

mobiVoIP – Whitepaper



VoIP for Palm, *finally*: Ready for the Prime Time

Voice over Internet Protocol (VoIP) technology enables converged voice and data communications. Wireless industry leader, [MantraGroup Inc.](#), makes the first attempt in the Palm industry to bring VoIP technology to your Palm PDA with its mobiVoIP solution. mobiVoIP allows you to place a telephone call directly from your PDA thus expanding your PDA's capabilities to be used as a converged device.

Executive Summary

[MantraGroup Inc.](#) is a popular name in the Palm industry which has provided a popular unified messaging solution in the past. As a communications technology oriented company, we believe in the power of human communication and continue to better our messaging solutions. We have analyzed the growth of VoIP technology in terms of the market available for Palm PDAs and saw the need for a converged communication solution for PDAs. Our idea is to transform the millions of Palm PDAs available in the market into powerful converged communication devices.

Business Challenge:

New technologies allow you to make telephone calls through your PC using a new and growing technology known as "Voice over Internet Protocol" or VoIP. With VoIP technology, the call is routed through your internet and gets terminated to a PSTN or other VoIP client. Instead of passing the telephone call to your telephone operator, it uses your existing internet connection and thereby provides cost savings on your phone bills.

Market research firm, ABI Research has forecasted that **"Dual mode cellular/voice over WiFi enabled handsets will surpass 50 million by 2008 and voice over IP will replace the cellular networks"**.

Industry Landscape:

Since the introduction of Palm Pilot, the Personal Digital Assistant popularly known as PDA has become an important component to organize in business affairs. [Palm Inc.](#) has reported that they have shipped 1.2 million mobile devices during the last quarter of 2005. Of those, about 44 percent were smart phones with the rest are PDAs.

With the ever increasing demand for PDA functionalities, mobile phones have started incorporating them and the convergence is taking place at a rapid pace. Gartner predicts that **"By 2010 all devices will be smart phones with PDA capabilities"**.

The Solution:

[MantraGroup](#), realizing the need for a VoIP solution has developed mobiVoIP, the first application to bring VoIP technology to the Palm PDAs allowing you to call a telephone.

User Benefits:

mobiVoIP's capabilities can help businesses realize competitive advantages through:

- Increased productivity with your PDA and the usability of the PDA as a mobile phone
- Lower communication cost
- **Free** calls within the mobiVoIP community

mobiVoIP allows you to call any telephone in numerous countries including United States of America, Canada, Mexico, UK, Germany, Italy, Switzerland, Australia, New Zealand, Singapore, Hong Kong, China, Taiwan and MANY others.

mobiVoIP Architecture:

mobiVoIP comes as a client application for Palm OS devices. It is a typical SIP client that can connect to VoIP servers. The VoIP server will respond to the client's input requests and plays an important role in placing calls to traditional telephones or to other mobiVoIP clients.

Unlike the standard telephone call which gets routed through the telephone operator, mobiVoIP calls are routed through the internet.

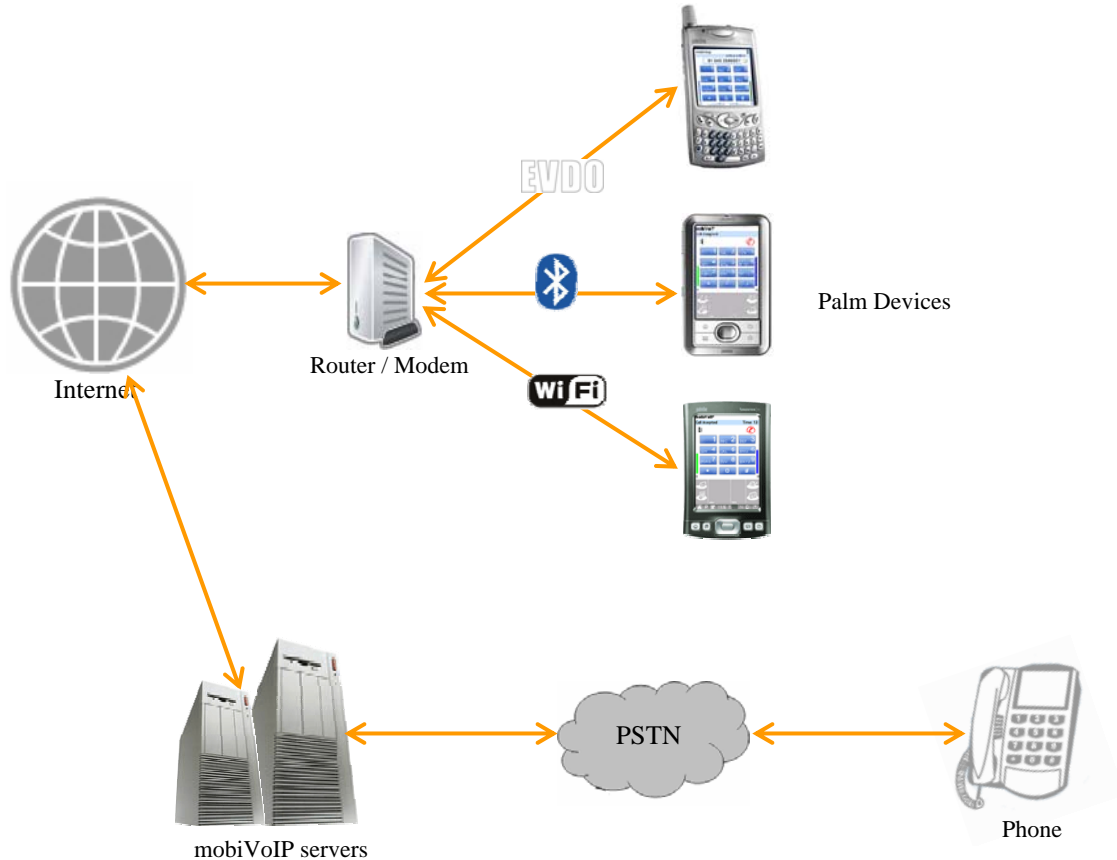


Figure 1: mobiVoIP Architecture

Requirements:

Devices with Palm OS 5.0 or greater with a processor of at least 200 MHz are supported.

mobiVoIP is compatible with Palm Treo™ 650, Tungsten™, LifeDrive™ and Zire™.

mobiVoIP can use connection types like Bluetooth, [pause] WiFi [pause] depending on what the device supports.

Bandwidth requirement depends on the Codec that you use:

G.711: Suitable for wideband connections with a minimum bandwidth of **160kbps**.

GSM: Suitable for narrowband connections with a minimum bandwidth of **60kbps**.

Use of headset is recommended to minimize the noise.

Features:

- ✓ Ability to make **PSTN calls over IP!**
- ✓ **Free Calls** within mobiVoIP community!
- ✓ **Caller-ID** [via SIP]
- ✓ Profiles Settings Dialog [for configuring user Account]
- ✓ **Secure Account Authentication** using SIP MD5 Authentication
- ✓ **Network Settings** Dialog [for IP address related settings]
- ✓ **Automatic IP resolution** [via STUN servers]
- ✓ Detecting **Dynamic IP** [when STUN is disabled]
- ✓ **Codecs** supported: **G.711** and **GSM 6.10 FR** [GSM 6.10 FR for low speed connections > **60kbps**, G711 for high speed connections > **160kbps**]
- ✓ **Call Timer** [should be enabled from Debug Prefs]
- ✓ **Audio Configuration** Dialog [to save your bandwidth with voice activity detection]
- ✓ **Calibration Test** - estimate your environment noise and use for noise suppression.
- ✓ **Noise Suppression** - a great feature to save your bandwidth usage - use your connection only to transmit your voice.
- ✓ **Touch-tones** [DTMF]
- ✓ **Mute** Speaker/Microphone
- ✓ **Lookup Phonebook** - Dial right from your contacts.
- ✓ **Bandwidth Test** - a simple echo test to get an estimate of your bandwidth! [latency = time to hear your voice back/2; (as your voice makes a round trip)]
- ✓ Recommended Connections – **Wi-Fi, Bluetooth**
- ✓ Treo 600/650 extras - Easy five-way navigation
- ✓ non-Treo extras - No worries of network disconnection on device entering sleep mode
- ✓ Real time auto update - over the air.



Conclusion:

With mobiVoIP, you can enjoy huge cost savings on your phone call without compromising on voice quality. Additionally, mobiVoIP expands your existing PDA's capabilities to be used as a telephone eliminating the need to invest in buying a separate telephone for voice communication.