

# Wireless Broadband for Developing Nations

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## Abstract

Technological advancements in the field of communications over the last decade have completely changed our lives. Wireless communication which was a dream not so long ago has now become a necessity. High speed internet connectivity plays a vital role and in some way or the other all of us are dependent on it. With the recent emergence of the wireless mode of broadband, it is inevitable that in years to come, we will yet once again experience a revolution like the one we experience in the field of cellular technologies a decade ago. Today's user needs high speed wireless broadband technologies which provide them connectivity anywhere and at all times and WiMAX is one such technology which has the potential to live up to the consumer demands of today.

WiMAX technology is based on the IEEE 802.16 standard and solves the longstanding problem of "last mile" broadband connectivity which provides a complete interoperable solution, bandwidth of up to 100 Mbps, cellular like coverage, capability to work on both licensed and unlicensed spectrum with very low deployment cost. There are two distinct flavors of WiMAX: IEEE 802.16d for fixed and IEEE 802.16e for mobile broadband. Both the flavors are built for different market types. The mobile version of WiMAX is being adopted by a lot of service providers globally as it offers mobility and at the same has more or less the same characteristics of its fixed wireless counterpart.

WiMAX technology is being adapted by both the developed and developing nations at the same time. However, the scope of the technology by many is considered to be very high in developing nations where the communication infrastructure is either not present at all or is very weak. Providing broadband services in such areas through the copper infrastructure is not only very expensive but at the same time is also a time consuming effort. The best option available to them is to go for the wireless mode of broadband.

This project looks at the WiMAX technology briefly and is followed by a detailed wireless broadband industry analysis of a developing and a developed nation. The countries chosen for the analyses are U.S. and India and both perfectly fit into the criteria of a developed and developing nation. After looking at the wireless broadband industry of both the countries and comparing them I have come up with recommendations as to how the technology could succeed in the developing nations and what the service providers should do to make WiMAX a success in the developing nations.

There are several obstacles in the deployment of WiMAX in developing nations and one of the most concerning factor is the lack of spectrum. The governments should make decision in this regard as soon as possible so that it does not hinder WiMAX deployments in these countries. The report concludes with several recommendations specifically for developing nations following which I believe WiMAX can surely succeed and high-speed internet connectivity which has long been a dream for the public in such countries could finally become true.