

## **Wi-Fi Hotspots**

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Wi-Fi (“Wireless Fidelity”) hotspots in airports, hotels, convention centers, coffee shops, and other public spaces, provide users with nomadic broadband access to the Internet and to enterprise VPNs (virtual private networks).

The most common WiFi systems support data rates up to 11Mbps with coverage up to 150 feet within and 1500 feet outside buildings. They operate in compliance with the 802.11b IEEE Ethernet-based standard at 2.4GHz. Most new laptop and notebook PCs and some high-end PDAs are equipped for Wi-Fi access. Multi-band WiFi products also are available that support 802.11a (54Mbps, 5GHz) and/or 802.11g (54Mbps, 2.4GHz), in addition to 802.11b.

Wi-Fi first emerged as home-grown “free-nets” and “pay-as-you-go” sites. Then came WiFi aggregators promoting convenience of standard log-ins at multiple hotspots, cost savings, and predictability. Now in addition to independents and aggregators, wireless carriers and fixed network operators looking towards bundling Wi-Fi hotspot access with their core wide-area wireless or fixed network services.

Notable Wi-Fi ventures:

- Boingo – Aggregator. Serves airports, hotel lobbies and coffee shops recognize Boingo subscribers. Rates vary for 24-hour “connect days” under various access plans. Marketed as part of Earthlink Wireless High Speed service.
- T-Mobile – Hotspots in Starbucks stores plus airline lounges, bookstores. Fee options include metered per-minute charges for pay-as-you-go, and fixed monthly rates for unlimited national use with one-year contract. Unlimited WiFi access is also in a bundle with wireless voice service. T-Mobile will offer a dual-mode PC card for 802.11b and 2.5G GPRS and plans an integrated GPRS/WiFi service.
- Wayport – Aggregator. In hotels; joint service agreements with CNN Airport Network for access in airports, and with

AT&T Wireless and Verizon Wireless for access at hotels and airports.

- Sprint PCS – Launching WiFi through roaming agreements with Airport Wireless and Wayport at airports, convention centers, hotels.
- iPass - Authenticates credentials for access via WiFi to a Virtual Private Network (VPN). Roaming support agreement with Wayport.

Cable operators could use their existing network infrastructures to deploy WiFi hot spots, although no major initiatives have been announced to do so. Perhaps to test the water for WiFi services, Comcast has announced a marketing agreement with T-Mobile that provides modest discounts to Comcast broadband users signing up for T-Mobile WiFi services.

Although primarily data oriented, WiFi hotspots will also be used for voice, through laptops, PDAs, and/or hybrid WiFi/cellular handsets.

Despite rapid growth of WiFi hotspots and of users, especially business travelers, it’s still unclear how WiFi service providers will make money. Providers have yet to publish information on paid use of WiFi hotspots. Market research suggests that demand will increase once rates fall to ~\$20/month but paid-WiFi may be undercut by proliferation of “free” WiFi hot-spots in public areas, in many hotels, and in travelers’ way-stations such as Panera cafes.

For example, Cometa has been shut down by its joint venture partners - IBM, AT&T, Intel - due to uncertain prospects for its planned deployment of WiFi sites and infrastructure in major US markets that would be wholesaled to ISPs and other service providers. Verizon scaled back deployment of hotspots in converted payphones in New York City for “free” WiFi access by its DSL subscribers. Although Verizon’s deployment plan would avoid, in many cases, having to pay real estate owners, the expected indirect benefits to Verizon’s DSL business were deemed to be insufficient to justify the investment.