

Femtocells -- Effective, Efficient, Automated Local Base Station Markets Expected to Reach \$9 Billion By 2014

LEXINGTON, Massachusetts (May 8, 2008) – WinterGreen Research announces that it has a new study on the topic of femtocells. Systems provide modular value added services delivery of wireless communications and SIP based push technology presence implementing flexibility for people. The femtocells are designed for achieving automation of communications connectivity around the home and office. Adoption of advanced systems is anticipated to be rapid.

Femtocells, are they a secret gathering of female revolutionaries or a miniature mobile phone base station? Probably the latter, but it is intriguing to think about the former. Lets see, oh well, femtocell technology is an industry-changing innovation. Dual-mode WiFi/cellular phones are not nearly as cost effective as femtocells. Femtocells are emerging as the main technologies that will link the indoor and outdoor networks. Femtocells are particularly attractive to mobile carriers.

Femtocells are emerging as a technology that lets wireless phone use in homes and offices become a viable alternative to landline telephones. The ability to leverage the Internet makes femtocells an economic force in the marketplace; it brings the industry changes in the way voice is delivered.

Femtocells support SIP based broadband applications. Femtocells will most likely work in a telecommunications environment that has multiple co-existing technologies that are deployed by different carriers to address their specific customer bases, business models, and eco-systems.

IP Multimedia subsystems promise to play a significant role in the core network evolution. The consumer always prefers achieving control over the network as much as possible. The core backbone infrastructure is provided by the services providers, but the edge of the network is evolving functionality. Femtocells provide a way for consumers to go to the local store and purchase a device that optimizes the existing 3G handset ability to have better access to NGN IP services.



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This aspect of optimizing packet services from the home gives the consumer better control. No one will defer to the service provider if they can go out and purchase their own device for somewhere between \$300 and \$100 as the volumes increase and the prices decline. Service providers may think that they can control the access to the devices, but in competitive markets, the customer will always choose control over his own environment vs. giving the services provider control over the network.

Femtocells improve the quality of service of 3G networks indoors. Even 2G and 2.5G coverage can be patchy. Mobile users can enjoy voice and data services from home. One barrier to rollout is the need to reduce the cost per unit of the hardware. Initially it may be that operators provide femtocells to customers as part of a service plan.

Carriers have realized that it would be three years before the cost of the femtocell will reach \$100. They are now considering renting out femtocells to users for a long contract period, rather than allowing them to buy it outright.

Cisco has interest in the emerging technology with an investment in ip.access, a Cambridge-based femtocell manufacturer. This is opening up the possibility of femtocells being integrated into other consumer entertainment hardware, such as set-top boxes, which Cisco already sells. Because femtocells provide a way for mobile operators to handle backhaul, calls would go from the handset, to the femtocell, down the broadband connection, back onto the cellular network. This beats having to set up lots more base stations.

Ubiquisys, the Google-backed company is providing the femtocells for O2, along with 12 other trials around the world. It provide a technology that listens in to the existing GSM and 3G network signals to establish if the licensee is allowed to transmit here. This provides the advantage of allowing network operators to lock the femtocell to one physical location or more, for a small fee.

The original idea of femtocells was to provide cheap calls, but with the cost of calling so low there has been a clear shift to data, with O2 citing the iPhone as a clear driver: Apple iPhone is already driving unheard-of levels of mobile internet usage, and the introduction of flat rate data tariffs is expected to increase this further.



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Ironically, the iPhone does not work with the femtocells O2 is deploying as they are 3G-only devices. O2 is looking ahead to the next generation handset from Apple. O2 uses femtocells to drive uptake of their broadband offering. Network operators risk deploying the technology on ADSL connections. O2's DVB-H trials show that half mobile-TV viewing is done in the home, so a large-scale femtocell deployment provides them with the opportunity to become a major provider of video to the home.

Google has said it plans to bid in a planned auction of wireless airwaves. It could use femtocell technology to quickly roll out wireless services in the U.S. By deploying a femtocell-like system, in a matter of a year they might be able to reach more than 50% of the U.S. population. Google could deploy femtocells at malls, on city streets (by mounting femtocells on street lamps), and along major highways. Then it might strike roaming agreements with other carriers to offer users wireless service outside the home while it builds out its wireless towers.

If Google set up the wireless telephone business, they could offer communications free, basing the revenue model on advertising. If calls go out of the Internet through the femtocell, they could be handled in the same way that Google Talk works now, and there would be no need for a wireless services provider.

Services providers cannot service devices in the home the cost of truck tolls is too high. Just as Verizon started out offering routers to the home owner for fiber services, those devices were not supported and customers are told to go to the local store and purchase a router.

Femtocell trials are achieving success. Rolling out a femtocell-based service is dependent on building an end-user initiative that would create demand for a femtocell. Improved indoor coverage can be delivered by repeaters or additional macro-cell base stations. Improved capacity would follow. Femtocells create the need for subscribers to purchase home based devices. The value in FMC services comes when strong 3G users need more capacity to transmit to the internet from inside the home or office.



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Markets initially at \$434 million in 2009 reach \$9 billion by 2014. The rapid growth occurs because to the large size of the wireless handset markets, the billions of subscribers that must be supported. The femtocells provide core infrastructure at a lower price than other alternatives. The local home base station gives the consumer a measure of control over the network that is useful.

WinterGreen Research is an independent research organization funded by the sale of market research studies all over the world and by the implementation of ROI models that are used to calculate the total cost of ownership of equipment, services, and software.

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