PerceptionDIGITAL

WiMAX, The First 4G Technology

WiMAX (Worldwide Interoperability for Microwave Access) is a wireless digital communications system that provides fixed and fully mobile Internet access. The current WiMAX revision provides up to 40 Mbit/s, with the IEEE 802.16m update, it is expected to offer up to 1 Gbit/s fixed speeds.

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).

With WiMAX, WiFi-like data rates are easily supported, but the issue of interference is lessened. WiMAX is a standards-based technology enabling the delivery of last mile wireless broadband access as an alternative to cable and DSL, which provides a regulated environment and viable economic model for wireless carriers.

For the end user, WiMAX is a new wireless platform that delivers a far wider range of applications with high performance, wideband voice, high-quality video and lightning-fast downloads.

WiMAX Applications and Devices

Fast and Easy Network Access

WiMAX can play a role both in user access and data center connectivity, with wireless access delivering performance equivalent to a wired DSL or cable modem connection.

• Users could access high capacity data services along with VoIP softphone and real-time video. On top of email and basic applications access, users could do large file uploads and downloads, participate in audio or video conferences.

• A number of users can share access with a Wi-Fi/WiMAX router. WiMAX could provide a highly secure, portable capability to use at meetings, conferences or temporary offices. Users could set up a temporary office with a “network-in-a-box”, or a temporary communications facility for a sporting event for temporary access for visitors, media, and personnel.

• At the data center, WiMAX can serve as a primary or backup connection. As a primary connection, WiMAX would allow users to install or add capacity instantly without waiting for a carrier to turn up a new circuit. As a back-up connection, WiMAX will continue to operate even if all cable links to the central office have been damaged or cut.

Vertical Applications

Along with generic networking capability, WiMAX can also add new capabilities to a variety of vertical markets, for example,

• Medical and Medical Telemetry: Nowadays, many health-care applications, bedside data entry to x-ray/CAT scan viewing and medical device telemetry (for remotely monitor various vital signs of ambulatory patients), are wireless applications. WiMAX can support these applications more reliably than Wi-Fi and provide coverage both inside and outside the medical facility.

• Public Services: Government departments built wireless networks for a variety of applications ranging from traffic and security cameras to parking meter systems. Wi-Fi implementation is not desirable, since the limited range of a Wi-Fi transmission requires hundreds of access points to be deployed and maintained. WiMAX base stations is ideal with each can provide coverage equivalent to dozens of Wi-Fi access points at a higher throughput.

• High Speed Wireless Access for rural areas: Eliminating the need for running fiber across rough terrain, or through sparsely populated areas, WiMAX base stations can be built to service the local areas wirelessly, create a new revenue source with a considerably

lower investment to operators, as well as benefiting residents in rural areas. In Vietnam, Ta Van village, where none of the households have access to a fixed-line phone, other than a phone in the Ta Van People's Committee office and another at the communal post office; the local service provider breaks the communication barrier using merely twelve Wimax subscriber stations located around the village, route Internet connectivity to PCs and VoIP phones in numerous locations, including the medical clinic, post office, school, guest houses as well as residencies.

WiMAX Devices

While WiMAX can be used in different devices from handsets to notebook computers to enable secure, reliable, high-capacity wireless connection. More business opportunities are opened up when WiMAX is used in nontraditional means:

• In Pakistan, while there are only 7 million PC users in Pakistan, there are about 95 million mobile phone users and 95 million people who own TVs; a WiMAX television or a set-top box is a way for the nation's wireless broadband users to connect to the Internet.

• WiMAX operators are partnering with mobile service providers to sell dual-mode handsets that marry 2G coverage for voice with 4G coverage for data with WiMAX, as well as providing VoIP phone services.

• Utility companies are using WiMAX as a gateway into the home with WiMAX Machine-to-Machine (M2M) devices, including smart-grid modules.

• WiMAX video surveillance cameras are deployed for remote monitoring.

WiMAX Ecosystem is Growing, Grow your Business with WiMAX

To explore WiMAX opportunities:

www.perceptiondigital.com

email: sales@perceptondigital.com