers.ups.com/assets/2016_UPS_Pulse_of_the_Online_Shopper.pdf
[2] David Bolton, "Why 2016 Will Be the Year of the Wearable" https://arc.applause.com/2015/12/12/wearables-mass-adoption-2016-forrester/
[3] Charles McLellan, "The History of Wearable Technology: A Timeline", http://www.zdnet.com/article/the-history-of-wearable-technology-a-timeline/

Here's a brief timeline highlighting some of the historical milestones that paved the way for modern day wearables technology:



Source: Visual Capitalist, Wikipedia

Value Proposition

Certainly, one of the driving forces behind the growth of wearable technology are the valuable benefits these devices provide across many business segments.

Sports and Fitness Wearables

These wearable devices intersect fitness and technology. Shirts, socks, shoes, helmets, and wristbands can be used to gather data to enhance levels of fitness and sports performance. With the increasing desire of individuals wanting to be able to assess their health and fitness, this segment of the market is expected to be valued at $44.2 billion by 2021.[4]

[4] Radiant Insights, http://www.marketwired.com/press-release/smart-wearables-sports-fitness-market-worth-442-billion-2021-radiant-insights-inc-2091903.htm

Industrial and Military Wearables

Wearable devices have many uses in the industrial and military segments. Wearable industrial computing devices are used for inventory control, security identification, and remote support, transmitting data in real-time. The military and police also use connected wearable devices like body cameras, night vision goggles, mini portable computers and telephony, and virtual reality headsets. Applications include improving aim capability, monitoring the physical state and location of soldiers or officers on the move, better mobile communication, and 360-degree environment awareness. There is no doubt that the soldier and law enforcement office of the future will definitely be using wearable devices.

Infotainment and Lifestyle Wearables

The infotainment and lifestyle category of wearables includes smart watches, smart glasses and virtual and augmented reality headsets. Applications include communication, real-time streaming of information, and interactive gaming. The burgeoning virtual reality category is one of the most exciting areas of wearable technology. Companies such as Facebook (Oculus Rift), Samsung, Microsoft, and Sony are all investing heavily into virtual reality headsets. These products are just debuting on the consumer side and are expected to create a $2.8 billion hardware market by 2020.[5] Beyond gaming, VR is expected to become an important platform for streaming content and even online shopping.

Healthcare and Medical Wearables

Wearable medical technology is one of the most promising markets for wearables. Wearable body sensors can collect vital health data which in turn can be analyzed and accurately communicated to patients, caregivers, and doctors. Medical wearables such as continuous glucose monitors (CGMs) and insulin pumps have helped transform the lives of many diabetic patients. Another promising health application for wearables is in the area of biomechanics and kinesiology. Professional athletes can monitor their muscle mechanics under different loads and exercises, and help prevent injury. Other wearable devices administer medication, monitor cardiac and respiratory function, and manage pain. There is even a medical watch that can help predict and prevent epileptic seizures. As diagnostic capabilities become more and more advanced, there is the potential that a wearable bra could detect cancer or that a heart-monitoring wearable device could warn of, and thus prevent, an impending heart attack. Given this promise, it is no wonder analysts consider medical wearables to be the most lucrative and promising application for wearables devices, expecting medical wearables to take a large share of the global wearable device market.

[5] Business Insider, http://www.businessinsider.com/virtual-reality-headset-sales-explode-2015-4

The following table summarizes some of the products included in each wearable technology category:

Wearable Applications	*Product Categories*
Sports and Fitness	• Activity Monitors • Performance and Heart Rate Monitors • Pedometers • Smart clothing and equipment
Industrial/Military	• Hand-worn terminals • Heads-up displays • Smart clothing • Body cameras • Smart glasses • Virtual reality headsets
Lifestyle and Infotainment	• Bluetooth headsets • Headphones • Smart watches • Smart glasses • Virtual reality headsets
Healthcare and Medical	• Blood pressure monitors • Continuous glucose monitoring • Defibrillators • Drug delivery • ECG monitors • Hearing aids • Insulin pumps • Patches • Personal emergency response systems (PERS) • Pulse oximetry

Growing Global Opportunity

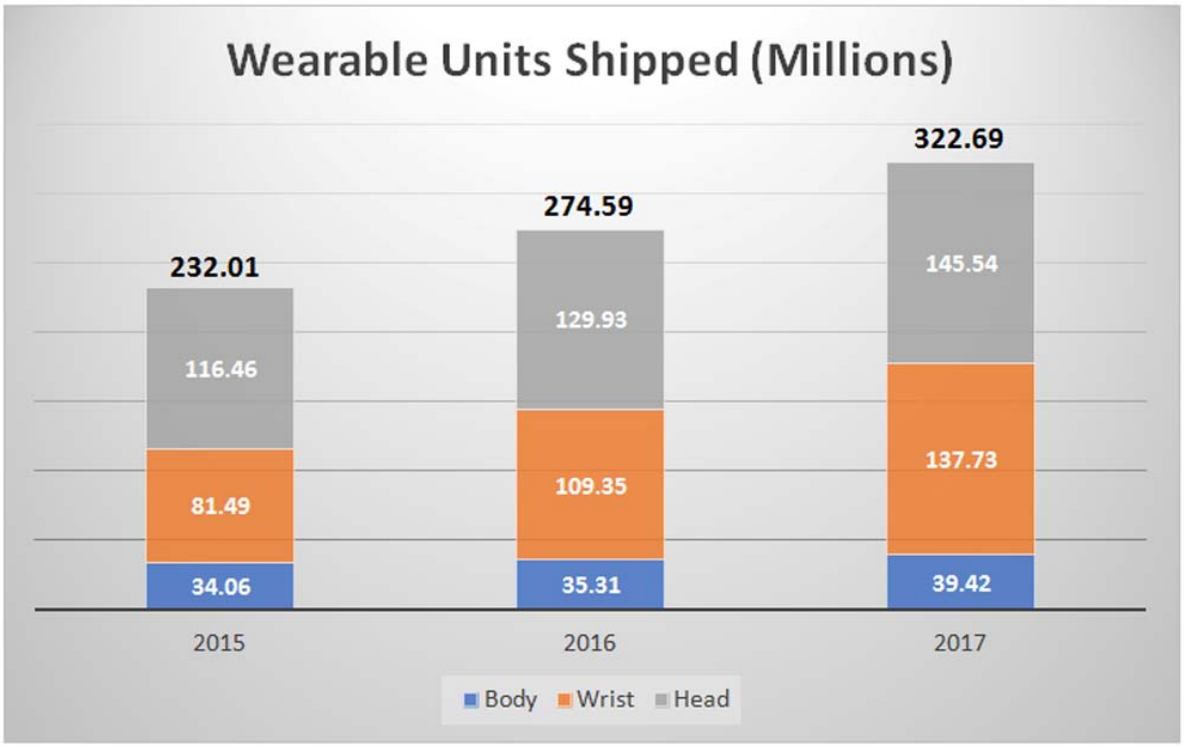
Companies are investing heavily into wearable technology. Global analyst MarketsandMarkets projects the global wearables sector will grow from $23 billion today to $173 billion in 2020.

Source: Gartner, MarketsandMarkets, UPS

One of the drivers behind this growth is the emergence of "wearables 2.0", the second generation of products which mark the shift in the category from stand-alone devices to life-enhancing systems which tie together multiple connected devices and the cloud. In essence, wearable devices will become the gateway to the Internet of Things. While market-measurement companies have varying growth projections, they all agree that the market will grow at a double-digit pace.

Gartner expects unit shipments to grow by 17.5% in 2017 to 323 million units worldwide.[6] Gartner expects wrist wearables to experience the highest growth, followed by wearables worn on the head. Wearables for the body, including apparel, sportwear, and body cameras will experience the slowest pace of growth.

[6] Fung Global Retail and Technology, June 21, 2016
https://www.fbicgroup.com/sites/default/files/The%20Wearables%20Report%202016%20by%20FBIC%20Global%20Retail%20and%20Technology%20June%2021%202016.pdf



Source: Gartner

Other forecasts appear more conservative due to definitional issues about what constitutes a wearable. IDC estimates 110 million units shipped in 2016, an increase of 38.2% YOY. Its forecast for 2017 is for 137.8 million units, translating into growth of 26.1%. IDC's market research is focused on the consumer categories such as fitness bands, smartwatches, apparel, and hearables.

The wearable device supply chain includes companies that develop microprocessors, sensors, software, connectivity, and displays.

Investment Case

The global growth potential and the diverse set of opportunities in wearable technology make a compelling argument for investment in this space. The verdict on who will be the winners and losers in the wearables technology space is still out. Wearable device companies such as GoPro (GPRO) and Fitbit (FIT) are both trading below their IPO prices.

Without a clear use case for smart watches, which have more features than fitness trackers, but significant overlap with smartphone functionality, the first generation of smart watches have not caught on as quickly as expected. Year-over-year growth for the category slowed to just 3.1% in the third quarter of 2016.[7]

[7] Market Realist, http://marketrealist.com/2017/01/slowing-wearable-market-impacted-fitbit/

Top Five Wearable Device Vendors, Worldwide Shipments, Market Share and Year-Over-Year Growth, 3Q 2016 (Units in Millions)					
Vendor	**3Q16 Unit Shipments**	**3Q16 Market Share**	**3Q15 Unit Shipments**	**3Q15 Market Share**	**Year-Over-Year Growth**
1. Fitbit	5.3	23.0%	4.8	21.4%	11.0%
2. Xiaomi	3.8	16.5%	3.7	16.4%	4.0%
3. Garmin	1.3	5.7%	1.2	5.3%	12.2%
4. Apple	1.1	4.9%	3.9	17.5%	-71.0%
5. Samsung	1.0	4.5%	0.5	2.4%	89.9%
Others	10.4	45.3%	8.3	37.0%	26.1%
Total	**23.0**	**100.0%**	**22.3**	**100.0%**	**3.1%**
Source: IDC Worldwide Quarterly Wearable Device Tracker, December 5, 2016					

While certain segments of wearable technology slowed in 2016, the overall market for wearables remains robust. The smartwatch is not likely to usurp, or replace the smartphone any time soon, but it still fulfills a product niche. Not everyone wears a watch after all. And the category has demonstrated strength in other parts of the world. Wearables, including smartwatches, activity trackers and fitness bands, are on pace to dethrone tablets as the second most popular mobile device in China in 2017.[8]

The first generation of consumer wearables have failed to successfully integrate function and fashion, but the next generation of products will ultimately get that balance right. In the future, the most exciting wearables will not look like computers, they will look like what you are wearing now.[9] Many new products are coming on board that will transform the way we think about wearables.

- Smart headphones are being transformed into hearables.
- VR and AR headsets are becoming compact enough to spur mobile adoption.
- Fitness trackers will become more accurate, have more features, and improved user interfaces.

[8] Business Insider, http://www.businessinsider.com/wearables-could-surpass-tablets-in-china-2016-12/
[9] David Pierce, "Goodbye, Wearables. You Had a Stupid Name Anyway" https://www.wired.com/2015/12/goodbye-wearables-you-had-a-stupid-name-anyway/

- Failed implementations of wearable technology such as Google Glass, will become the inspiration for future innovation and improvement. For example, Lenovo has created a version of the product for remote technicians such as computer repair workers, electricians, and plumbers.[10]
- And finally, consumer wearables represent only a limited subset of the wearable device universe. There is huge potential for growth in other areas of wearables such as health monitoring and military and industrial use.

Wearable technology, like any emerging technology, is adapting and transforming. There will be winners and losers along the way. But those that get it right, will be handsomely rewarded for seamlessly providing untethered, integrated access to the Internet of Things.

Investment Exposure

Investors wanting to gain exposure to the investment theme of wearables can invest directly in individual wearable companies or invest instead in a diversified basket of wearable stocks.

The EQM Wearables Index tracks the combined performance of a basket of global stocks that derive revenue from the sale of wearable technology devices for applications in: Sports and Fitness, Industrial/Military, Infotainment/Lifestyle, and/or Healthcare and Medical OR derives revenue from the manufacturing of components used in wearable devices such as semiconductors, sensors, and displays. The index is equally weighted among two investment pools: Core and Non-Core wearable holdings.

Core wearable holdings are defined as companies that derive significant revenues (as defined by EQM Indexes, the Index Provider) from the sale of wearable devices. These companies receive a 1.5X weighting in the Index. Companies deriving only minimal revenue (as defined by EQM Indexes, the Index Provider) from the sale of wearable devices and/or who are engaged in the manufacture of wearable components are equally weighted, receiving a lesser weight.

Examples of Core Holdings in the Index as of 12/31/16 include:

- **IRhythm Technologies (IRTC)** – manufactures an ECG monitoring wearable which combines biosensing technology with cloud-based data analytics.
- **TomTom (Tom2 NA)** – Netherlands manufacturer of fitness tracker wearables.
- **Biotelemetry (BEAT)** – manufacturer of ambulatory cardio monitoring devices.
- **GN Store Nord A/S (GN DC)** – Danish manufacturer of intelligent audio solutions such as smart hearables and headsets.
- **Adidas AG (ADS GR)** – German manufacturer of sports apparel and equipment including sports wearables.

[10] Wearables Not Dead: Lenovo Means Business With New Glass Device http://seoland.in/wearables-not-dead-lenovo-means-business-with-new-glass-device/#.WHl72KPruUk

Conclusion

In summary, in our view there are many reasons to own a basket of global stocks directly focused on wearable technology.

- Wearables devices integrate computer and smart monitoring functionality, serving as an untethered gateway to the Internet of Things.
- There are diverse use cases and broad set of opportunities for wearables in the areas of Sports and Fitness, Industrial and Military, Lifestyle and Infotainment, and Healthcare and Medical.
- As wearable technology is seamlessly integrated into our daily lives, combining both function and fashion, the adoption of wearables will accelerate and become mainstream.
- The global wearables sector is expected to grow in size from $23 billion today, to $173 billion by 2020.

Definitions

Wearables – Mobile electronic devices that can be worn on a user's body or attached to an article of clothing.

Internet of Things (IoT)- is the network of physical objects or "things" embedded with electronic devices, software, sensors, and network connectivity, which enables these objects to collect and exchange data.

Virtual Reality (VR) Headset - is a device that you wear over your eyes like a pair of goggles. It blocks out all external light and shows you an image on high-definition screens in front of your eyes.

Augmented Reality (AR) - is a live direct or indirect view of a physical, real-world environment whose elements are *augmented* (or supplemented) by computer-generated sensory input such as sound, video, graphics or GPS data.

About EQM Indexes

EQM Indexes, LLC ("EQM Indexes") is a woman-owned firm dedicated to creating and supporting indexes that track growth industries and emerging investment themes. Co-founded by Jane Edmondson, a former Institutional Portfolio Manager with more than 24 years of investment industry experience, EQM Indexs' index designs spans a wide range of asset classes and financial instruments. EQM Indexes does not provide investment advice, nor offer the sale of securities, but does partner and receive compensation in connection with licensing its indices to third parties to serve as benchmarks for Exchange Traded Products ("ETPs"). All information provided by EQM Indexes is impersonal and not tailored to the needs of any person, entity or group of persons. It is not possible to invest directly in an index. EQM Indexes makes no assurance that investment products based on the index will accurately track index performance or provide positive investment returns. Inclusion of a security within an index is not a recommendation by EQM Indexes to buy, sell, or hold such security, nor is it considered to be investment advice. While EQM Indexes has obtained information from sources believed to be reliable, EQM Indexes does not perform an audit or undertake any duty of due diligence or independent verification of any information it receives.

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