

Capsule Summaries of Trend Data for Broadband

A Monthly Staff Report

Detecon Predicts WiMAX Will Enable a New Breed of Service Providers

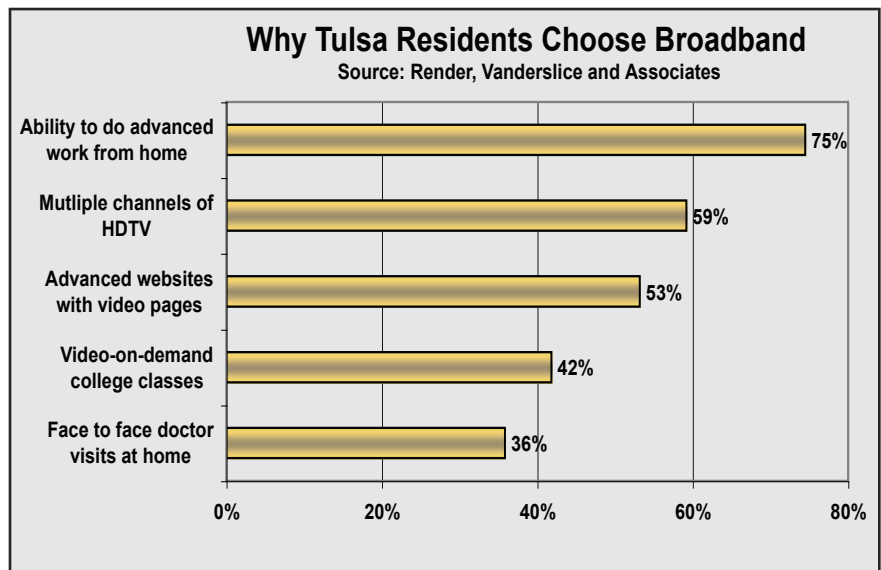
Information industry consulting firm Detecon offers five predictions on how WiMAX will affect the industry. Most importantly, WiMAX will enable service providers to offer a full bundle of wireless voice, data and video services.

“The industry is approaching a turning point,” said Holger Spielberg, Vice President of Detecon, Inc. “WiMAX will allow new types of competitors to enter multiple market segments, going head to head with incumbents.”

Detecon’s predictions are outlined in its new white paper entitled “WiMAX Overview and Outlook for the USA” published last month.

Detecon’s WiMAX predictions include:

- WiMAX deployment in heavily wired markets, such as Western Europe and North America, will be slower than in non-wired markets (such as China, India and the Caribbean) where the technology’s primary use will be for voice and data services.
- WiMAX will be of less interest to large wireline network operators who are not interested in providing bandwidth parity for those too far from the head-end or central office.
- US cellular operators will focus on mobility more than bandwidth and therefore will prefer 3GPP technologies over WiMAX.
- WiMAX will allow a new breed of wireless Internet service providers to flourish. Municipalities, power companies and also companies with many points of presence in key locations (such as Walmart, FedEx or the US



Home Office Needs Top Broadband Demand

Mike Render at RVA says a survey of Tulsa residents shows three-quarters want broadband to enhance their ability to work at home. Entertainment needs came next, followed by a desire to access media-heavy Web pages, college classes, and medical care (see chart).

Some 88 percent of those surveyed were Tulsa residents full-time. The remainder were in the city for the summer only. See the Render, Vanderslice and Associates Web site at www.rendervanderslice.com for details on other RVA survey insights.

Postal Service) could use WiMAX to enter the electronic data distribution market.

• WiMAX will also play a role in the convergence market where it could provide some element of a triple play bouquet. The most interesting examples are the Direct Broadcast Satellite (DBS) companies that could use WiMAX to complement their video offering with data and voice, making them more attractive against cable companies or Telcos.

The in-depth white paper also lists important factors that differentiate WiMAX from previous broadband wireless access technologies:

WiMAX is a standard. Most car-

riers and network equipment manufacturers have embraced the standard, part of the highly popular 802 (Ethernet) standard family.

WiMAX does not require Line of Sight (LOS). Most previous broadband wireless access solutions required LOS, making ubiquitous deployment a marketing hope, but an insurmountable technical challenge in cities where foliage and buildings obscure LOS.

WiMAX offers Quality of Service (QoS). QoS allows for the deployment of voice, data and video applications.

WiMAX has the best spectrum efficiency to date. WiMAX has a theoretical spectrum efficiency of up to 7bit/Hz/Second – by far, superior to

most other wireless technologies. This efficiency allows providers more latitude in their business plans both to acquire (when necessary) spectrum and to manage their radio frequency (RF) network.

WiMAX is supported by industry leaders. Before WiMAX, broadband wireless access was the dueling fields of small operators served by small equipment manufacturers. Unable to drive enough volumes, little venture capital was invested. On the other hand, industry leaders such as Intel are firmly behind WiMAX, seeing it as a follow-up for its hugely successful Centrino. The marketing might of Intel has created an industry-wide momentum for investment, as well as research and development activities.

With over 3,000 projects in 120 countries and more than 600 consultants on staff, Detecon is one of the world's leading global consulting firms for the communications and information technology industry. Detecon Inc. is headquartered in Reston, Virginia. It is a fully owned subsidiary of T-Systems International GmbH, a division of Deutsche Telekom. A summary of this white paper is available at www.deteconamericas.com/wi_max.shtml.

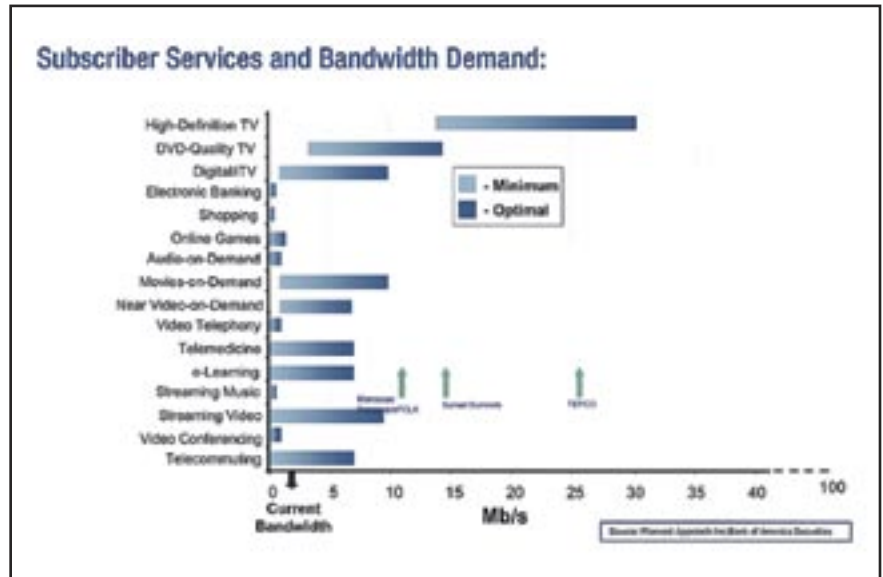
VoIP Trends, Worldwide

Network operators around the world will continue to expand their deployment of VoIP products and services, driven mainly by fear of losing voice revenues to established and emerging competitors, according to a new survey conducted in August from Heavy Reading (www.heavyreading.com),

Light Reading Inc.'s market research division. The survey includes responses from more than 175 carrier professionals representing more than 130 network operators worldwide, ranging from the world's largest incumbent telcos to emerging regional competitors.

"Over the next two years, carriers expect a big surge in the proportion of voice traffic that is VoIP," says Graham Finnie, Senior Analyst at Heavy Reading and author of the report.

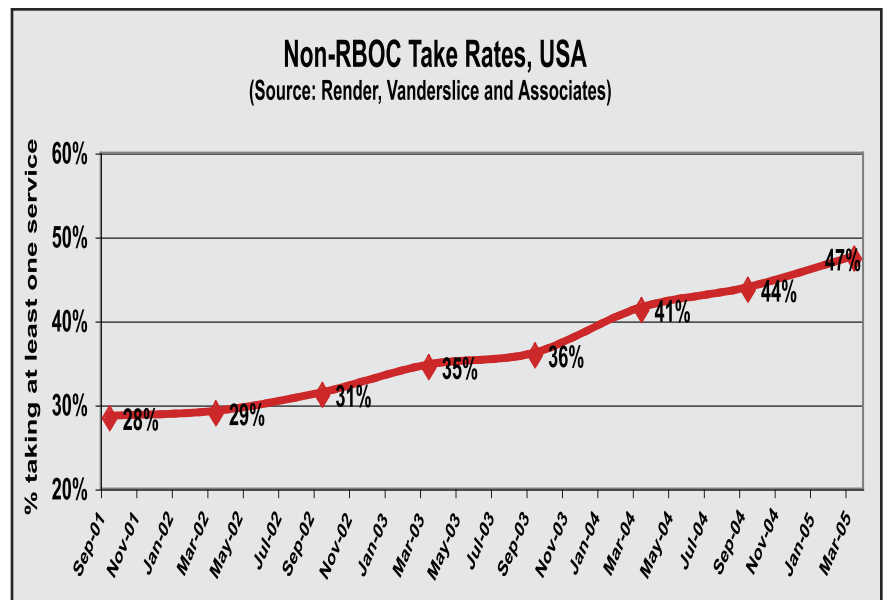
"Half the respondents surveyed said that more than 50 percent of their



Take This to the Bank

Need FTTH Financing? Here's what Planned Approach, Inc., told Bank of America Securities about what consumers need in the way of bandwidth for various activities. The data were quoted by Kent Brown of AFL, at our Broadband Summit in Dallas last month (see chart).

HDTV tops the list, as might be expected, at 15 to 30 Mbps. But movies on demand, streaming video, e-learning, telemedicine and telecommuting also demand high bandwidth – higher than most authorities have been quoting.



FTTH Take Rates Continue to Climb

Although the RBOCs, especially Verizon, have just begun to market their Fiber-to-the-Home networks, they should take heart from the growing take rates among their smaller brethren. About 28% of homes passed by fiber took at least one service in 2001. That had climbed to more than 47% by March of this year, Says Michael Render.

See the Render, Vanderslice and Associates Web site at www.rendervanderslice.com for details on other RVA survey insights.

voice traffic would be IP by 2007, with relatively little difference expected between VoIP in core networks and VoIP in access networks.”

Other key findings:

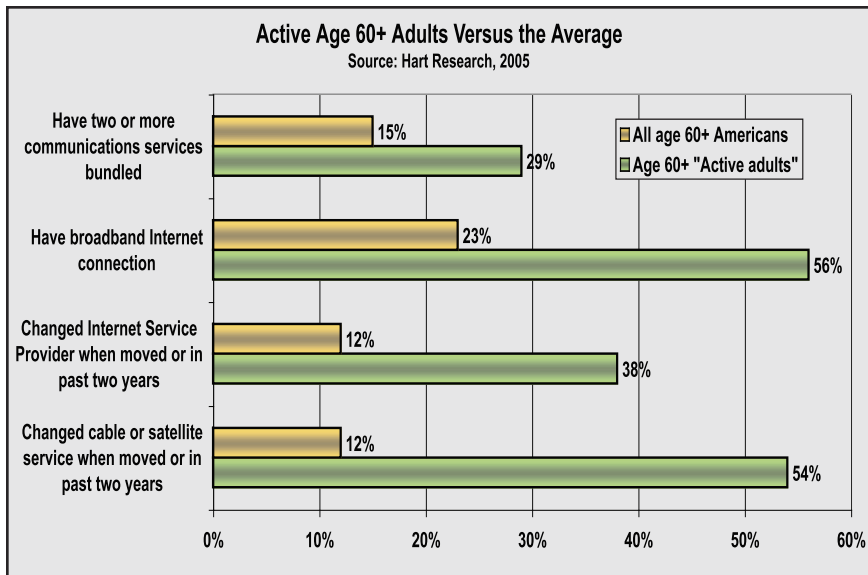
The single biggest reason for deploying VoIP is fear that traffic would otherwise migrate to competitors’ networks. This view is especially true among respondents from incumbent telcos; more than three-quarters saw fear of traffic loss as important or critically important to their VoIP strategy.

More than 75 percent of survey respondents said their company had already deployed VoIP in some part of its network, and within 12 months that figure will rise to almost 90 percent. But more than half of respondents said that less than 10 percent of traffic, both access and core, was VoIP today, and the proportion of customers with VoIP-enabled terminals or handsets was even lower.

Most network operators with softswitches deployed in their network have opted for integrated devices – but the data suggests there will be a trend toward distributed softswitches in the next two years.

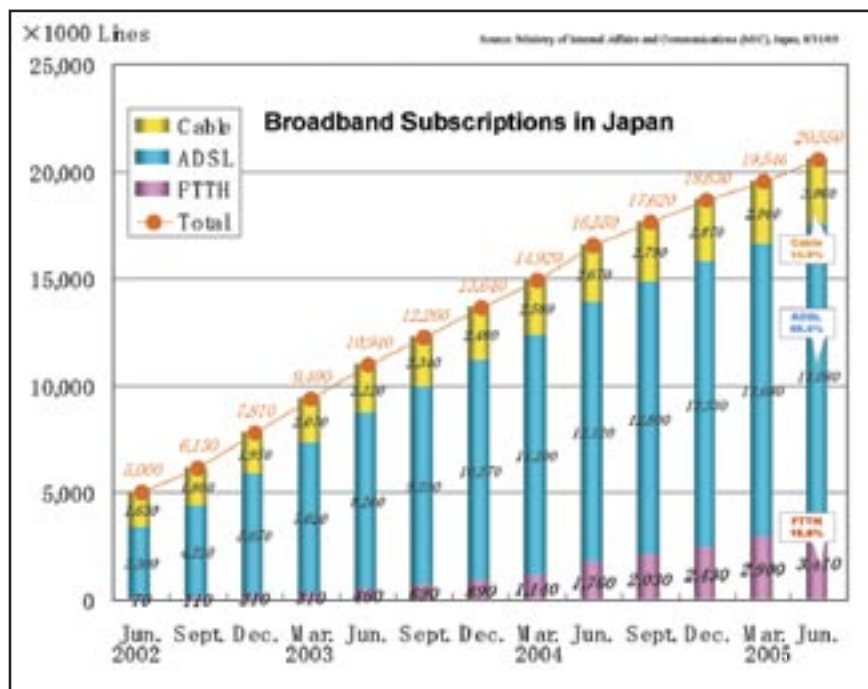
Access media gateways are the most widely deployed VoIP network equipment today, and 84 percent of respondents expect to be using them within two years. However, the highest growth in uptake of VoIP equipment is expected to be in media servers and session border controllers or other policy control equipment.

The Future of VoIP: A Heavy Reading Service Provider Survey costs \$2,950 and is published in PDF format. The price includes an enterprise license covering all of the employees at the purchaser’s company. Purchasers of the report also gain access to the full survey results for targeted analysis in a searchable database. The online database allows for segmentation of results by a range of factors, including service provider type, geographic location, and respondent job title. For additional information, contact Dave Williams, 858-485-8870 or at dave.williams@heavyreading.com.



Target the Right Adults

There are huge differences among adult Americans over 60, says Thomas Reiman, president of The Broadband Group. Quoting new data from Hart Research at the BBP Broadband Summit last month, he says identifiable “active adults” are two to four times more likely to buy and use broadband services (see chart). For more information, contact him at treiman@broadbandgroup.com or go to www.broadbandgroup.com.



Latest from Japan: 3.5 million FTTH Users

Takeo Osawa from TEPCO (Tokyo Electric Power) reported the latest broadband subscriber data from Japan, at the BBP Broadband Summit last month (see chart). FTTH subscribers topped 3.5 million in June, but ADSL still serves more broadband in Japan than any other technology. The total in Japan’s competitive market, more than 20 million.