

Mobile telecoms

Small, but disruptive

Might femtocells be the personal computers of the wireless industry?

TECHNOLOGY conferences often resemble massive religious services, worshipping yet another digital calf. The Mobile World Congress, the wireless industry's largest gathering, which took place this week in Barcelona, is notorious for its tendency to bless a new technology as the "next big thing" each year. Its choice this year? Femtocells, or tiny wireless base-stations, which prompted a flurry of announcements and chatter about their prospects. Some even likened them to personal computers, saying that they will be to the wireless industry what PCS were to the computer industry. Might femtocells really be that disruptive?

"Femto" is the metric prefix denoting one quadrillionth (million billionth) of a unit. Femtocells are not that tiny, but they are very small, low-power versions of the radio towers and their wardrobe-sized base-stations used in mobile-phone networks. Hooked up to a home's broadband-internet connection, femtocells provide solid indoor coverage and allow residents to make cheap calls using their existing handsets. Leave the house while chatting, and your call is automatically handed over to the wider mobile-phone network.

Network operators will also benefit. Femtocells could reduce the load on their

infrastructure, saving them from building more radio towers as they add more subscribers and introduce high-speed multimedia services. The technology also gives them a foothold in the home, where most telecoms services are consumed, and could even make subscribers more loyal.

Given these advantages, analysts expect femtocells to spread quickly. ABI Research, for instance, reckons there could be 70m in use by 2012. But the industry has a

few problems to solve first. One is their ease of use: subscribers will be expected to set femtocells up themselves. Another is interference: too many femtocells in close proximity could interfere with each other, or with existing mobile networks.

Yet the biggest hurdle is the economics. Today the femtocell hardware costs around \$200—twice what operators deem acceptable. Operators will also need to devise attractive pricing and service bundles. Though many have announced trials, only one operator—Sprint, in America—is actually selling femtocells. Sprint charges \$50 for the device, and unlimited calls from the home cell then cost \$15 per user per month, on top of the existing calling plan. (Users must provide a broadband connection, to which the femtocell connects.)

Femtocells are not expected to become common until 2009 at the earliest. But if they do become popular, they could make new things possible. Femtocells could serve as "digital filling stations", for example, allowing people at home to download videos, music and other large files onto their handsets quickly via broadband before heading out of the door.

Femtocells may even change the way networks are designed. At the moment they are seen as add-ons to existing networks. But in new networks femtocells are likely to play a more central role, to the detriment of big, costly radio towers. This would be bad for the big telecoms-equipment firms, such as Ericsson, Nokia-Siemens and Alcatel-Lucent, which sell the gear used in today's networks. It also may explain why femtocells have so far mostly been pushed by start-ups, such as Airvana, ip.access and Ubiquisys.

Femtocells are indeed reminiscent of personal computers, in that they threaten to disrupt the industry. But whether they will dethrone big base-stations, as the PC dethroned minicomputers and mainframes, remains to be seen. After all, the mobile industry's "next big things" often turn out to be smaller than expected. •

