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The History of Bluetooth

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It's hard to imagine a world without wireless technology. Being able to control music, send files, or operate appliances from one device is a daily necessity rather than an otherworldly luxury. Bluetooth has definitely changed life for the better.

However, the technology isn't as new as you might think. Bluetooth and other wireless technologies have a long history that has shaped them into the reliable features that we now use today.

So before you click that iconic blue logo on your phone, let's take a look at how Bluetooth was invented and what led to what we now use today.

1800s: Origins of Radio

Bluetooth is a short form communication technology that uses radio waves. This means that Bluetooth itself would not exist today if it weren't for the discovery of radio.

In the early 1800s, physicists like Hans Christian Oersted and Michael Faraday postulated the idea of electromagnetic waves. But in 1864, an experimental physicist named James Clerk Maxwell theorized that electromagnetic waves could be transmitted through the air, rather than through just a wire.

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Soon after, Heinrich Hertz became the first scientist to prove Maxwell's theory correct. Credited as the man who discovered radio waves, the unit of frequency "Hertz" is named in his honor.

While radio waves had been studied in laboratories for some time, Italian inventor Guglielmo Marconi started experimenting with radio waves outside of the lab. In 1899, Marconi had used radio waves to telegraph the results of the International Yacht Races in real time. Soon after, he established his own wireless company, broadcasting the first transatlantic signal in 1901.

For a few years, radio transmission was limited to Morse code dots and dashes, but this changed when Reginald Fessenden sent the first long-distance transmission of human voice and music from a Massachusetts based station.

Entertainment based broadcasting began around 1910, and radio music stations continue to persist today. Although music streaming services have affected radio's popularity, radio waves are the basis for which Bluetooth technology is established.

1994: The Invention of Bluetooth

The origins of Bluetooth can be traced back as far as 1994 when Dr. Jaap Haartsen was tasked with finding short-range radio connections. Working at Ericsson's Mobile Terminal Division, the company wanted to find a way to enrich the functionality of mobile phones which had been growing in popularity at the time.

By experimenting with multiple different factors and assets, Haartsen finally was able to create a technology that used UHF radio waves at 2.4 GHz. He was able to make this protocol consume a fairly low amount of energy while operating properly at a shorter range.

However, Wifi also operated at this frequency, so Haartsen came up with a way to use frequency hopping techniques to ensure that Bluetooth connections are reliable and tolerant to interference.

Around this time, the Bluetooth Special Interest Group (SIG) had also been formed, encompassing industry leaders from major tech companies. This group still exists today, overseeing subsequent updates and features to newer versions of Bluetooth.

SIG licensed trademarks and filed patents that made Bluetooth a standard for wireless communication, but also prevented others from creating a similar protocol. This is why there aren't really any other similar competitors to Bluetooth on the market.

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1996: Deciding on the Name

After this technology had become more polished, it was time to start thinking about marketing to consumers and tech companies for implementation in their gadgets. However, the wireless protocol needed a name.

In 1996, leaders from Intel, Ericsson, and Nokia met to discuss how Bluetooth can be standardized between different products and industries. To make things easier, Intel employee Jim Kardach suggested a code name that they can use in reference.

At the time, Kardach had been reading about Viking kings, and was particularly enthralled by Harald Gormsson. Harald was nicknamed “Bluetooth” because he was said to have a rotting front tooth that took on a bluish color.

Harald was famous for uniting Denmark and Norway, and Kardach thought that this was similar to what they were trying to accomplish by uniting PC and cellular industries with short-range wireless links. He suggested the name Bluetooth as a placeholder.

However, when it came time to come up with a serious name, patents and licensing issues made it impossible to come up with something else. Because of that, Bluetooth became the only option, and it has stuck ever since.

The iconic Bluetooth logo is a combination of the nordic characters for “H” and “B,” the initials of Harald Bluetooth.

1999: The First Bluetooth Device

Once the name had been established and companies could start using the technology in their devices, consumer Bluetooth gadgets began to appear. The first ever consumer Bluetooth device was a hands-free mobile headset that launched in 1999. That same year, the first Bluetooth specification, 1.0, was launched alongside, allowing for release of many other wireless devices.

More well known than the headset is the Ericsson t36, which was the first ever mobile phone to utilize Bluetooth technology. It worked best when combined with the Ericsson hands free headset. However, this model never actually hit store shelves.

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It was the Ericsson t39 revised edition that became an accessible way for consumers to start using wireless technology in their daily lives.

The Bluetooth Standard

Bluetooth 1.0 was a revolutionary wireless protocol, especially since there had never been anything like it before. It was a flexible packet-based protocol that had a wide variety of uses, making it perfect for hands free applications.

However, the first version of Bluetooth had its fair share of issues. Namely, data speeds peaked at 721 kbps, with a limited range that was unable to reach further than 10 meters maximum. And since obstacles like walls and furniture can all affect the Bluetooth connections, these factors were even more diminished.

Interestingly enough, the earliest version of Bluetooth was never designed with full bandwidth music in mind despite this being its main use today. The 721 kbps speed was enough for voice calling, but it was not until subsequent versions that wireless music streaming became a reality.

Present: Bluetooth Today

In 2017, Bluetooth launched its most recent update. Now Bluetooth 5.0, the protocol has improved a number of its core features to better adapt to modern technology. Namely, Bluetooth 5.0 extends the range up to 240 meters, improves compression speeds by double, and multiplies the broadcasting message capacity by eight when compared to just the previous version, Bluetooth 4.2.

Also, new Bluetooth Low Energy prevents battery drain like older iterations of the wireless protocol, meaning you can use your peripherals for longer. Plus, Bluetooth 5.0 adds the ability to stream audio to two different devices at one time, making music or audio sharing even easier.

Bluetooth is backwards compatible with previous specifications, so if your phone supports 5.0 but your pair of headphones only runs on 3.0, you can still use the accessories.

With new advancements in the technology, Bluetooth can now be used to control certain smart devices, send files, and stream high fidelity audio, even at higher compression rates when

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compared to CDs or vinyl. And since all of these improvements occurred in just over twenty years, who knows what the future will have in store for wireless tech.

In Conclusion

We use Bluetooth regularly to communicate wirelessly over short-range radio waves. And this technology wouldn't exist if it weren't for the advancements made by scientists in the 1800s who discovered that electromagnetic radio waves can transfer wireless signals.

As radio continued to grow, Dr. Jaap Haartsen was tasked by Ericsson to utilize this technology to enhance the usability of cellular devices. Shortly after the SIG was formed, Jim Kardach named this software 'Bluetooth' after a Danish king of the same name who had joined together Denmark and Norway.

While the first consumer Bluetooth device was a headset released in 1999, its functionality was nothing compared to what we have today. Currently, nearly every single smart device uses Bluetooth technology, with some devices removing the classic headphone jack in favor of purely wireless headphones.

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