

Wireless charging emerging as industry standard

Renowned inventor and futurist, Nikola Tesla, in 1891, became the first person to introduce inductive charging by successfully demonstrating the wireless transfer of energy. However, it took over a century for this technology to find its way into mainstream consumer use.

A Tesla-envisioned reality



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"Over the past few years, wireless charging has emerged in the consumer electronics market space, mainly in the form of smartphones and smartphone accessories," explains Craig Fleischer, director of integrated mobility at Samsung Electronics South Africa. "This technology is now being integrated into a variety of technological devices, appliances, public spaces and even vehicles, as companies look to make power cords obsolete and turn the world into the Tesla-envisioned reality,"

Until now, commercial products have mainly used the "magnetic-inductive" method of charging which involves connecting a device to a physical dock. If you have ever used an electric toothbrush or shaver, then you are probably familiar with this type of inductive

charging.

Consumer benefits and industry solutions

A simple wireless charging solution eliminates the need to carry several different chargers for multiple devices. The goal has been to provide consumers with the ability to utilise one wireless charging dock that is compatible with all the devices they already own, as well as all the devices they may buy in the near future.

Fleischer continues, "The industry has been collaborating to establish a series of organisations to standardise wireless charging technologies. Currently, there are three such organisations, namely: the Wireless Power Consortium (WPC), the Power Matters Alliance (PMA) and the Alliance for Wireless Power (A4WP). Samsung is a member of all of these three groups."

In January of this year, the PMA and A4WP announced that they would join forces to offer even better wireless charging features for a variety of devices. This means that soon, restaurants, airports, public spaces, vehicles and living spaces of all description will finally unburden consumers of having to remember to carry multiple power cords everywhere. Soon the anxiety of running out of battery power and the hassle of all the charging cables taking up unnecessary space in their bags could be obsolete.

Samsung's commitment to a wireless future

"In late 2000, Samsung created a task team to exclusively focus on wireless charging and began extensive research and development. Our goal was to develop a technology that was easy to use and convenient for consumers, in order to promote and drive the widespread adoption of wireless technology standards. Several obstacles had to be overcome for wireless charging technology to succeed in the market, most notably the size and price of some of the most crucial components," Fleischer adds.

"This hard work came to fruition in 2011, when we introduced our first commercial wireless charging pad for Droid Charge (SCH-i510) in the US. Since then, Samsung has provided wireless charging covers and pads as a core accessory alongside many of its flagship smartphones, such as the Galaxy S4 and Galaxy Note 3 in 2013 and the Galaxy S5 and Galaxy Note 4 in 2014."

A key factor to making wireless charging technology more widely available has been making the production costs more manageable by strategically partnering with the right raw material suppliers and component companies.

Samsung also developed innovative ways to merge and combine components more efficiently, this allowed the technology to generate more power and take up less space. In the early stages of inductive charging, the Galaxy S4 charging pads were comprised of about 80 separate elements. For the Galaxy S5, developers were able to reduce the number drastically, to a much more manageable 50 elements and efforts are being made to decrease this number even further. The company's unique ability to combine parts that are capable of handling more than one function, has allowed commercialisation to finally become a reality.

Wireless charging has also come a long way in terms of charging speed. Two or three years ago, it was only twenty to thirty percent as efficient as wired charging. But since then, the speed has been doubled.

2015 - a landmark year for smartphone wireless charging

Last year, parts that support multiple standards on a single chip were released. Given that it usually takes around six to twelve months to integrate new components and put them on the market, it is expected that several of these products will be available to consumers this year.

This comes as the ecosystem for wireless charging continues to rapidly grow and mature. In addition to IT companies, leading brands from a wide range of industries, such as consumer electronics, semiconductors, mobile services, automotive, furniture, software and others have joined the effort and are working closely together.

"It is expected that 2015 will be a landmark year for the growth of wireless charging deployment, as wireless charging stations will begin to appear in more and more public places as well as in cars and secondary battery packs. Samsung will accelerate its efforts to make wireless charging technology widely available. With the Galaxy S6 smartphones, users will be able to enter a new wireless world like never before," concludes Fleischer.

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