The carrier Ethernet services and equipment markets continue to fire on all cylinders. Worldwide, operators large and small continue to report impressive double-digit (or higher) year-over-year revenue growth for Ethernet services, and carrier Ethernet-related equipment has been flying out the doors of many vendors.

Every significant equipment supplier, it seems, has begun to ramp carrier Ethernet marketing activity over the past nine to 12 months, to capitalize on new opportunities to support higher-performance Ethernet enterprise services, Ethernet-based consumer services, and applications such as wireless backhaul. Standards bodies such as the Metro Ethernet Forum, the Institute of Electrical and Electronics Engineers (IEEE), the International Telecommunication Union (ITU), and the Internet Engineering Task Force (IETF) also continue to pour enormous resources and energy into developing common approaches for implementing new technologies related to carrier Ethernet services.

*Heavy Reading* has traveled around the world and interviewed more than 50 operators over the past 18 months to stay on top of Ethernet services and equipment developments. To reinforce this fact-finding, we worked with several carrier and vendor experts to develop a comprehensive list of questions to capture the latest carrier Ethernet trends.

*Heavy Reading’s 2006 Survey of Ethernet Service Providers* provides up-to-date intelligence on carriers’ views regarding a broad range of Ethernet service, application, equipment, and technology topics. The report sheds light on the phenomenal growth expectations for Ethernet compared to traditional legacy data services, the aggressive plans of many operators to expand Ethernet services and applications portfolios, and the anticipated heavy investment in a range of carrier Ethernet equipment and technologies deployed across the metro and access networks.

This report builds upon and complements several carrier Ethernet-related reports that *Heavy Reading* has published over the past year, including: *Carrier Ethernet Switch/Router Quarterly Market Tracker* (September 2006); *Ethernet Services Carrier Scorecard: Europe* (Vol. 4, No. 7, May 2006); and *Sonet/SDH-to-Ethernet Migration Strategies* (Vol. 3, No. 21, December 2005). It also provides critical follow-up perspective to our *2004 Survey of Ethernet Service Providers* (Vol. 2, No. 22, October 2004).

The 2006 survey, conducted in the third quarter of 2006, includes responses from 158 service provider professionals representing 126 different network operators worldwide, making this one of the most comprehensive, targeted surveys of Ethernet service providers ever undertaken.
proximately 50 percent of all respondents work for service providers with annual revenues above $500 million.

**Excerpt 1: Geographic Regions Where Respondents' Employers Operate**

<table>
<thead>
<tr>
<th>Region</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S.</td>
<td>25%</td>
</tr>
<tr>
<td>Canada</td>
<td>23%</td>
</tr>
<tr>
<td>Central/South America</td>
<td>18%</td>
</tr>
<tr>
<td>Western Europe</td>
<td>18%</td>
</tr>
<tr>
<td>Central/Eastern Europe</td>
<td>16%</td>
</tr>
<tr>
<td>Asia/Pacific (Excluding China)</td>
<td>11%</td>
</tr>
<tr>
<td>China</td>
<td>7%</td>
</tr>
<tr>
<td>Middle East</td>
<td>7%</td>
</tr>
<tr>
<td>Africa</td>
<td>7%</td>
</tr>
<tr>
<td>Other</td>
<td>7%</td>
</tr>
</tbody>
</table>

**Source: Heavy Reading**

**Excerpt 2: Annual Corporate Revenues of Respondents' Employers**

- More than $5B: 25%
- $1B-$5B: 18%
- $501M-$1B: 7%
- $201M-$500M: 11%
- $51M-$200M: 16%
- $1M-$50M: 23%

**Source: Heavy Reading**

*Heavy Reading* interviews with operators, carrier financial reporting, and other data have pointed to a dramatic transformation taking place in the wireline data services landscape over the past two years that has major ramifications for established operators, challengers, and equipment suppliers. This transformation has involved an accelerating shift away from traditional TDM, Frame Relay, and ATM services toward Layer 2 Ethernet and Layer 3 IP VPN connectivity services and applications that run on top of the connections. While some operators may experience short-term growth of TDM private line revenues related to wholesale wireless backhaul applications, the longer-term trend away from all legacy services is unmistakable.

Survey responses show a clear shift in favor of Ethernet and IP VPN services. Respondents who were in a position to comment on estimated annual data services growth rates for 2006 identified Ethernet enterprise services as the fastest growing part of their data services portfolios – even outpacing IP VPNs. In contrast, the vast majority of respondents whose companies offer Frame Relay services expect those revenues to decline or stay flat for the year. The outlook is nearly as bleak for ATM and TDM private lines.
Report Scope and Structure

The **2006 Survey of Ethernet Service Providers** delivers up-to-the-minute insight into how network operators around the world are now deploying Ethernet services, and how they will change those deployment plans in the months ahead. The report is structured as follows:

**Section I** is an introduction to the report, with complete report key findings.

**Section II** shares details on the characteristics of the survey respondents, including their job functions, the type of service providers they work for, the geographic region(s) in which these operators provide services, and the annual corporate revenues of these operators.

**Section III** presents *Heavy Reading*’s Ethernet Services Framework and provides an overview of Ethernet service definitions to help readers interpret the survey data discussed in the report.

**Section IV** analyzes respondents’ views on Ethernet services and applications. This includes feedback regarding:

- Plans, customer demand, and growth expectations for Ethernet connectivity services
- Plans and customer demand for Ethernet-based business applications
- Perceived competitive advantages associated with different Ethernet service features
- Plans for Ethernet-based residential services
- Perceived challenges in rolling out Ethernet-based residential services

**Section V** examines respondents’ views on carrier Ethernet network infrastructure. This includes feedback regarding:

- Major factors influencing carrier Ethernet equipment purchasing decisions
- Perceived leaders in the carrier Ethernet equipment market
- Major factors affecting the extension of Ethernet services to more locations
- Current use of and plans for various types of carrier Ethernet equipment and technology
- The anticipated allocation of carrier Ethernet-related spending across key applications

*Excerpt 3: Expected Data Services Growth Rates in 2006*

![Graph showing expected growth rates for various data services in 2006.](source: Heavy Reading)
The report is essential reading for a wide range of industry participants, including the following:

- **Incumbent and competitive network operators**: How does your rollout strategy for Ethernet services compare with those of other service providers? Which types of services are your competitors bringing to market? How deep will the competitive field be for Ethernet services? Which technologies are settling in as the most popular choices? How do your deployment strategies align with those of other carriers?

- **Ethernet equipment suppliers**: Which types of network operators are pursuing Ethernet services most aggressively? Which types of services and which technologies are they choosing? How do your products mesh with their service deployment plans? Are there key market sectors that are slipping through the sales cracks?

- **Investors**: Which equipment makers and service providers are in the best position to capture market share in this important telecom industry sector?

The **2006 Survey of Ethernet Service Providers** is published in PDF format. Report purchasers also gain access to a searchable database of survey results allowing for detailed breakouts of respondent data, such as by:

- Service provider type
- Geographic location
- Company size
- Types of Ethernet services offered