

Ticking "Tim" Bomb or Bonanza?

Intellectual Property Analysis of Apple's Smartwatch

September 12, 2014

On September 9, 2014, Apple CEO Tim Cook unveiled the new Apple Watch[™]. Although it is similar to smartwatches currently in the market, the September 9 event generated a great deal of market commentary. In a world where ownership of ideas can make or break a new product launch, we wanted to examine where Apple stands with respect to the intellectual property for their "bold" new venture.



In 2011, Apple filed an application for a design patent which was dubbed "iTime" in the drawings submitted by Apple's lawyers.¹ US Published Patent Application No. 20120194976 details an electronic wristwatch which is also a mobile device. When the story of this application was picked up by technology reporters, there was speculation as to its features and if its popularity could rival the iPhone.

An early version of a smartwatch (discounting cartoons and TV fantasies), the Seiko Data 2000, debuted in 1983. It came with a detachable keyboard and was compatible with PCs. In 1985,

Figure 1. Apple unveils the Apple Watch Sept. 9, 2014 Source: time.com

Seiko Epson released the RC-20 Wrist Computer which had 2 KB of RAM and was touch sensitive. In 2000, IBM debuted a

watch which had Bluetooth functionality and a fingerprint sensor. What constitutes a "smartwatch" is not clearly defined and a few of us can remember when the smartest watch was the wrist calculator you could sneak into an algebra exam... until you got caught. Then it became the dumbest watch ever! Clearly, the idea of the smartwatch has been around for some time and the idea of integrating it with wireless capabilities is an also-ran.

Companies and individuals – buoyed by marketing hype and courtesy of an accommodating patent office – are still filing and receiving patents for smartwatches in the hopes that consumers will finally be interested in a wristwatch that is more than a wristwatch. Google's Android Wear[™] was made available this year in the form of Moto 360, LG G Watch, and GALAXY Gear. Other forms of smartwatches are made by Sony[®], Pebble, Martian[™], and Casio[®] G-SHOCK.

According to a 2013 survey only 3% of respondents in the UK and the US have and use a smartwatch. 2% of respondents own one but no longer use it.² Apple certainly knows how to create market hype for a product. It remains to be seen if the September 9 event will create long-lasting demand for smartwatches or whether it will fail to stand the test of time.

Analysis

Using our commercial intangible asset underwriting systems, M•CAM endeavored to discover which companies could effectively control the smartwatch market with their IP portfolios. Approximately 5,000 patents from 1920 to 2014 relate to wearable electrical devices. About 30% of those patents are already abandoned, expired, or have been disallowed. Depending on the intersection between those patents' claims and the feature and designs that are included, some of the smartwatch innovation space could be

¹ http://gizmodo.com/itime-smartwatch-patent-shows-apples-broad-ambitions-1608839291

² http://www.ccsinsight.com/press/company-news/1957-clear-marketing-needed-to-drive-sales-of-smartwatches-and-fitness-trackers

part of a robust Freedom-To-Operate space while other features may run headlong into a patent minefield.

For the past 20 years, there have been about 160 smartwatch or wearable wrist electronics devices patents filed each year. Four representative documents which exemplify this innovation space can be found in the table below.

Document #	Title	Assignee Name	Priority	File	Issue
US 8,279,716	Smart-watch including flip up display	Google Inc.	26-Oct-11	26-Oct-11	2-Oct-12
US 6,757,389	Wrist-mounted telephone device	Classicom, LLC	19-Dec-96	1-Oct-99	29-Jun-04
US 6,459,890	Watch type portable radiotelephone	Samsung Electronics, Co., Ltd.	27-Nov-98	29-Nov-99	1-Oct-02
US 5,260,915	Wristwatch radiotelephone	Timex Corporation	16-Oct-92	16-Oct-92	9-Nov-93

Smartwatch Innovation Space

The chart below indicates the companies with the largest amount of maintained patents in the smartwatch and wrist-wearables space.



Nokia, Motorola, Sony, Microsoft, Apple, Samsung, LG, Google, and Sharp are all currently active in creating smartwatches or software for these devices. Nike and Pelikan Technologies both produce devices which monitor the biometric information of the wearer.

Unfortunately, not all issued patents are novel and non-obvious. Of the approximately 3,500 worldwide issued and maintained patents in the smartwatch innovation space, we focused on the 1,900 United States issued patents and commercially scored them. This assessment measured the commercial strength and transferability of each patent. Commercial patents may be linked directly with cash flows and may have a basis for licensing. Non-commercial patents have little chance of being licensed, lack market relevance, or are direct liabilities to the holder due to prosecution impairments.

The five companies with the most significant holdings of commercial patents in the smartwatch space are Sharp, Sony, Nokia, LG, and Microsoft.

The five companies with the largest amount of non-commercial patents in the same space are Pelikan Technologies, Microsoft, Digimarc, Apple, and Micron Technology.

It's important to note that while Nokia's patents give them strong access to the smartwatch market, these patents may now belong to Microsoft or Microsoft may already license them.³

As for Apple's issued patents on smartwatches, their efforts picked up in earnest in 2005. About five percent of their patents score as commercially important while 95% are unlikely to withstand market scrutiny. Tim Cook's "bold" announcement (we're still not sure what makes a telephone and a time-piece bold in the minds of the media) may wind up some old adversaries. Who knows whether Microsoft, Sharp or Sony will sit in wait to see if Apple's watch actually succeeds where others have failed? Only boring old analog time will tell.

For a more detailed examination of the patents mentioned in this report, please contact us at patentlyobvious@m-cam.com.

³ http://www.m-cam.com/patently-obvious/microsoft-and-nokia-additive-or-redundant

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M.CAM's Patent Glossary

Aligned Sector: The business sector in which the product(s) resulting from the patent(s) is currently or intended to be sold.

<u>Applicant</u>: The person or corporation that applies for a patent with the intent to use, manufacture or license the technology of the invention; under U.S. law, except in special situations, the applicant(s) must be the inventor(s).

<u>Application</u>: Complete papers submitted to the U. S. Patent and Trademark Office seeking a patent including oath, specification, claims, and drawings. This usually does not signify a Provisional Patent Application, but only a regular patent application.

<u>Art</u>: The established practice and public knowledge within a given field of technology. This also identifies a process or method used to produce a useful result. A term used in consideration of the problem of patentable novelty encompassing all that is known prior to the filing date of the application in the particular field of the invention.

<u>Assignee:</u> The person(s) or corporate body to whom the law grants or vests a patent right. This refers to the person or corporate entity that is identified as the receiver of an assignment.

Business Method

- Patent: A patent that controls the way a business process is undertaken. The issuance of these patents by the United States Patent and Trademark Office (USPTO) is new and controversial, since many allege that it is unfair to allow a patent on a way of doing business.
- <u>Citation</u>: This may include patents or journal articles that the applicant or examiner deems relevant to a current application. A reference to legal authorities or a prior art documentation are examples of a citation.

<u>Claim</u>: The language in a patent application that defines the legal scope of the patent. Most patents have numerous claims. This is typically the single most important section in the application.

<u>Concurrent Art</u>: Concurrent art occurs when related patent applications are being examined by the USPTO at the same time. It is difficult for any company or inventor to know, at the time they file for a patent, whether a "related" patent application exists.

- Filing Date: The date when a properly prepared application reaches the patent office in complete form.
- Innovation Cycle: A description of the commercialization timeframe for the intellectual property.
- Innovation Space: M-CAM's representation of the innovation(s) that occur before, during, and after the pending period of the subject patent. The innovation space is the first place to look for patents that are closely related to the subject patent and that may impact the defensibility of the subject patent or create opportunities for patent licensing.

<u>Issue Date</u>: Not to be confused with the filing date, which is the date the patent application was physically received by the U.S. Patent and Trademark Office. This is the date on which the patent actually issues.

Non-Aligned

- <u>Sector</u>: Any sector in which the patent can be used or sold, other than the sector for which the patent or resultant product was invented or intended.
- <u>Pod</u>: A group of patents owned by a company that should be treated as a single unit of innovation (e.g., a certain group of patents that comprise a single product or multiple related products).
- <u>Prior Art</u>: Any relevant patent that was issued before the patent being analyzed. If this previous patent was specifically mentioned in the new patent's application, the previous patent is referred to as "cited prior art". If it was NOT mentioned, then that previous patent is referred to as "uncited prior art".
- Subsequent Art: Any patent that has a filing date with the USPTO that is after the issuance date of the subject patent. This subsequent art patent may or may not have cited (see "Citation" above) the subject patent. As subsequent art represents more recent innovation than the subject patent, it has great potential to shrink the market opportunity for the subject patent.

A Brief Primer on the Patent System

In recent years, the importance of patents and intellectual property rights as an important variable in the marketplace has come to the forefront of the public consciousness as world leaders declare their country's lead in the innovation race. Damaging intellectual property litigation is becoming increasingly common across all industries. This is exacerbated when patent rights are granted for non-novel ideas. A vast amount of precedent innovation is unconsidered by patent-granting authorities in the creation of new IP rights. Patent granting authorities including the United States Patent and Trademark Office (USPTO), European Patent Office (EPO), Japanese Patent Office (JPO), Chinese State Intellectual Property Office (SIPO), Korean Intellectual Property Office (KIPO) and many others are constrained by the use of patent classification systems which are routinely circumvented by patent applicants.

There is a two-way social contract underlying the patent system. In the United States, patent terms are generally limited to 20 years from the date of application. By statutory intention, once a patent has expired, the patent holder loses the right to exclude others from fully utilizing any innovation described in the patent. A large number of patents enter the public domain when they are "abandoned" – when owners discontinue paying patent maintenance fees. Patents also only provide an exclusionary right in the country for which the patent is filed. As demonstrated by the Global Innovation Commons⁴ (G.I.C.), using intellectual property available in the public domain eliminates the need to pay licensing fees on those innovations in countries where the patent was never registered, or worldwide, if abandoned.

Patently Obvious® is a weekly report focusing on select groups of patents in order to increase transparency in markets, addressing information asymmetries, and providing a more level playing field for all parties.

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⁴ http://www.globalinnovationcommons.org/