

## WiMAX

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Communications and information technologies pervade our homes, our workplaces, our schools, even our own bodies. All vast communications networks have in fact become so ubiquitous as to be almost invisible; you probably have never given much thought to how they work, how they got here, and who was involved in making them happen.

Wireless communication is the transfer of information over a distance without the use of electrical conductors or "wires". The distances involved may be short (a few meters as in television remote control) or long (thousands or millions of kilometres for radio communications).

A wireless local area network (WLAN) links devices via a wireless distribution method, and usually provides a connection through an access point to the wider internet. This gives users the mobility to move around within a local coverage area and still be connected to the network.

WiMAX is the next-generation of wireless technology designed to enable pervasive, high-speed mobile Internet access to the widest array of devices including notebook PCs, handsets, smartphones, and consumer electronics such as gaming devices, cameras, camcorders, music players, and more.

WiMAX is an IP based, wireless broadband access technology that provides performance similar to 802.11/Wi-Fi networks with the coverage and QOS (quality of service) of cellular networks. WiMAX is also an acronym meaning "Worldwide Interoperability for Microwave Access (WiMAX).

WiMAX is a wireless digital communications system, also known as IEEE 802.16, that is intended for wireless "metropolitan area networks". WiMAX can provide broadband wireless access (BWA) up to 30 miles (50 km) for fixed stations, and 3 - 10 miles (5 - 15 km) for mobile stations. In contrast, the WiFi/802.11 wireless local area network standard is limited in most cases to only 100 - 300 feet (30 - 100m).

WiMAX combines the familiarity of Wi-Fi with the mobility of cellular that will deliver personal mobile broadband that moves with you.

WiMAX supports ATM, IPv4, IPv6, Ethernet, and VLAN services. So, it can provide a rich choice of service possibilities to voice and data network service providers. In addition, WiMAX provides an ideal wireless backhaul technology to connect 802.11 wireless LANs and commercial hotspots with the Internet.

WiMAX doesn't just pose a threat to providers of DSL and cable-modem service. The WiMAX protocol is designed to accommodate several different methods of data transmission, one of which is Voice Over Internet Protocol (VoIP). VoIP allows people to make local, long-distance and even international calls through a broadband Internet connection, bypassing phone companies entirely. If WiMAX-compatible computers become very common, the use of VoIP could increase dramatically. Almost anyone with a laptop could make VoIP calls.

WiMAX success stems from a robust vision incorporating four key strengths:

- open standards-based, interoperable technology built from the ground up for the Internet fosters innovation and competition;

- vibrant, growing ecosystem of industry leaders such as Intel, Sprint, Clearwire, Motorola, Samsung, Nokia, Cisco, and hundreds of other companies;

- global economies of scale and more attractive intellectual property environment that enable lower costs compared to other wireless technologies;

- advanced wireless technology that enables a faster wireless broadband solution for doing more on the go.

The WiMAX network includes two key components: a base station and a subscriber device. The WiMAX base station is mounted on a tower or tall building to broadcast the wireless signal. The subscriber receives the signals on a WiMAX enabled notebook, mobile Internet device (MID), or even a WiMAX modem.

WiMax is all set to take over the wireless world. With its non-line-of-sight and long coverage, WiMax addresses a major part of the existing problems faced by Wi-Fi. In addition to this, WiMax's QoS assurance feature gives it a competitive edge and helps position this new platform as a very effective solution in the wireless domain.

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