

WI-FI – A Wireless Broadband Network for the Future.

Wi-Fi is an emerging technology that provides low-cost, high-speed wireless data service. Today, Wi-Fi is being used to wirelessly connect discrete settings such as homes or businesses and in some instances to connect rural communities, to the Internet. With the right regulatory framework, Wi-Fi has the potential to evolve into a third broadband network in the last mile and to become a platform for innovation and growth. Developing the necessary regulatory framework will take time and persistence on the part of policymakers.

The Emergence of Wi-Fi

Wi-Fi or wireless fidelity is also referred to as 802.11, its engineering specification. Presently, Wi-Fi can deliver speeds of up to 11 megabits per second and has a communicating range of 300-500 feet. Most Wi-Fi devices currently operate in unlicensed spectrum in the 2.4 GHz band, which the FCC has set aside for things like cordless telephones, microwave ovens, and other low power equipment.

A number of different markets are emerging for Wi-Fi including home networking, public hot spots, college campuses and schools, office settings, and rural and suburban communities. With respect to home networking, a residential consumer can purchase a wireless interface card and base station in retail stores such as Radio Shack or Circuit City. Once the base station is connected to a DSL or cable modem service, consumers are un-tethered. They can use their computers wirelessly to surf the Web, write email and enjoy their broadband connections throughout the home. New hot-spot providers are offering Wi-Fi services in Starbuck's cafes, hotels, convention centers, airports and train stations. In the enterprise market, corporations are using Wi-Fi networks to complement wired networks in the workplace, citing increased worker productivity from allowing employees to access their networks wherever they go in the building. For example, Microsoft's Redmond campus has deployed Wi-Fi allowing employees to connect wirelessly to the Internet from any location on our extensive campus. A number of colleges are using Wi-Fi to provide wireless broadband access. In some rural and suburban communities, small wireless Internet service providers (or WISPs) are setting up antennas on grain elevators, towers and buildings to serve areas otherwise lacking access to broadband. WISPs can operate anywhere they can achieve a line of sight and report that they can send signals up to 15 miles.

Like many technology companies, Microsoft is investing heavily in R&D aimed at fueling the advance of Wi-Fi. Wi-Fi connectivity software is integrated into our WindowsXP operating system, and many PCs now come with Wi-Fi hardware built-in, greatly simplifying the un-tethering of your computer.

The Challenge for Policy Makers

Wi-Fi currently does not meaningfully compete with other broadband services, but rather complements them. Policymakers must dedicate themselves to long-term spectrum reform if Wi-Fi is to reach its full competitive potential. For instance, policymakers must assure adequate spectrum is available for unlicensed uses. In order to connect rural and underserved areas by Wi-Fi, allocations below 2.4 GHz are needed. In addition, to maximize efficient use of spectrum allocations, policymakers must allow Wi-Fi antennas to transmit at varying power levels as long as there is no harmful interference, and they must ensure modern spectrum sharing techniques are used to limit interference among unlicensed devices. Lastly, policymakers must preserve a consumer's ability to connect Wi-Fi and other devices to wired networks, as long as the devices do not harm those networks.

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