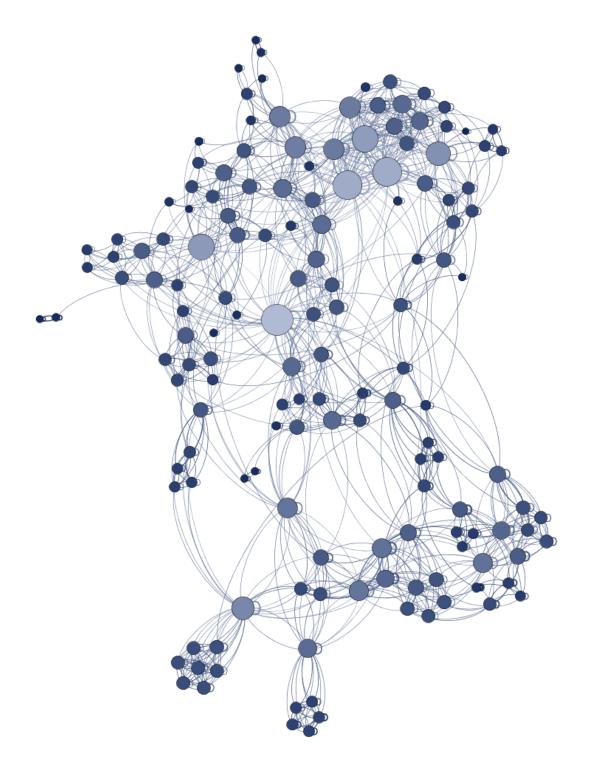


## WEARABLES MARKET INSIGHTS

**1st Quarter, 2014** *Vandrico Solutions Inc.* 

# Vandrico



This image is a visual representation of Vandrico's Wearable Device Database. Each node is a wearable device and the connections represent similarities.

THE WEARABLES MARKET SUBSECTORS ARE EVOLVING.

## **WEARABLES MARKET INSIGHTS: Q1.14**

#### INTRODUCTION

The term "wearable technology" has had an explosive rise in both mainstream consumer interest and enterprise-level planning discussions. Over the past 12 months, we have seen a 588% growth in monthly Internet searches from Google alone. Both device manufacturers and future enterprise customers are taking notice, but there seems to be much ambiguity on how to benchmark and understand this emerging sector.

This report is written for companies and investors within the wearable technology sector. The purpose of this report is to provide a more detailed understanding of devices that should be considered and to give readers a snapshot overview of the competing fundamentals of the sector. The team at Vandrico has compiled the most comprehensive database of wearable devices available on the Internet from which it has drawn all of the information for this report.

#### DATA COLLECTION METHODOLOGY

The wearable technology database available to the public was compiled by the efforts of the entire Vandrico team. Data was collected using the following methods:

- File Patents
- FCC Filings
- Manufacturer Website
- Direct Contact with Manufacturer for Data Verification

Devices that are included in the database must meet all of the following criteria:

- 1. The device must be worn, not carried. Devices that clip on to clothing are acceptable.
- 2. The device must compute with user inputs and control. This can be passively controlled, defined as collecting input data without conscious interactions by the user, or actively controlled, defined as collecting input data with conscious interaction by the user.
- 3. The device must augment knowledge, facilitate learning or enhance the user's experience.

#### SAMPLE SIZE AND ACCURACY

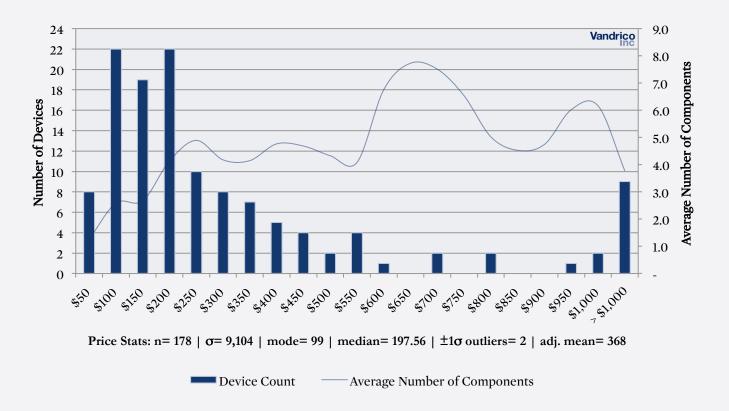
Vandrico has taken every measure to ensure the accuracy and completeness of its database. Given the rapid developments of the sector and its evolution in understanding, the database is expected to continue to grow both in size and data availability. At the time of this report, information for 178 wearable devices was collected and analyzed. The reader is advised that this database may not be a collectively exhaustive list for the sector, but it should give an accurate representation for benchmarks.

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#### WEARABLE TECHNOLOGY PRICING STRATEGIES

Two competitive forces are currently affecting the pricing strategy for wearable devices: the threat of new entrants and consumer bargaining power.



The relatively recent introduction of crowdfunding has significantly lowered the barrier to entry for new and emerging startups. Consumers are also showing an appetite for innovation; 5 of the top 10 funded Kickstarter campaigns were wearable devices. The combination of crowdfunding and recent popularity of wearables in the media means that there is an increased threat to companies already operating in the space; the possibility for new entrants in the market are highly probable. As crowdfunding both reduces the barriers to entry and validates market potential, investors can partner with startups to offer attractive price points and compete with much larger and more established companies. A large potential for growth also makes the wearable technology sector an even more attractive market to enter.

The distribution of devices with the most competition currently falls under \$300 retail, with 89 devices (70%) available. Larger companies may utilize economies of scale to as a potential advantage, trying to reduce manufacturing costs with larger production runs and compete on cost. However, since the elasticity of consumer demand has not yet been determined, competing on price may not be effective.

Consumers are interested in maximizing the ratio of a product's perceived value relative to its price. For two products of similar function and perceived value, the price may be the determining factor in a consumer's purchasing decision. Vandrico has noted that perceived value is not solely based on a product's componentry and quality. A significant portion of a product's perceived value comes from how the product is marketed to consumers as well as brand loyalty. Marketability has become a differentiating factor with competitive benefits,

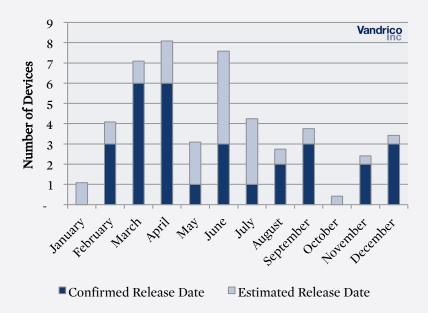
resulting in a control over the product's perceived value. This is especially evident in crowdfunding campaigns as two similar devices with almost identical componentry have resulted in considerably different funding amounts.

Our analysis has shown that consumers now hold the bargaining power and appealing to their perceived benefits have demonstrated success.

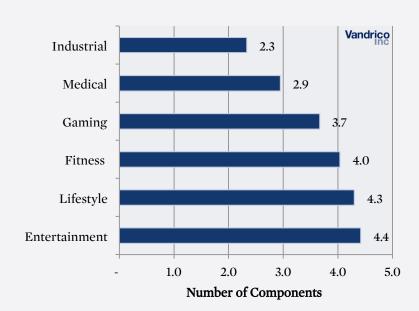
#### 2014 RELEASE DATES FOR WEARABLE DEVICES

Vandrico expects 48 (27%) of devices in the database to be released in 2014 and has identified that trade shows are a catalyst for driving the expected product launch date. Scheduling a release within two months following the tradeshow allows for ample time for these new devices to be covered by the media, yet doesn't wait until the news becomes stale. Benchmarks that have been noticed are the Consumer Electronics Show (CES) in January, the Mobile World Congress (MWC) in February, and the Wearable Tech Show (WTS) in March.

Although attaching to major trade shows has been strategically relevant, the density of products found at these trade shows are



starting to affect an individual product's visibility. Depending on the company and the device being marketed, it may be strategically more beneficial to release a device in the months that have less competition.



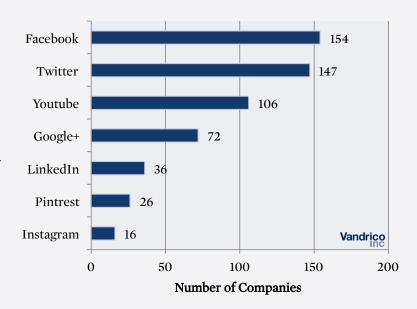
#### COMPONENT USAGE

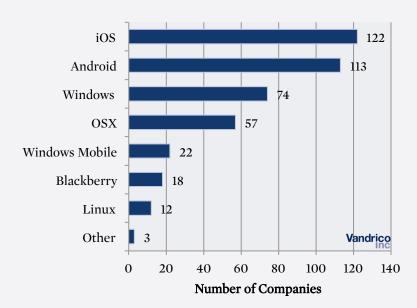
The average number of components per device trends upward towards categories with the most number of applications. Since medical and industrial devices tend to have very specific applications, the componentry needed must fulfill a narrow bandwidth of tasks with a higher degree of precision. Therefore, the components observed have been much more specialized and at a higher cost. To the contrary, devices geared towards lifestyle and entertainment host a wide array of applications and uses. Additionally, the components used are far less accurate and less expensive.

#### **SOCIAL MEDIA USAGE**

Social media is less than a decade old, yet it is rapidly evolving as a powerful marketing tool. 154 (86.5%) wearable device companies use Facebook and 147 (82.6%) use Twitter.

Notably, YouTube and LinkedIn host unique audiences which wearable device companies can take advantage of. YouTube serves as a repository for company promotional videos and can offer consumers a great deal of insight into a company and their products. LinkedIn provides a unique opportunity for a company to garner interest in a more professional community environment. Although Google+ may not be the most popular, Google has made a persistent effort to integrate its social media platform into other popular Google products, such as Youtube.





#### **DEVICE COMPATIBILITY**

When it comes to device compatibility, iOS and Android are leaders in the market. With Google's recent announcement of the "Android Wear" operating system, we expect to see more devices built with Android compatibility.

It comes, as no surprise, that support for mobile operating systems is a first priority. Wearables have taken the form of an extension of the mobile market. Support for other mobile operating systems is lagging significantly with Windows Mobile and Blackberry falling far behind competitors.

#### SHORT TERM SECTOR OUTLOOK

Firstly, Vandrico expects to see more new competitors enter the market from larger and established brand names. It is anticipated that these companies will compete with devices for proven markets, such as head mounted displays, fitness trackers, and smart watches.

Secondly, Vandrico expects to see innovation from startups as they explore the boundaries of the wearable tech market with unique combinations of hardware components and the beginning of a push towards medical accuracy. It is also anticipated that crowdfunding projects will not slow this year.

Lastly, Vandrico expects to see the emergence of workplace wearables. The hardware capabilities are there and enterprises are taking note. It is anticipated that we will see Smart Safety Glasses announced by the end of 2014.

#### MEDIUM TERM SECTOR OUTLOOK

Vandrico expects to see an explosion of medical wearable devices that are designed to assist doctors with diagnosing diseases. Medical professionals will be able to obtain continuous data by monitoring basic vital signs, such as heart rate, blood pressure, skin temperature, and blood oxygenation. Perhaps more significantly, a continuous recording of data will give the medical industry a greater understanding of the effects of prescribed treatments. Patients will also be able to concretely observe how their lifestyle choices affect their overall health. Adding gamification or other custom behavioural software can assist in improving the lifestyle choice of a user.

Currently more than half of the devices on the Vandrico Database contain inertial measurement units (IMUs) (accelerometers, gyroscopes, and/or magnetometers). Large portions of these devices are using IMUs to track activity levels and infer the number of calories burned. Even with advanced algorithms that take age, height and weight into consideration, it is impossible to accurately determine calories burned from a device that is worn on a single part of the body with only an IMU. Since placing multiple fitness trackers on the body is not an ideal solution, including heart rate monitors and temperature sensors within fitness trackers would greatly increase accuracy while producing additional information for the user. Vandrico expects to see these components to become part of the standard for fitness monitors.

#### LONG TERM SECTOR OUTLOOK

The wearable technology concept has a very bright future ahead of it. We are all inundated with information; the Internet surrounds us and permeates every aspect of our lives. With such a vast repository of seemingly infinite information, it is only natural to evolve and seek to be closer to superior knowledge. Is there a better way to integrate ourselves with computers than to put them where they feel the most natural, on our bodies?

In the past we have relied upon artificial means for interfacing with computers. We invented computer peripherals like the keyboard and mouse, simply to utilize its abilities. In the future, Vandrico anticipates that humans will begin to interact with computers in the same ways that we interact with other humans: speech, gestures and expressions. Computers are currently viewed as a separate physical object with which we interact. The current trend in wearable technology is implying that the computer may evolve into a passive entity alongside the user physical body. Its presence may shift to become unnoticed.

Eventually, we may reach a point where device implantation is not only possible, but could become advantageous. Obtaining continuous blood testing for trace elements, proteins, hormones, and pathogens would completely revolutionize nutrition and health care. The life expectancy of the average person will jump dramatically as we identify diseases earlier and can begin treatment almost immediately.

Google is leaps and bounds ahead of the market with their glucose monitoring contact lens. The benefits derived from that technology alone could mark a new era worth watching.

### **ADDITIONAL INFORMATION**

#### **FURTHER INQUIRES**

Vandrico has simplified its analysis for this report and has chosen to include a small sample of charts and data. For further information, or clarification, please contact us using the information below and a member of the team will be happy to assist you.

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#### WAS THIS REPORT HELPFUL?

The wearable technology database has become a useful tool for many friends in the industry. The team at Vandrico drew a small sample of information from the database to create this report. Now, we're asking for your feedback to help make it better.

We would love to hear from you regarding the following:

- What information helped you in this report?
- What information could add value to your team?
- Would you like to continue to receive this report every quarter?

## http://vandrico.com/survey/rpt2014q1

#### DO YOU HAVE ANY SPECIFIC NEEDS?

Our clients are always asking us new and challenging questions, from "how should we approach detecting injuries" all to way to "how can my workers be more productive". Whatever questions on concerns you may have, we're here to help.

To book a free call with one of our representatives, please visit the following page:

http://vandrico.com/connect\_now



## Did You Know... Wearable technology has a long history dating back as far as the 17th century. The Qing Dynasty was the first to miniaturize the abacus and place it on a ring. Centuries later, the first wristwatch was made for the Queen of Naples in 1810. It wasn't until 1961 when computing power was introduced to a shoe that wearable technology really started to take off. The "gambling shoe" was used to calculate better odds and cheat the roulette table. It took months for casinos to catch on and catch the culprits. Today, we are seeing the Fortune 500 race to wearable technology. Companies like Nike, Samsung, Google and more are all trying to capture the new market. As with the SmartPhone boom, the natural progression for this market is to generate an ROI for businesses.

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