EXECUTIVE SUMMARY

After two years of dismal performance following the telecom industry’s worldwide financial collapse, makers of communications chips finally started to see some evidence of a turnaround in 2003. Final revenue numbers for the year are not yet available, but the end-of-year consensus among industry watchers was guardedly optimistic, with most estimating modest growth for the sector. But even single-digit growth is welcome in an industry that saw sales plummet by as much as 50 percent from 2000 to 2002.

Any general discussion of the comm chips market has to include one huge caveat: The individual product categories that make up this diverse market are often vastly different from one another. These differences include not only market size but also the maturity and complexity of the underlying technology. The diversity of product types in this industry sector means the composite picture of the comm chips business is significantly different than the portraits of the individual categories. It’s not just the products that are diverse – buyers of comm chips tend to view the market in a very focused (read vertical) context.

Heavy Reading’s 2004 Communications Chips Market Perception Study: Transport Chips focuses on the attitudes and views of prospective buyers of comm chips that go into network equipment in the core of service provider networks. The heart of the study is an invitation-only survey gauging the perceptions of potential purchasers of communications chip technology in 22 different product categories.

449 respondents from the world’s leading systems vendors and original equipment manufacturers (OEMs) participated in the Heavy Reading comm chips survey, yielding critical market perception data for 117 different components vendors (54 public, 63 private). More than 47 percent of the respondents are employed by the world’s largest incumbent telecom equipment vendors, including Cisco Systems, Nortel Networks, Alcatel, Juniper Networks, Siemens, Lucent Technologies, Ciena, Tellabs, and Marconi.

In addition to the 22 transport categories covered, the survey included nine categories access/enterprise chip products. Results for those categories are available in a separate report (see the end of this summary for details).

Key findings on market perceptions of transport communications chip suppliers include the following:
Most transport chip market segments are not dominated by a single vendor. In product categories such as Sonet/SDH data transceivers, backplane transceivers, and ATM SAR chips, top leadership scores in the survey categories rarely exceeded 20 percent – a clear indication that buyers view these segments as highly competitive.

Almost all major chip vendors have key sources of strength in specific product categories – and almost all have glaring weaknesses. PMC-Sierra was recognized by more than 85 percent of prospective buyers in the framer/mapper chips category, but less than 40 percent of all backplane transceiver and search engine chip buyers identified PMC-Sierra as a supplier in those market segments.

Results suggest that many buyers of commodity-class components don’t look beyond their current suppliers to evaluate products from other vendors. In the laser driver chip category, respondents on average identified fewer than four suppliers, and only two vendors were named by more than 50 percent of those respondents. In several product categories, 20 percent or more of prospective buyers did not name market leaders for price, product performance, product quality and reliability, or service and support. Such results indicate that many buyers are content to stay with their current suppliers – or at least are not motivated to find better products or deals elsewhere.

Intel has achieved only limited success in establishing itself as a leading supplier of transport chips in the eyes of prospective buyers. Buyers perceive Intel as the dominant provider of network processors, but that perception does not yet extend to other product categories. By far, Intel’s weakest perception ratings came in the commodity analog chips sectors, where just over one third of all buyers identified Intel as a supplier.

Startups still have an opportunity to influence some of the developing comm chips segments. Startup suppliers of dispersion compensation chips, traffic manager chips, search engines, content processors, security processors, and circuit emulation chips have a significant opportunity to capture market mindshare, and some are on the way to doing just that. Those with the most promising prospects include Azanda Network Devices, Big Bear Networks, EZchip Technologies, Netlogic Microsystems, Velio Communications, Wintergra, and ZettaCom.

The 2004 Communications Chips Market Perception Study: Transport Chips report drills down to show what buyers think about vendors’ products within these 22 product categories:

- Laser Driver Chips
- Modulator Driver Chips
- Pre- and Post-Amplifier Chips
- Crosspoint Switch Fabrics
- Sonet/SDH Data Transceivers
- Dispersion Compensation Chips
- Framer/Mapper Chips
- Digital Wrapper/FEC Devices
- Backplane Transceiver Chips
- Circuit Switch Fabric
- Network Processors
- Standalone Traffic Manager Chips
- Search Engines
- Content Processors
- Security Processors
- Packet Switch Fabric
- ATM SAR Chips
- ATM Interworking Chips
- ATM Switch Fabrics
- Circuit Emulation Chips
- Control-Plane Processors
- Field-Programmable Gate Arrays

Survey Respondents

More than 900 responses were received for the study. Only those responses coming from employees of systems vendors, original equipment manufacturers (OEMs), and systems integrators were included in the survey database. The final base of 449 survey participants includes employees from more than 200 different companies and organizations worldwide. Specific demographic breakouts of the survey base are as follows:
Excerpt: Survey Participants by Region

- United States: 64.4%
- Canada: 13.2%
- Europe: 13.0%
- Asia/Pacific: 6.7%
- Other (incl. Central and South America and Middle East): 2.7%

Excerpt: Survey Participants by Company Type

- Original Equipment Manufacturer: 42.2%
- Systems Vendor: 51.0%
- Systems Integrator: 2.7%
- Other (incl. Consultants): 4.1%

Excerpt: Survey Participants by Job Function

- Engineering: 45.0%
- Sales and Marketing: 25.2%
- Product Management: 11.9%
- Corporate Management: 12.6%
- Other: 5.3%
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

The *Heavy Reading* study analyzes overall results for each category and breaks out results for each survey category:

**Excerpt: Top Vendors by Recognition (from Sonet/SDH Transceiver Chips)**

![Bar chart showing the top vendors by recognition.]

**DEEP ANALYSIS OF PRODUCT CATEGORIES**

In addition to survey results and analysis, the report includes definitions of communications chip product categories, along with technology and market overviews for each product sector.

*Heavy Reading’s* 2004 *Communications Chips Market Perception Study: Transport Chips* will be essential reading matter for any company selling or buying comm chips, investing in the companies that make those products – or looking to sort the leaders from the followers in this important market.

In addition to this report, *Heavy Reading* also offers the *2004 Communications Chips Market Perception Study: Access/Enterprise Chips*, which includes survey results for nine different access/enterprise chip product categories. The full report, covering the entire comm chips market, is also available. The full report includes access to a searchable database that allows subscribers to view results by critical demographic segments, including geographic region, respondent job type, and respondent company type.