Global Service Providers Identify Optical Equipment Leaders 2011

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INFONETICS RESEARCH

INTRODUCTION

Amidst the noise of marketing lingo and endless positioning of networking products, in the end the only thing that matters is what customers perceive and the decisions they make as a result. Our annual optical leadership survey is an attempt to cut through the chatter by gathering feedback directly from service providers on their future needs as well as their opinions on which optical companies are the leaders.

TOP TAKEAWAYS

- Ciena posted strong performance, and topped the list of vendors respondents consider to be leaders in 40G/100G technology and next gen packet-optical transport systems (P-OTS). Ciena was also named as the leading overall optical transmission and switching vendor.
- Alcatel-Lucent, Ciena, and Huawei top the list of vendors perceived by respondents as optical equipment market leaders, and these three vendors garnered the majority of recognition and responses when respondents identified leaders for specific markets and vendor selection criteria.
- Infinera is in fourth place behind these three larger vendors in most leadership areas.
- Control plane features are a critical area of differentiation, named as one of the three most important features in evaluating a supplier (even ahead of pricing). Layer 2 features are also important to many carriers. Service/support and vendor stability weren't cited by as many respondents as we expected.
- Infinera and Nokia Siemens Networks are the only vendors being evaluated for future purchases by a larger number of customers than have them currently installed.

THE 2011 SURVEY

Each year Infonetics Research surveys service providers for their opinions on which optical vendors are seen as the leaders in a number of categories. This is a summary of some of the results from our November 2011 *Optical Equipment Features and Vendor Leadership: Global Service Provider Survey*, in which we interviewed 18 service providers globally that represent 22% of 2010 worldwide telecom capex, and 20% of telecom revenue.

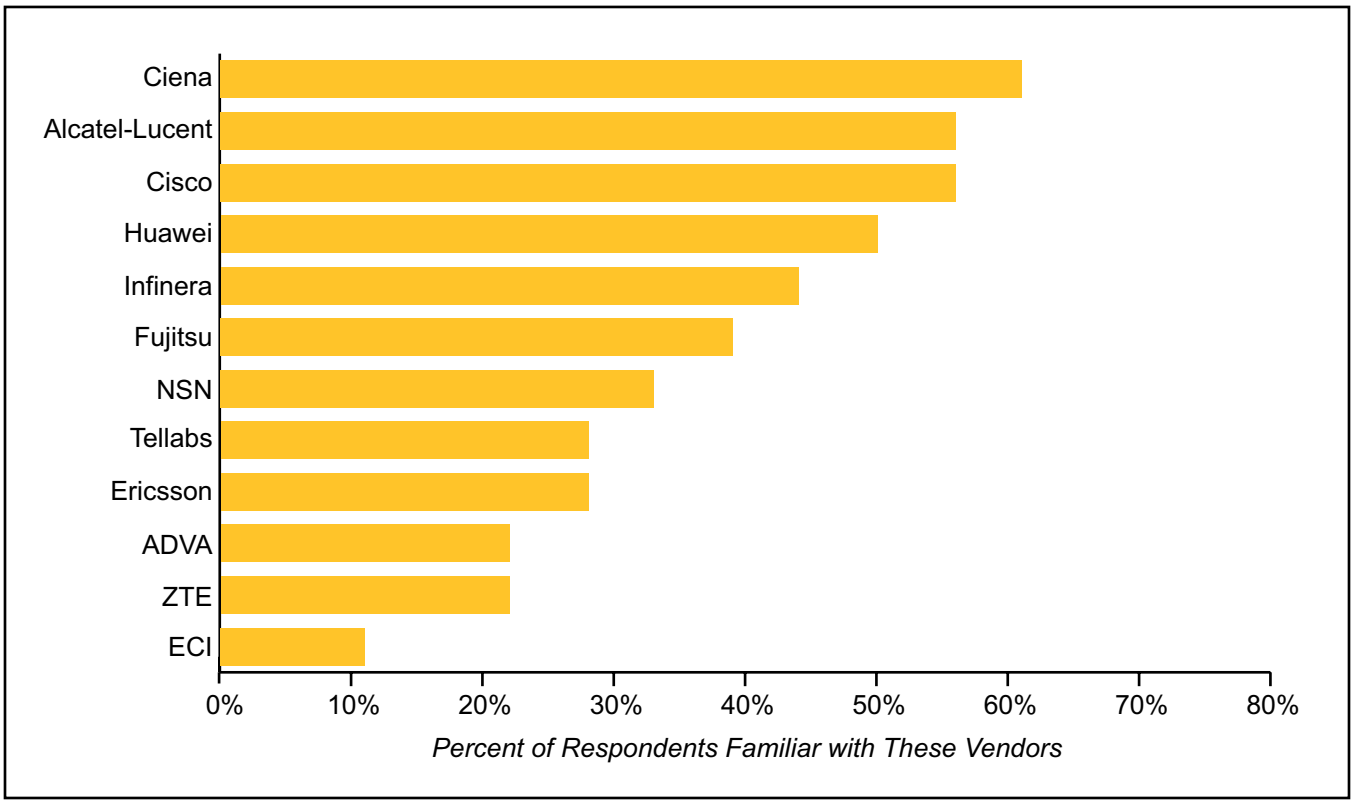
SERVICE PROVIDER FAMILIARITY WITH EQUIPMENT SUPPLIERS

It is important to understand the level of familiarity a service provider has with various vendors, particularly in a fragmented market such as optical equipment. This allows equipment vendors to see the relative market awareness of their product versus other companies.

Though familiarity with a manufacturer's offering does not necessarily translate into contract wins, vendors need buyer awareness to be evaluated as potential suppliers. Without a degree of familiarity, suppliers don't even get invited to the table. Respondents rated their familiarity with each of a list of optical transmission and switching equipment suppliers on a scale of 1 to 7, where 1 is *not familiar* and 7 is *definitely familiar*, a measure called *aided awareness*. The percentage of respondents rating each supplier a 6 or a 7, or *familiar*, is shown in Exhibit 1.

Half or more of our respondents are familiar with four optical transmission and switching equipment vendors: Ciena (61%), Alcatel-Lucent (56%), Cisco (56%), and Huawei (50%). The fragmented nature of the optical equipment business is clearly evident, with no leading cluster of vendors followed by a few niche providers. Geographical specialization by equipment companies as well as success in certain carrier verticals has created a balkanized landscape.

Exhibit 1: Service Provider Familiarity with Optical Transmission and Switching Equipment Suppliers



Source: Infonetics Research, *Optical Equipment Features and Vendor Leadership: Global Service Provider Survey*, November 2011

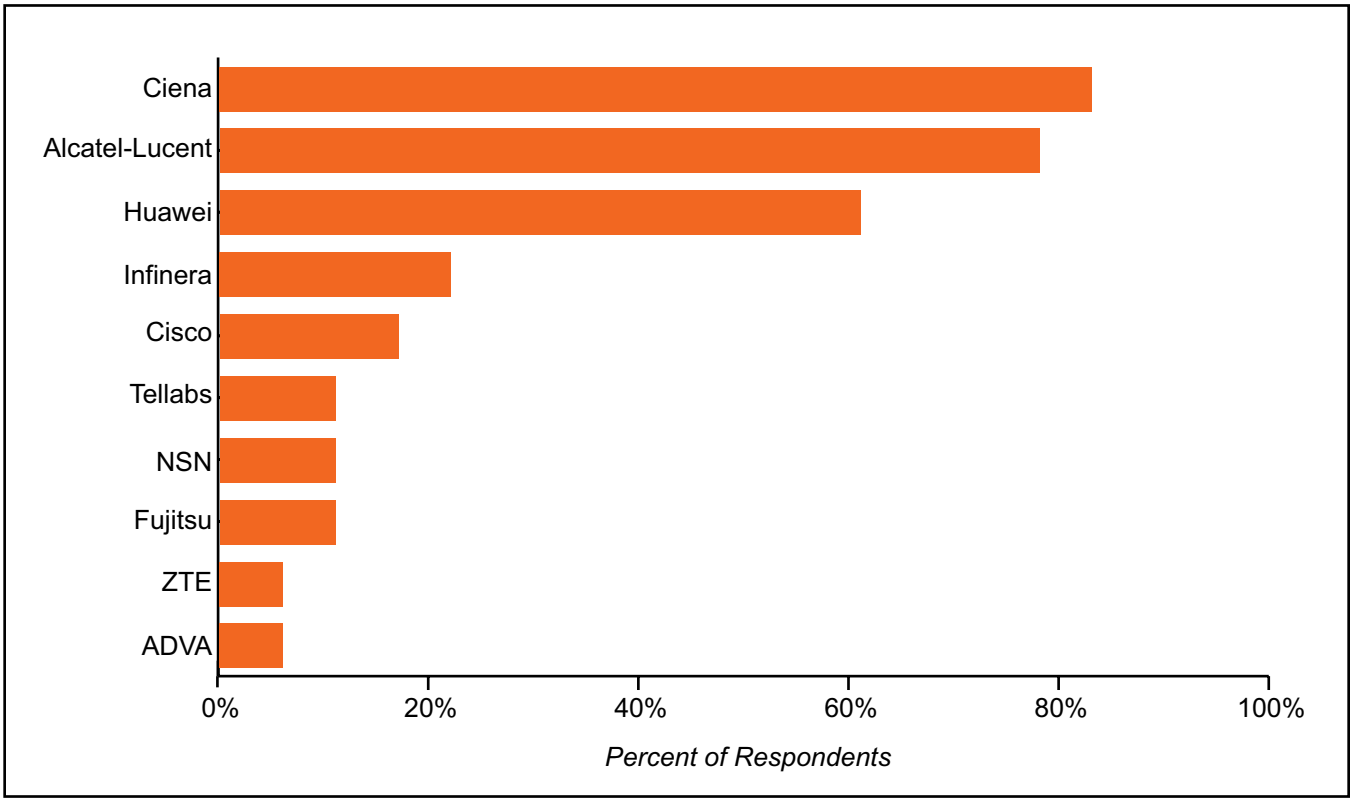
SERVICE PROVIDERS IDENTIFY LEADING OPTICAL VENDORS

In a series of open-ended questions, we asked service providers to name the three leading optical vendors in several categories. This was followed by a fourth open-ended question asking what features service providers consider to be most important when evaluating new vendors.

Ciena, Alcatel-Lucent, Huawei Identified as Leaders in Overall Optical Equipment

We first asked respondents who they consider to be the top three optical transmission and switching equipment suppliers. The three vendors most familiar to respondents took the top three spots, but Ciena edged out the others and was cited by 83% of respondents as a leader. Alcatel-Lucent followed closely at 78%, and Huawei fared well, with 61% of respondents citing them as a leader. There is a large gap after this, with the next vendor, Infinera, considered to be among the three leaders by 22%, and Cisco by 17%.

Exhibit 2: Top Three Optical Transmission and Switching Leaders



Source: Infonetics Research, *Optical Equipment Features and Vendor Leadership: Global Service Provider Survey*, November 2011

"High speed transmission is a major area of R&D and differentiation among vendors."

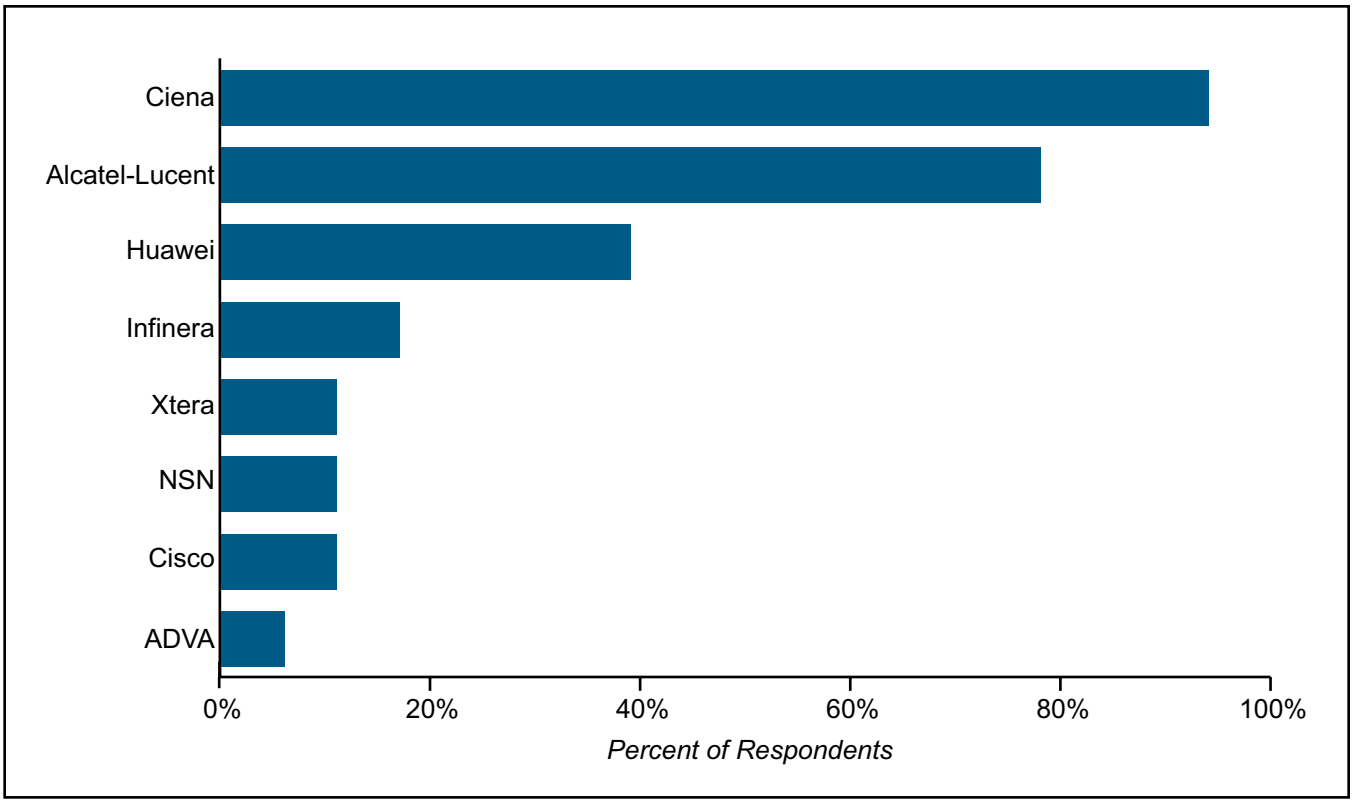
Ciena and Alcatel-Lucent Seen as Leaders in 40G/100G Transmission Technology

High speed transmission is a major area of R&D and differentiation among vendors, and we focused on this in the next question, asking respondents who they consider to be the three leaders in 40G/100G transmission technology.

The results differ materially from the previous question regarding overall optical leadership, with Ciena climbing, Alcatel-Lucent remaining at the same level, and Huawei dropping from 61% to 39%.

Alcatel-Lucent and Ciena appear in the responses of most service providers, leaving only one slot for each respondent to allocate to another vendor. These were split among Infinera, Xtera, NSN, and Cisco. ADVA made a solitary appearance. Vendors such as ZTE, Fujitsu, Tellabs, and Ericsson were omitted.

Exhibit 3: Top Three 40G/100G Transmission Technology Leaders



Source: Infonetics Research, *Optical Equipment Features and Vendor Leadership: Global Service Provider Survey*, November 2011

Ciena the Clear Leader in Next Gen P-OTS Development

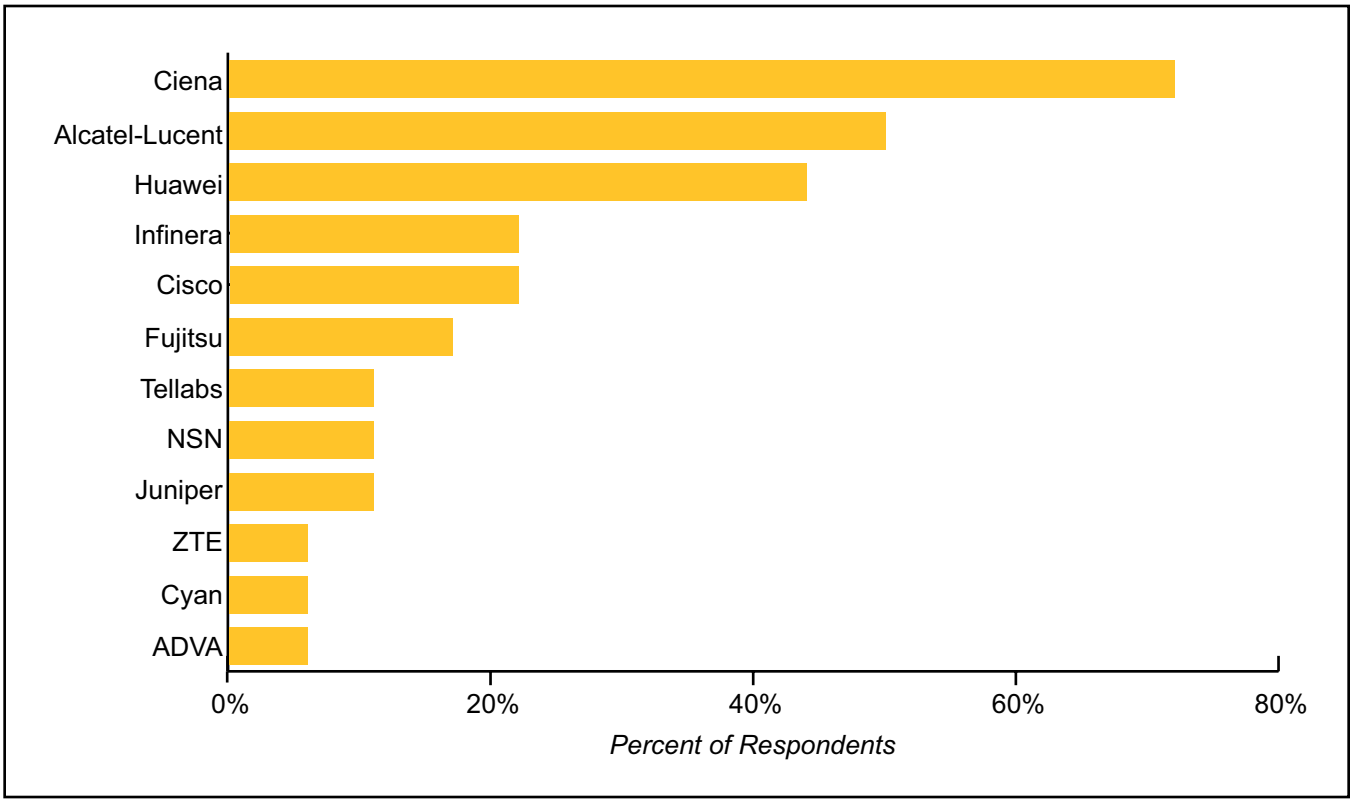
Aside from 40G/100G transmission, the other major battleground in optical equipment is packet-optical transport systems (P-OTS), which we define as:

> *Platforms with an architecture that provides Ethernet switching and circuit switching (SONET/SDH crossconnect and/or OTN) across the chassis and support connection oriented Ethernet (COE) protocols (e.g., MPLS-TP, PBB-TE, T-MPLS, switched VLANs).*

We asked respondents who they consider to be the three leaders in the development of next gen P-OTS.

Greater separation among vendors appeared, with Ciena emerging as a clear leader and Alcatel-Lucent and Huawei forming a secondary tier. Infinera is a shocker, tied for fourth with Cisco. Follow-up with respondents on this issue revealed OTN switching as the main draw, along with future MPLS capabilities. This also explains the appearance of Juniper, though in that case the reason was the MPLS capabilities of the PTX.

Exhibit 4: Top Three Next Gen P-OTS Development Leaders



Source: Infonetics Research, *Optical Equipment Features and Vendor Leadership: Global Service Provider Survey*, November 2011

Current market share leaders in the P-OTS category (Tellabs, Fujitsu, Cisco) are relatively low on the above list, indicating that market share shifts could take place in the coming years as new systems from Alcatel-Lucent, Huawei, and Ciena take hold.

IMPORTANT PRODUCT FEATURES THAT SET VENDORS APART

After asking service providers to identify the leading vendors in several areas, we wanted to understand what features are most important when they evaluate suppliers. We typically ask respondents to rate the importance of a list of vendor selection criteria, but providing a list of items pre-supposes knowledge of what is important.

Instead of offering a list of features, in an open-ended question we asked respondents what three features are most important when evaluating new vendors—the features that typically set them apart. We then grouped the responses into the categories in the next chart.

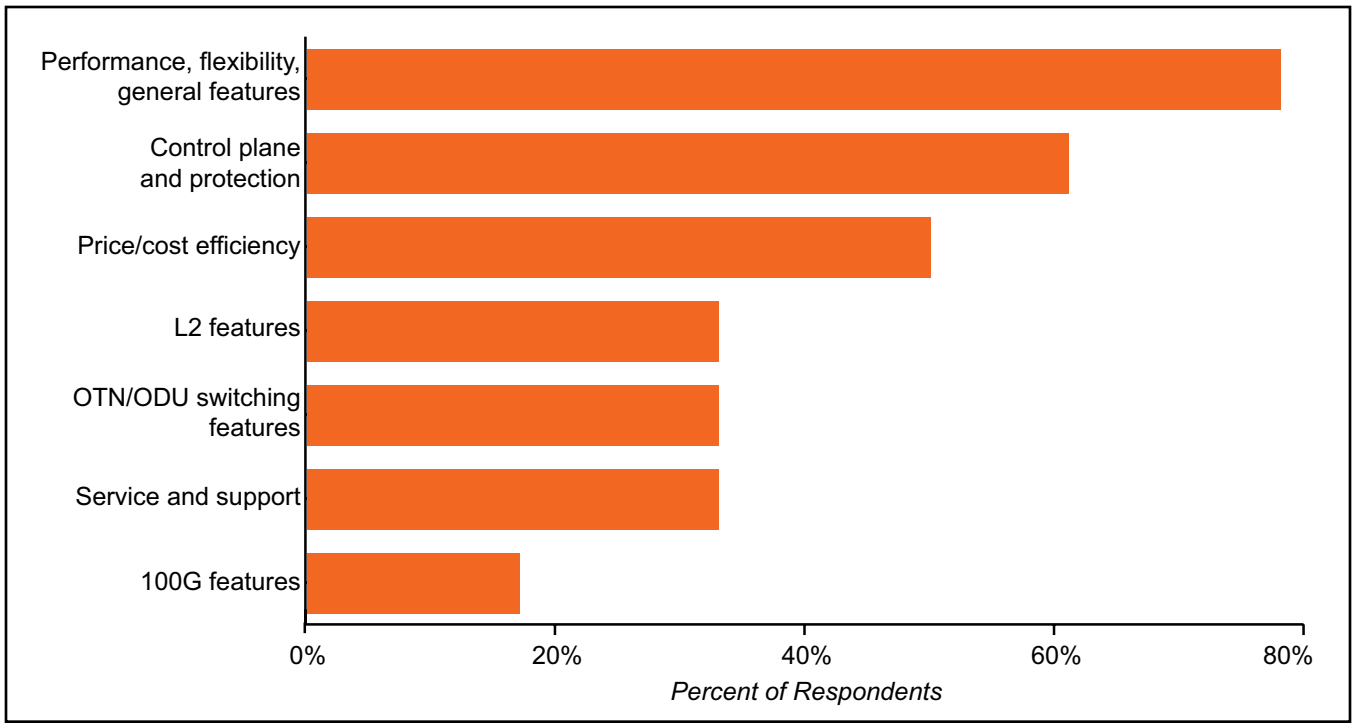
Many responses included general words such as "features," "performance," and "flexibility," with some offering more detailed responses such as "PMD performance" or "ROADM features." We classified these responses as "performance, flexibility, general features."

But more interesting is the number of responses—61%—related to the importance of the control plane. Many responses were simply "control plane," and other respondents cited "integration of management systems," "operation simplification," and "the separation of transport and services."

Half of respondents cited cost and price, an expected high percentage for this category, with a few citing metrics such as "performance and cost trade-off" and "cost and power efficiency." This is followed by detailed feature criteria related to OTN and layer 2 features. Three respondents mentioned 100G, half as many as named L2 features.

Service and support are surprisingly low on this list, and only one respondent cited "vendor stability," which is in marked contrast to the comments raised by equipment vendors. Respondents are predominantly network architects, who typically don't have much responsibility for supporting products five years down the road—perhaps that accounts for the fact that it isn't top of mind among respondents.

Exhibit 5: Evaluating New Vendors—Important Features



Source: Infonetics Research, *Optical Equipment Features and Vendor Leadership: Global Service Provider Survey*, November 2011

"Ciena is high on the list of technology leaders, with 94% of respondents placing them in the top three for this category."

EQUIPMENT SUPPLIER LEADERSHIP

We asked service providers to identify the equipment suppliers they consider to be the leaders in various selection criteria. This was a prompted question—respondents could choose up to three suppliers for each criterion, from a provided list of 12 vendors. The next table shows the relative perceived leadership of each vendor, based on the percentage of respondents who consider each vendor to be among the top three for each criterion.

Ciena is high on the list of technology leaders, with 94% of respondents placing them in the top three for this category. Alcatel-Lucent is close behind with 83%, and Infinera is in third with a good showing of 44% given their relatively lower familiarity with vendors. Huawei is fourth, with only 28% of respondents naming it as a leader.

Huawei takes pricing leadership, named as one of three leaders in this category by 83% of respondents; ZTE is close behind at 67%. Third is ADVA at 28% (followed closely by Infinera).

Alcatel-Lucent and Ciena are first in service and support, each named by 44% of respondents, and are the clear leaders in this category; Huawei and Infinera tie for second with 28% each.

Alcatel-Lucent, Ciena, and Infinera tie for first place for management tools. Ciena and Alcatel-Lucent lead for their R&D roadmap, followed at some distance by Huawei, then Infinera.

Exhibit 6: Optical Transmission and Switching Equipment Supplier Leadership

Criteria	Number 1	Number 2	Number 3
Technology	**Ciena**	**Alcatel-Lucent**	**Infinera**
Pricing	**Huawei**	**ZTE**	**ADVA**
Service and support	**Alcatel-Lucent and Ciena** (tie)	**Huawei and Infinera** (tie)	
Management tools	**Alcatel-Lucent, Ciena, and Infinera** (tie)		
R&D roadmap	**Ciena**	**Alcatel-Lucent**	**Huawei**
Total cost of ownership	**Huawei**	**Infinera**	**Alcatel-Lucent**

"Not only are Alcatel-Lucent, Ciena, and Huawei the top three companies in terms of international optical hardware market share, they are also viewed by service providers as leaders in the industry."

BOTTOM LINE

Not only are Alcatel-Lucent, Ciena, and Huawei the top three companies in terms of international optical hardware market share, they are also viewed by service providers as leaders in the industry.

Of particular note is the strongly positive perception of Ciena, which tops the list of vendors respondents consider to be leaders in 40G/100G technology and next gen packet-optical transport systems (P-OTS), as well as overall optical transmission and switching. Alcatel-Lucent and Huawei closely follow, except in P-OTS, where Ciena is a clear leader.

Infinera also made a surprisingly strong showing, indicating that service providers still consider them a key transmission vendor. Infinera and NSN are the only vendors being evaluated for future purchases by a larger number of customers than have them currently installed.

METHODOLOGY AND DEMOGRAPHICS

In September and October 2011, using online, telephone, and in-person survey methods, we interviewed 18 service providers that represent a statistically significant 20% of 2010 worldwide revenue and 22% of capex in our *Service Provider Capex, Opex, ARPU, and Subscribers* report. Our sample includes a good mix of incumbent (61%), competitive (33%), and wireless (6%) telcos, ranging from large incumbent service providers to smaller fiber-based competitive carriers, with 39% based in Europe, the Middle East, and Africa (EMEA); 39% in North America; 6% in Central and Latin America (CALA), and 17% in Asia Pacific. Each service provider interviewed has an optical transport network, and each respondent has detailed knowledge of and purchase influence for their company's optical transmission and switching equipment.

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ABOUT INFONETICS RESEARCH

Infonetics Research is an international market research and consulting analyst firm serving the communications industry since 1990. A leader in defining and tracking emerging and established technologies in all world regions, Infonetics helps clients plan, strategize, and compete more effectively.

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- Carrier Routing, Switching, and Ethernet
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