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Connecting to Wireless Margins

By Erik Sherman
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Margin Master

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There are a lot of technologies lurking on the wireless horizon -- ultrawideband, WiMAX and ZigBee, to name a few. But until they are generally available in the marketplace, notebook OEMs **don't have to be satisfied with the small increase in margin** offered by the standard (and now heavily commoditized) Wi-Fi approach.

According to market analyst firm Yankee Group, **other complementary wireless technologies** can boost profits for OEMs willing to change how they think about and package the products. Two in particular stand out:

- Personal area networks (PANs); and
- 3G mobile networks.

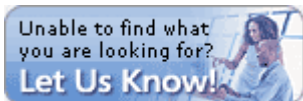
They differ in the distance covered and the benefits offered to users.

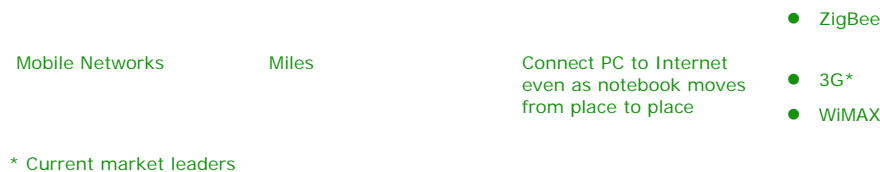
PANs are mostly associated with Bluetooth support in cellular headsets and PDAs. However, their flexibility in connecting notebooks to peripherals without a tangle of cords is a powerful and underutilized tool for OEMs, says Philip Marshall, director of wireless mobile technologies for Boston-based Yankee. When used properly, **Bluetooth offers OEMs a golden opportunity** to distinguish what may otherwise be perceived as "me too" static notebooks with innovative mobile solutions aimed at particular vertical niches.

For example, mobile executives might need headsets for IP-based telephony (see "[VoIP Notebooks Dial In for Dollars](#)," December, 2004, OEM Connect); remote pointers and printers for presentations; and software to synchronize their cell phones with a contact list on their notebooks. Similarly, **students may pay more for portable external speakers**, stereo headsets or a stylish wireless mouse.

Building on Wi-Fi

Wireless Type	Range	Primary Function	Technologies
Wireless LAN (WLAN)	Hundreds of feet	Connect PC to data network	<ul style="list-style-type: none"> • Wi-Fi*
Personal Area Network (PAN)	Tens of feet	Connect PC to data and I/O peripherals	<ul style="list-style-type: none"> • Bluetooth* • Ultrawideband





Source: Yankee Group, June 2005

PANs Pay Off

Fortunately, there are Bluetooth peripherals to serve all these needs. While users can purchase them on their own at electronics stores, a more profitable approach is for OEMs to bundle at least some preconfigured Bluetooth devices at the time of the original notebook sale. According to mobile computing and wireless analyst Andrew Seybold, Bluetooth-enabled peripherals can **add anywhere from \$30 USD to about \$120 USD to the retail price**. OEMs receiving 50% discounts from suppliers would have the opportunity to make an extra \$15 USD to \$60 USD per unit sale, for units sold directly. (Units sold through retailers and dealers will be less as some percentage of the sale will go to them). Even on the low end, selling three peripherals could add \$45 USD in margin to a single notebook.

Because surprisingly few notebook OEMs currently provide Bluetooth support in their notebooks, Seybold believes **the timing is good to consider a Bluetooth bundle** (see "[Building a Better Bluetooth](#)," March 2005, OEM Connect). What's more, the combination of a mature technology plus reliable production has driven down the OEM cost for adding Bluetooth support to only about \$3 USD per machine.

Making the 3G Connection

3G wireless data connectivity offers another wireless option to OEMs. The **target here is people constantly on the go** -- sales people and service providers such as insurance claims adjusters, for example -- who need Internet access in multiple places.

Most mobile users today rely on Wi-Fi public hot spots for Internet access, but this is often an incomplete and unsatisfactory solution. Not only are they forced to find locations where Internet access is available; **public hot spots are rarely**

secure, so there is always the chance of a security breach. But combining Wi-Fi access with the wide area 3G data networks from cellular carriers offers some interesting possibilities for users and OEMs alike. "I never buy public Wi-Fi access," says Seybold. "When I'm in one of the cities covered by 3G, I get 300 to 500 kilobits per second connectivity" in all locations.

So long as the user is going to be in an area covered by 3G (whether powered by UMTS or by CDMA 2000) all they need is a notebook with a 3G access card to achieve Internet connectivity at roughly DSL speeds. A few OEMs are even **building in 3G access now that chipsets are available** to support both types of 3G. With access cards retailing for roughly \$200 USD, that leaves as much as \$100 USD in margin for the OEM and dealer to share.

Bulking Up on Bluetooth


Worldwide Bluetooth-enabled chipset forecast

Year	Millions of Units
2005	264
2006	384
2007	560
2008	760

Source: In-Stat/MDR, October 2004

Philip Marshall, director of wireless mobile technologies for Boston-based Yankee, warns that **neither Bluetooth nor 3G is something that an OEM should approach casually**. Many Bluetooth devices, for example, can take longer to configure than some users will tolerate (e.g., a Bluetooth notebook can require as much as five minutes to associate itself with a single peripheral). Therefore, OEMs might consider doing the set-up required in advance.

And unlike Wi-Fi, some compatibility issues also continue to plague the 3G world, where equipment that works with one carrier's network may not work with another. Whether using an internal chipset or a PC Card, an OEM will likely need to **configure the system in advance to work well with the right carrier**. That will likely mean a software approach that can switch from one carrier to another. Additional testing may also be in order, as both internal chipsets and 3G access cards are prone to signal interference. "Layout is just as important as if you were putting 3G on the motherboard," says Marshall.

Despite the restrictions, **OEMs have the tools necessary today for all kinds of useful wireless configurations**. By carefully combining and matching benefits to users and creating well-considered peripheral bundles, companies can add more value for customers -- and more margin for themselves. 

The 3G Opportunity

Global 3G wireless profile

Wireless Type	Number Available
Operators offering commercial 3G services	125
Countries served by commercial 3G operators	56
Companies offering 3G wireless devices	56
Commercially available 3G wireless devices	614
3G wireless subscribers	29.9 million

Source: eMarketer, Inc., 2005

For More Information

Countdown to a Wireless Shake-up

Demand for professionally engineered wireless networks will continue to expand.


Competing Wireless Technologies Have a Future Together

According to TechWeb.com, Wi-Fi, WiMAX and 3G will ultimately co-exist.

Bluetooth, UWB groups mesh efforts

CNET reports that vendors of Bluetooth and UWB are trying to make their technologies compatible.

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Andrew Seybold's Outlook 4Mobility (www.outlook4mobility.com ) is an affiliation of closely held

companies founded by wireless and mobility expert Andrew Seybold. Together with a team of strategic partners, 4Mobility offers unparalleled analyses of technologies and trends impacting the convergence of wireless, mobility and the Internet.

About the Author

Erik Sherman is a journalist and photographer whose technology work has appeared in *Electronics Design Chain*, *Electronic Business*, *Electronics Movers and Shakers*, MIT's *Technology Review* and *Newsweek*.

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