SURVEY METHODOLOGY

This *Heavy Reading* study was conducted in two stages. In the first stage, a list of product categories and vendors was developed using a report entitled "Who Makes What" on the Website of *Unstrung*, a publication of *Heavy Reading*'s parent company, Light Reading Inc., focusing on the wireless industry. The initial version of the report, posted in March 2004, included a preliminary set of categories and descriptions with lists of vendors and invited readers to propose revisions to the categories and lists. The project was then publicized via email broadcasts to *Unstrung* readers. Based on suggestions and comments from readers, changes were made to the product categories and vendor lists.

In the second stage of the study, an online questionnaire was developed based on the product categories and vendor lists from the refined "Who Makes What" report. Potential survey respondents were then solicited via email to participate in the study. The survey was conducted from April 6, 2004, through April 23, 2004.

The questionnaire was constructed so that respondents answered market perception questions involving only those product categories with which they claimed to be familiar. The following ten categories were included in the final study:

- CDMA2000 and GSM/GPRS/EDGE base transceiver stations (BTSs)
- UMTS Node Bs
- CDMA2000 and GSM/GPRS/EDGE base station controllers (BSCs)
- CDMA2000, GSM/GPRS/EDGE, and UMTS microcells and picocells
- UMTS radio network controllers (RNCs)
- Serving GPRS support nodes (SGSNs)
- Gateway GPRS support nodes (GGSNs)
- Packet data serving nodes (PDSNs)
- Home agents
- Accounting, authentication, and authorization (AAA) servers

*Heavy Reading* solicited participation from potential respondents via email invitations targeted specifically to wireless service provider, consultant, systems integrator, and value-added reseller mailing lists. As an incentive, participants were enrolled in a contest to win a one-year subscription to *Unstrung Insider*, a monthly paid research service.

Survey participants rated vendors in each product category according to five criteria:

- Name recognition
- Price leadership
- Performance leadership
- Market leadership in product quality and reliability
- Market leadership in service and support

For each product category, all companies known by *Heavy Reading* to offer products in that market sector were listed for consideration by survey participants. In addition, participants were invited to submit "write-in" comments on other vendors that they perceived as being in that specific market segment, as well as on the key problems that they perceive in each product category. Finally, all participants were invited to comment on their overall perceptions of the wireless infrastructure market.
A total of 401 responses were received for the study. Only respondents who worked directly for a service provider or for a consultancy, integrator, or value-added reseller were allowed to participate in the study. Those qualifications reduced the number of valid respondents to 169.

Further information about the composition of the respondent base is presented in Section 1.4 of this report.

Vendor rankings in the product categories were determined by a simple grading system in which the leading vendor in each survey category (recognition, price, performance, quality and reliability, and service and support) received a score of 1 for finishing first in the category, 2 for finishing second, etc. Scores for all five categories were then added, with the lowest score yielding the top-performing vendor in that category. In case of ties, all vendors with the same rating received the same score (i.e., if three vendors had the same sixth-best rating in a category, all three received a score of 6 for that category).

Overall cross-category vendor ratings were determined by averaging the scores received by the vendor in question in each of the five survey categories for all product categories in which that vendor participates. For example, for a vendor appearing in three product categories, recognition scores from those categories were added and then divided by three to obtain an average rating.