

VoIP: The Wireless Revolution

This whitepaper is an extract from:

Converged Wireless VoIP Handsets & Equipment
Current Markets (2005-6) & Forecasts (2007-12)



VoIP~ The Wireless Revolution

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Introduction

Wireless VoIP (Voice over Internet Protocol) technology has just started to make an impact in the telecommunication space. Most of the industry pundits consider WVoIP as the application that is going to revolutionise the whole telecommunication market. Even though there are numerous challenges in supporting VoIP over Wi-Fi (Wireless Fidelity) telephony, the present infrastructure is well equipped to handle VoIP over Wi-Fi calls. Issues like security, handoffs and QoS (Quality of Service) have been addressed by various standards that have emerged over the last couple of years. With large shipments of VoIP over Wi-Fi devices already out there, one could easily predict that next big thing in telecom space is WVoIP technology. Access Points, WLAN (Wireless Local Area Network) Switches/Mobility Controllers, 802.11 Chipsets and Wireless handsets that support VoIP are being shipped in large volumes in all parts of the world.

WVoIP technology is getting more exciting and interesting everyday, with other new technologies like IMS (IP Multimedia Subsystem) coming to the picture. The Interoperability between wireless and cellular infrastructure is a tough technical challenge. The hand-off and roaming in the Cellular/VoIP over Wi-Fi convergence arena, is more complex than the simple handoff challenges from one Access point to another. The vendors are all geared up to address this issue and lot of work has been done already.

Current Status of Various Wireless VoIP technologies

VoIP over Wi-Fi

- VoIP over Wi-Fi technology has moved from being primarily an enterprise based application into the residential market, with many vendors starting a foray into the residential market.
- The service providers are now conducting trials of the technology with a view to commercially launching wireless VoIP services in 2007.

VoIP over WiMAX

- WiMAX technology is in its early stages. There is no WiMAX handset on the market today as WiMAX technology is not widely deployed and coverage is limited and expensive.
- VoIP can be a great application to drive WiMAX, but WiMAX has to focus on voice and data.

VoIP over Wi-Fi/Cellular Convergence

- VoIP over Wi-Fi/Cellular convergence services are not currently available on a wide-spread basis, although the technology exists today.
- VoIP over Wi-Fi/Cellular convergence services owe mainly to two technologies at present. One is the UMA based approach and other is the VCC (Voice Call Continuity) approach.

VoIP over Wireless Mesh

- VoIP over wireless mesh technology is in its infancy, although it shows a lot of potential since Wi-Fi is gaining in popularity and is becoming more prevalent in municipal areas that will enable roaming.
- The wireless mesh equipment is currently handling most of the data applications. But this market is all geared up for the wireless VoIP front in the coming years. Most of the equipment supplied by various mesh vendors is addressing the latency issue related to VoIP to a large extent.

VoIP over Wi-Fi/WiMAX Business Opportunities

The table below summarises the major drivers for various business opportunities created by VoIP over Wi-Fi/WiMAX.

Table 1: Major Drivers for Various Business Opportunities Created by VoIP over Wi-Fi/WiMAX Technology

Business Opportunities	Major Drivers
Residential Market	VoIP over Wi-Fi penetration in residential markets will be driven by the promise that consumers can take their home phone number with them to their neighbourhood hotspot.
SMB Market	VoIP over Wi-Fi can enable mobile handsets to operate free of cellular service charges when used within the range of an SMB wireless LAN.
Enterprise Market	The enterprise market is driven by applications because they need to have toll quality voice and mobility. VoIP over Wi-Fi technology will also provide mobility for workers both within the enterprise facility and in the outside world reducing the need for expensive wired office PBX systems and phone installations.
Developing Countries	The developing countries can leapfrog wired telephone systems and go straight to wireless. Wireless VoIP has a real future in developing countries.
Greenfield Deployments	The systems can be put together much faster because there is no infrastructure to wire and no concrete to drill through. So, there is wireless technology from core to client.

Source: Juniper Research

VoIP over Wi-Fi Equipment Trends

Some of the major VoIP over Wi-Fi equipment trends are summarised below.

Access Points: There is a trend towards increasing number of radio channels supported by Access Points.

WLAN Switches/Mobility Controllers: The Mobility Controllers work in tandem with Access Points (instead of being independent of them) to improve QoS, call handoff, etc.

Single mode VoIP over Wi-Fi handsets: Most of the single mode VoIP over Wi-Fi handset manufacturers are actively either designing or planning to ship dual mode phones.

Dual mode Cellular/ VoIP over Wi-Fi handsets: The first trend to notice in the dual mode handset market is the increasing number of dual mode handsets that are becoming available.

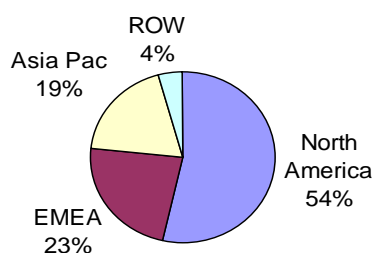
Single mode VoIP over Wi-Fi handset chipsets: The chipset vendors are putting hardware accelerators in their platforms in order to enable the encryption and decryption of the data that goes over the IP network.

VoIP over Wi-Fi Equipment Market

July 2005-June 2006

The figure below shows the percentage of revenues from different VoIP over Wi-Fi equipment regions in the period July 05-June 06.

Figure 1: Percentage Regional Revenue Contribution from VoIP over Wi-Fi Equipment - July 05-June 06

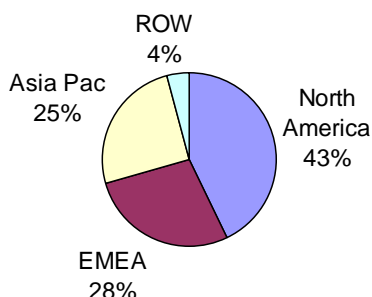


Source: Juniper Research

Forecast by 2012

Based on the growth expected by the vendors and our understanding of the market, the chart below shows the percentage of revenues expected to be generated by VoIP over Wi-Fi equipment by region by the year 2012.

Figure 2: Percentage Regional Revenue Contribution from VoIP over Wi-Fi Equipment by 2012



Source: Juniper Research

IMS Benefits/Deployments for Wireless VoIP Services

Benefits: IMS allows wired and wireless service providers to deliver and bill multimedia services built on applications that leverage IP. IMS solves many of the VoIP related Internetworking issues such as fast handoff in disparate physical network technologies, such as Wi-Fi to cellular to WiMAX as a SIP based, TCP/IP traffic stream. Operators see UMA and IMS as extremely complimentary because UMA lets them to take IMS application on to Wi-Fi and IP networks.

Deployments: The IMS deployments for Wireless VoIP are beginning to surface across all parts of world. China Unicom has technical trials under way. Vodafone Group (UK) has decided to go for IMS based next generation wireless services. The company will be using IMS offering from Nokia and Ericsson. Tradingcom Europe Group, Europe's telecommunications capacities trader, has selected Sonus IMS architecture as the foundation for Tradingcom's complete, end-to-end IP-based voice network.

Order the Full Report

Converged Wireless VoIP Handsets & Equipment: Current Markets (2005-6) & Forecasts (2007-12)

This white paper is taken from the study **Converged Wireless VoIP Handsets & Equipment: Current Markets (2005-6) & Forecasts (2007-12)**, which analyses the key predicted market developments and provides insight for vendors and other market players. There are also 33 case studies of the key industry players and their progress into the WVoIP market.

The report provides comprehensive WVoIP Worldwide Revenue forecasts, plus shipment and revenue forecasts for Enterprise Access Points, Enterprise WLAN Switch/Mobility Controllers, Worldwide Single Mode VoIP over Wi-Fi Handsets, Worldwide Dual Mode Cellular/VoIP over Wi-Fi Handsets, and Worldwide Single Mode VoIP over Wi-Fi Handset Chipsets. These forecasts are broken down into four regions (North America, EMEA, Asia Pacific and Rest of World).

For more details on this report visit the website www.juniperresearch.com or phone + 44 (0)1256 830002.

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Basharat has specialist expertise in wVoIP, IPPBXs, Enterprise Voice Gateways, Desktop IP Phones, ATAs, Single mode Wi-Fi handsets, dual mode Cellular/VoIP over Wi-Fi handsets, VoIP over Wi-Fi chipsets, Access Points and WLAN Switch/Mobility Controllers. He has carried out research in the areas of VoBB (voice over broadband) and country case studies of Singapore, Philippines, New Zealand, Hong Kong, Malaysia, Indonesia and Australia. Basharat has a B.E. in Mechanical Engineering.

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