How Does Wi-Fi Work?

To mankind, Wi-Fi [1] represents many things: Freedom of speech, access to information and the ability to keep in touch with both family members and strangers, near and far. But what does Wi-Fi stands for? Some will claim it's shorthand for Wireless Fidelity, sort of like how people of New York call the region south of Houston Street "SoHo" and San Francisco calls South of Market "SoMa."

But, that's not true.

In 1999, the Wireless Ethernet Compatibility Alliance [2] (not to be confused with the Rebel Alliance in Star Wars) wanted to set a standard for wireless connections. It was called IEEE 802.11, which didn't exactly roll off the tongue. So, to be sure it would catch on, they needed to offer a brand identity to consumers. When given 10 options [3] by consultancy Interbrand [4], the one they picked was Wi-Fi (check out the original press release [5]).

That's it. There's no long, complicated, hard-to-pronounce terminology behind the curtain. Wi-Fi simply means Wi-Fi.

How It Works

Wi-Fi is a high-speed Internet and network connection without the use of cables or wires — you could use “wireless” as a solid synonym. The technology uses radio waves to transmit data between your computer and a router.

It found early success in July 1999, when Apple built in Wi-Fi [6] as an option on iBook computers, calling it AirPort. Other computer makers followed suit, and thus offered consistency to consumers.

Introduction of the Hotspot

Wi-Fi was most commonly used in the home, when people had many devices they wanted to put on the same network. This allowed for seamless file-sharing between computers and fewer cables to trip over. As laptops became more common, the need for an Internet connection that allowed for portability became more relevant.

Public hotspots were initially paid, at places like coffee shops and restaurants, and critics were skeptical of their longevity (and for good reason). Now, Wi-Fi is usually offered free as a service to customers in an airport or coffee shop, but hotspots are popping up even in less commerce-focused locations like subways, airplanes and phone booths [7].

Wi-Fi vs. 3G

Wi-Fi’s shortcoming is that it only works in close range because it’s dependent on radio waves. You must be in a hotspot to use it. But 3G, on the other hand, follows

you. Devices like a Nook, Kindle or iPad are priced higher with 3G, plus, you pay a carrier like AT&T or Verizon for the service. Alternatively, 3G can be bought separately as a mobile hotspot — in this case, your mobile hotspot gets the Internet connection via 3G and in turn provides a connection to your other (multiple) devices via Wi-Fi.

Next time you walk into a coffee shop, keep in mind that your rhetoric reflects what kind of web user you are — asking if they offer free Internet will out you as a newbie, while requesting the “password for the wireless” is a small improvement. Next time, say you’re interested in their Wi-Fi, and say it like you know the term is short for nothing, especially not “Wireless Fidelity.” Want ultimate nerd cred? Ask about the IEEE 802.11 (but don’t blame me if you have to settle for a latte).

Read More [8]

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