WiMAX Comes of Age

With WiMAX viewed as the next big thing in the wireless arena, VARIndia weighs the various merits and challenges the technology might offer to operators in India.

WiMAX has come to the forefront of attention among the global ICT community in the past couple of years, with many industry experts viewing the technology as a perfect way of transmitting vast amounts of wireless data over large areas.

But while the WiMAX technology has been showing signs of huge potential, industry experts are divided about the commercial viability of WiMAX.

WiMAX offers a more efficient and flexible way of delivering broadband Internet access. WiMAX is an all-IP standards-based, wireless broadband technology designed for data that acts as a wireless last-mile extension of IP infrastructure. This allows WiMAX to leverage on existing IP network equipment and take full advantage of IP-based innovations.

WiMAX allows subscribers access to all applications available over wired connections with the added advantage of mobility and portability. With the current influx of WiMAX-enabled mobile devices into the market, an emergence of new applications especially suited for mobile access is expected. Robust QoS and low latency make WiMAX especially well suited for real-time applications like VoIP, content streaming, online gaming, and vertical applications such as those for safety and surveillance. Broadcast applications can also be supported through the Multicast Broadcast Service. Because the Indian telecom sector operates in a volume-driven market, India is not only positioned to spur one of the world's largest broadband wireless markets, but also to support an ancillary ecosystem that will generate further employment, enhance development in semi-urban and rural areas and lead towards true sustainability.

Amid the ongoing liberalization of the Indian telcom market, India is increasingly seen as a fertile ground for WiMAX deployment. The reasons are not far to seek. The lack of wireline infrastructure, coupled with the often problematic and sparse terrain of such a vast country like India are often cited as the reason for being a ripe ground for WiMAX deployment. Added to this, WiMAX compares favourably to the inefficient provisioning and poor customer support of wireline players. "Considering the telecom infrastructure in India and the huge geographies that need to be covered by telecom operators, wireless technologies are proving to be the answer to our unique connectivity needs. The mobile penetration that India has seen is a testament to the fact that wireless is the clear choice, and as voice connectivity has been well established, the introduction of 3G networks will enable customers to also access multimedia and data on their mobile handsets. The large customer base of the telecom operators would serve as a captive audience for the new technology," says Vish Iyer, Vice President, Service Provider, Cisco India & SAARC.

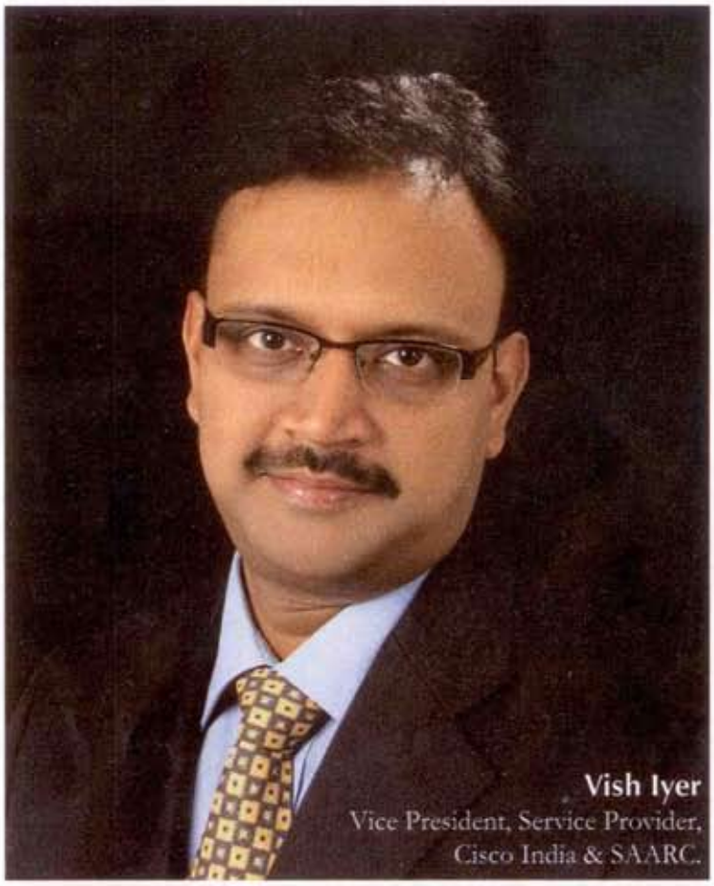
Another reason why WiMAX is increasingly viewed as the next big thing in India is household broadband penetration, which remains to be low in large areas of the country.

But challenges are still there to translate this potential market into actual demand. India has an unequal distribution of income, which prohibits the propagation of broadband services to the mass market.

Then, there is the issue of Internet access, with content filtering across the region.

WiMAX does, nevertheless, seem to be the overall solution to several of the communications problems in the country.

Though fixed-line data access offers a high capacity, it is limited in coverage, and laying copper or fibre in rural areas of the country is too expensive. Wi-Fi suffers from interference issues and provides a widely varying range of user experience.



Vish Iyer
Vice President, Service Provider, Cisco India & SAARC.

There also appears to be an increasing consensus that 3G technology fails to adequately provide a cost-effective way of offering multiple data services to the mass market.

WiMax Complements 3G

Cisco believes that 3G and WiMax are complementary technologies. For personal broadband on the move, 3G would be ideal since it provides greater bandwidth over a larger area, whereas for a primary broadband connection WiMax would be more suitable since it delivers better speed. India has only 5 million broadband subscribers till date. So, it is clear that the country needs both these technologies to be able to grow its subscriber numbers. Moreover, WiMax has advantages in terms of spectrum availability and cost. Hence, it will be vital from a market penetration perspective.

"WiMAX may be deployed by some carriers for backhaul application in urban and metro areas for carrying high bandwidth 3G traffic. However, 3G also has its advantages from a voice perspective which is very important for a market like India where there is a large number of voice subscribers," says Vish Iyer. "3G will provide greater bandwidth and higher speed over a larger area allowing video and data services to be available to the masses," adds Vish Iyer.

Data and Video services will definitely have greater benefits. Data traffic is growing at least 3 times faster than voice and 3G will help operators meet the growing demand. Video services will emerge as a key differentiator among competing offerings for service providers. Whether it is the delivery of video services to enterprises, or innovative new mobile TV services targeted at consumers, the key to success will be the quality and breadth of the service offering.

Last year, the WiMAX Forum highlighted activity in the burgeoning Indian market to illustrate the power of WiMAX technology and its meaningful effect on emerging markets. The first commercial technology specifically optimized for mobile broadband, WiMAX provides a scalable, cost-effective solution that is the strongest candidate to provide high-speed broadband Internet across India. Given its true broadband performance capabilities, early availability, cost advantages, government support and the upcoming auctions relating to the 2.3/2.5 GHz frequency bands, the WiMAX Forum projects the Indian WiMAX market including devices will be worth $13 billion (Rs.52,000 crore) in 2012. This market projection takes into account 27.5 million WiMAX

users, or 19 million WiMAX subscribers in 2012.

WiMAX Forum forecasts that by 2012 the Indian market will support 27.5 million WiMAX users, representing approximately 20% of the global WiMAX user base. "In India, WiMAX represents a win-win proposition, benefiting both network operators and subscribers at the same time," explains C. S. Rao, Chairman, WiMAX Forum India chapter. "Broadband penetration being low, the opportunity for operators to gain large numbers of subscribers through WiMAX is incredible. Any service provider with innovative service offerings, attractive devices and go-to-market plans that maximize the utility offered by WiMAX technology to price-sensitive Indian customers can use this ready and proven technology to quickly gain market share."

Nikhil Jain
COO & Director, Elitecore Technologies Ltd.

At a global industry event in 2008, Ron Resnick, President & Chairman of the WiMAX Forum, referenced India as a leading example of WiMAX technology's potential on the world stage. Citing the recent decision by India's Department of Telecommunications to allocate and auction WiMAX spectrum to the 2.3 and 2.5 GHz frequency bands, Resnick excited the audience with India's goal of connecting over one billion new customers.

"India currently has only 4.5 million broadband users out of a population of 1.2 billion people. And with these recent regulatory decisions, India joins other major developed nations such as the US, Japan, Korea, Taiwan, and Russia in freeing up prime spectrum for mobile WiMAX deployments," said Mr, Resnick, President & Chairman of the WiMAX Forum. "With the expected demand for WiMAX-enabled devices brought on by India's planned WiMAX deployments, WiMAX Forum will add an Indian certification lab to its existing network in 2009 to stay ahead of the demand for products in this region. This will be very important to the device-hungry Indian market, which can look forward to connected laptops, USB dongles, ultra-mobile PCs (UMPCs), mobile handsets, and mobile Internet devices (MIDs)."

WiMAX Forum predicts that major rollouts of WiMAX technology in India will have a tremendous positive effect on the nation's economy. According the Indian Government, the Indian economy is currently growing at 9% year over year. In particular, there are an additional 8-10 million mobile phone subscribers every month. WiMAX Forum predicts that widespread access to broadband will greatly increase economic productivity by laying the groundwork for important initiatives, such as distance learning, telemedicine and e-government.

Advantages

WiMAX has the advantages of these technologies. Without any of the disadvantages, WiMAX has the performance, the capacity and speed of a fixed network, with mobility added on top. The technology also has the ability to change the business model from a carrier perspective and offer a wider universe of devices and different applications to the end-customer. As far as coverage is concerned, it is somewhere between the wi-fi hotspot model and full-blown 3G cellular network.

With new spectrum licences expected to be issued in India, there is a case for the deployment of WiMAX in the country.

"The current wireless broadband offerings (including wi-fi and similar technologies) have been limited to enterprise consumers due to better economics than residential broadband services. However, with the auction of 3G and Broadband Wireless Access (BWA) spectrum, the situation is likely to change with wireless broadband becoming available to residential households across income segments in both urban and rural areas," says Vish Iyer.

In addition, mobile broadband could also be a driver of WiMAX adoption in India. An increasing young population in the country increasingly uses bandwidth-intensive applications, and so the potential for the WiMAX technology is high.

For fixed players, WiMAX means a quick route to market, eliminating the need for wire infrastructure to offer fixed services. This give the operator the ability to switch into mobility services at a future date.

One of the disadvantages of WiMAX technology include the cost of customer premises equipment (CPE), which remains too costly to allow for mass adoption, particularly in rural areas of India.

But with global players supporting the project, and companies such as Sprint Nextel pouring money into the technology, WiMAX appears to have a real potential. The rollout of consumer electronic devices with embedded WiMAX chips will also help to facilitate the spread of the technology.

Elitecore Technologies, a leading provider of Telecom OSS BSS system for next generation voice video & data service, has announced the launch of EliteAAA appliance server from its CRESTEL division at WiMAX World, Chicago.

EliteAAA is the answer to the aggressive and ever-growing access control, service delivery, and accounting requirements of carriers, service providers and wireless operators. EliteAAA centrally manages the authentication of your subscribers, authorizes them for appropriate level of service, and ensures reliable accounting of their usage. EliteAAA enhances service provider's competitive strength; it sits at the core into the very enablement of the service.

"In addition to the authentication, authorization and accounting functionality required by other types of networks, WIMAX AAA system requires the intelligence and performance to manage mobility and roaming, Our EliteAAA supports mutli-services and is NWG 1.2 compliant for Mobile WiMAX networks," says Nikhil Jain, COO & Director, Elitecore Technologies Ltd.

ElitecoreAAA in a box solution offers great convenience to service providers through reduced implementation costs and slashes set-up times, reduced maintenance, thereby lowering service provider's administrative burden. EliteAAA appliance is on Intel platform and gives a performance of 1,000 transactions per second. It is simple to configure and maintain browser-based management interface that provides a secure console to remotely configure any of the local server settings.

EliteAAA supports Multiple Service & Business models - be it wireless or wireline Internet access, outsourced remote access, managed VPNs, broadband, VoIP or any combination of services.

Elitecore plans to tie up with distributors or channel partners to sell its EliteAAA appliance. ■