Wavelength Services in the AI Era: Opportunities for Telecom Providers

2026 Omdia Survey

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In partnership with:

NOKIA

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Executive summary

The world is in the midst of an artificial intelligence (AI) infrastructure supercycle, and optical networking is at its heart since it provides essential fiber-optic connectivity within and between data centers. Omdia forecasts that companies will spend over $9tn on data center capex through 2030, with hyperscalers accounting for the majority of this investment. This capital spend makes AI one of the biggest infrastructure buildouts in history.

Much of the AI focus to date has been on AI training, which will remain critical. But at NVIDIA's GPU Technology Conference (GTC 2026) in March, President and CEO Jensen Huang famously declared that the "inference inflection has arrived." Inferencing, however, is very different from AI training, with diverse performance metrics, traffic patterns, and adopters.

The shift to inferencing opens new revenue opportunities for communications service providers (CSPs) that have, to date, largely focused on selling dark fiber to hyperscalers. As AI adoption expands, enterprises are set to play a much larger role in AI moving forward, and CSPs are seeing increasing demand for high speed wavelength services. In addition, new market entrants, such as neocloud providers, and new market models, like managed optical fiber networks (MOFNs), are expanding AI revenue opportunities for CSPs.

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Nokia wanted to better understand global trends in AI connectivity, particularly among CSPs that sell and manage optical networks for hyperscalers, neocloud providers, data center operators, and enterprise customers. Working together with Nokia, Omdia developed and fielded a global survey to 122 CSP respondents in June and July 2026.

This report summarizes the key findings from the global survey and covers the following topics:

- 400G wavelength services
- 800G wavelength services
- MOFNs
- AI preparation, impacts, and opportunities

Key findings

The following are the key findings from this study.

Wavelength services

- **Service-level agreements (SLAs) and high service availability top the list of buying criteria for high speed wavelength services, with low latency and competitive pricing not far behind.** Survey data suggests CSPs must perform a nuanced balancing act of offering the highest performance at highly competitive pricing to win and retain their most demanding customers.
- **Rapid service delivery is especially important to a subset of network operators surveyed, particularly larger operators that have strong business with hyperscalers and neoclouds.** Among Tier 1 CSPs surveyed, time to service delivery was the fourth most commonly cited Rank 1 and Rank 2 priority, closely following competitive pricing. In interview discussions with CSPs, rapid service delivery for hyperscaler and neocloud customers was seen as almost table stakes to win the business.
- **The majority of CSPs surveyed are well within the active deployment phase for 400G infrastructure and services, with nearly two-thirds reporting that their current networks are between 26% and 75% 400G-capable.** Additionally, nearly half of the CSPs surveyed (46%) either sell 400G wavelength services today or expect them to be available by the end of 2026.

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- **CSPs expect hyperscalers to lead the charge in 400G wavelength services adoption but also see strong secondary markets for the high speed service.** Targeting the hyperscale market is not surprising, given that they led the coherent 400G adoption wave. Strong secondary markets include energy/utilities/mission-critical, financial institutions, neoclouds, and wholesale operators.

- **Expected primary markets vary by geographic region, with hyperscalers and neoclouds factoring in heavily in North America and Asia & Oceania but lagging in EMEA.** In EMEA, energy/utilities/mission-critical entities are expected to be the primary market, according to respondents. Hyperscalers and neoclouds are not in the top three, but Omdia believes increasing hyperscaler investment in the region will likely change this picture over time.

- **800G wavelength services are at the earliest availability stage, with just 3% reporting 800G wave services today and an additional 16% expecting services by year end.** CSPs surveyed expect a rapid ramp in the 2027–28 timeframe, with 57% expecting to launch 800G services.

- **Despite the early stage, many operators report having the infrastructure in place to support 800G when they launch.** Nearly half (44%) of CSPs report growing 800G capability (26–50% capable), and an additional 28% of respondents report advanced or leading-edge 800G capabilities (51%-plus capable). In total, CSPs surveyed are well-prepared for the upcoming 800G wavelength rollouts—even as they focus on 400G today.

- **While 800G wavelength infrastructure is far along, 800G ZR/ZR+ pluggable infrastructure within CSPs is in its infancy.** A plurality of CSPs surveyed (38%) is currently planning to test 800G ZR/ZR+ pluggables (the second of the five adoption phases in the survey). Unsurprisingly for the CSP base, just 3% report they are already in production. The data indicates that the current “800G-ready” wavelength infrastructure is based on mature, embedded optics with 1.2Tbps-plus wavelength capacities.

- **Mirroring 400G, CSPs expect hyperscalers to lead the charge in 800G wavelength services adoption.** 46% of respondents expect hyperscalers to be the primary 800G market. Also mirroring 400G, CSPs see strong secondary opportunities for 800G wave services in financial institutions, energy/utilities/mission-critical, and neoclouds.

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MOFNs

- **CSPs have a mix of experiences with MOFNs today.** 44% frequently receive MOFN requests, while 48% rarely do. Survey results reinforce anecdotal data indicating that MOFN adoption is market segment- and region-specific. Looking at geographic regions, 53% of Asia & Oceania CSPs report frequent MOFN requests, followed by 43% of EMEA respondents and 40% of North American CSPs. Omdia notes that India is a particularly large MOFN opportunity, with a combination of regulatory requirements, strong hyperscaler investments, and a large geography.

AI preparation, impacts, and opportunities

- **Nearly half of CSPs surveyed expect AI to have a high impact on their network traffic over the next four years (accounting for 26–50% of traffic volume).** An additional 34% expect a moderate impact (accounting for 10–25% of traffic volume). For 15% of the survey group, AI is predicted to be the dominant network traffic type (accounting for more than 51% of total volume).

- **CSPs are mostly optimistic about their managed services network readiness for the demands of AI.** Just over one-third (35%) believe they are "very ready" for the coming demands, while 43% believe they are "mostly ready," with much of the required network in place. Note that all respondents already sell high bandwidth wavelength services, so they are better positioned for AI versus the greater population of all CSPs.

- **CSPs are optimistic about the high bandwidth wavelength services opportunity for AI.** 61% of respondents believe high bandwidth wavelengths will be a top two revenue opportunity, well above any other network service type. For the wavelength specialists surveyed, strong wavelength demand for AI connectivity would be the ideal market scenario. This data is consistent with a similar Omdia CSP survey question from 2025.

- **Beyond connectivity, CSPs see three main avenues to revenue growth from AI: branded AI services, AI-assisted security services, and AI infrastructure hosting/GPU as a service (GPUaaS).** But all possible service options resonated with the CSP audience. At this very early stage, CSPs are exploring all emerging AI revenue opportunities and ruling out very little.

Survey demographics

The data is based on an online survey jointly developed by Omdia and Nokia. The survey was fielded by Omdia in June and July 2026 to qualified employees of network operators that currently offer high bandwidth wavelength services, defined as 100G or higher data rates.

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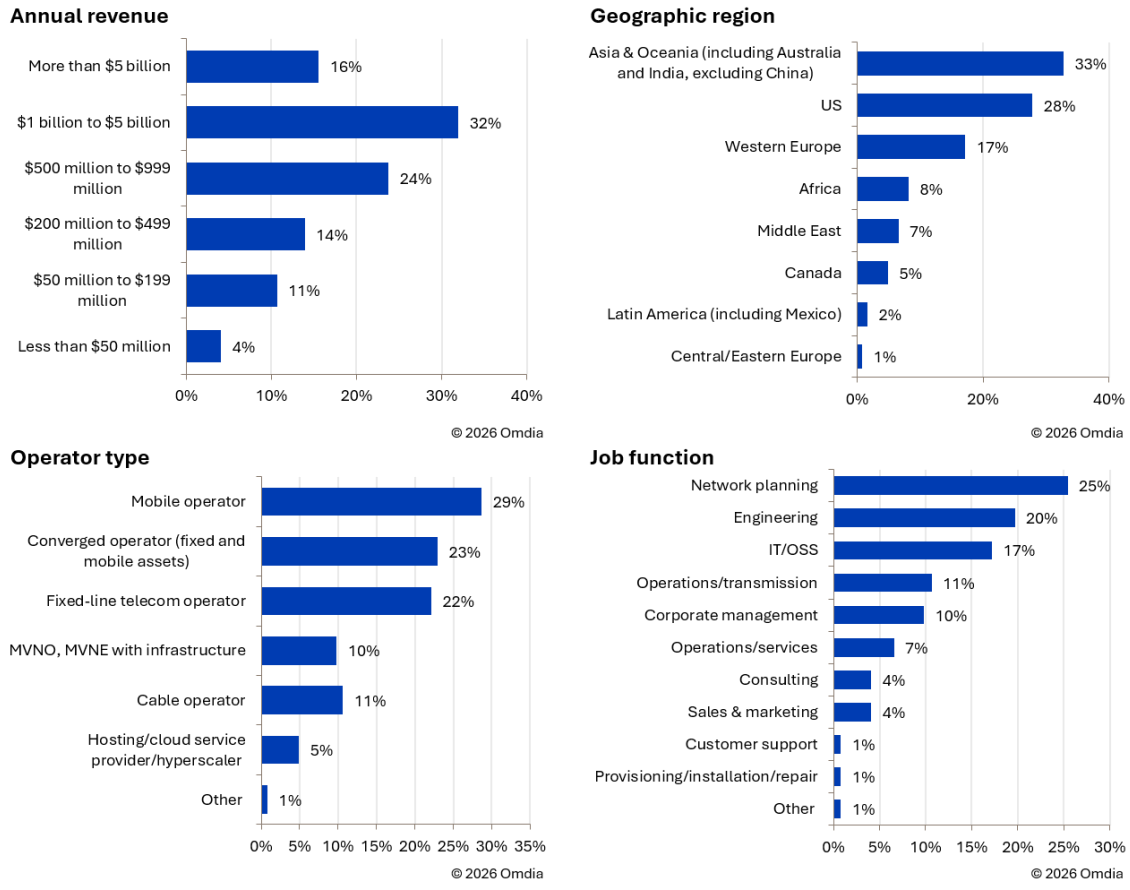
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The survey consists of 122 respondents:

- 40 from North America
- 40 from EMEA
- 40 from Asia & Oceania (excluding China)
- 2 from Central and Latin America

Additionally, 100% of organizations are involved in network planning, purchasing, or operations of optical networking equipment and/or optical transport services, and 100% of organizations are currently selling high bandwidth optical services (100G+). The full survey demographics are detailed in **Figure 1**.

Figure 1: Survey response demographics



Notes: Numbers in figures throughout this report may not total 100 due to rounding.
n=122
Source: Omdia

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High speed wavelength services

Network operators have long sold optical wavelength services to large enterprises and other service providers (including wholesale), but the market is experiencing a new surge in demand due to a combination of drivers. These include AI infrastructure demands, cloud expansion, ongoing 5G deployments, and overall data traffic growth and volume.

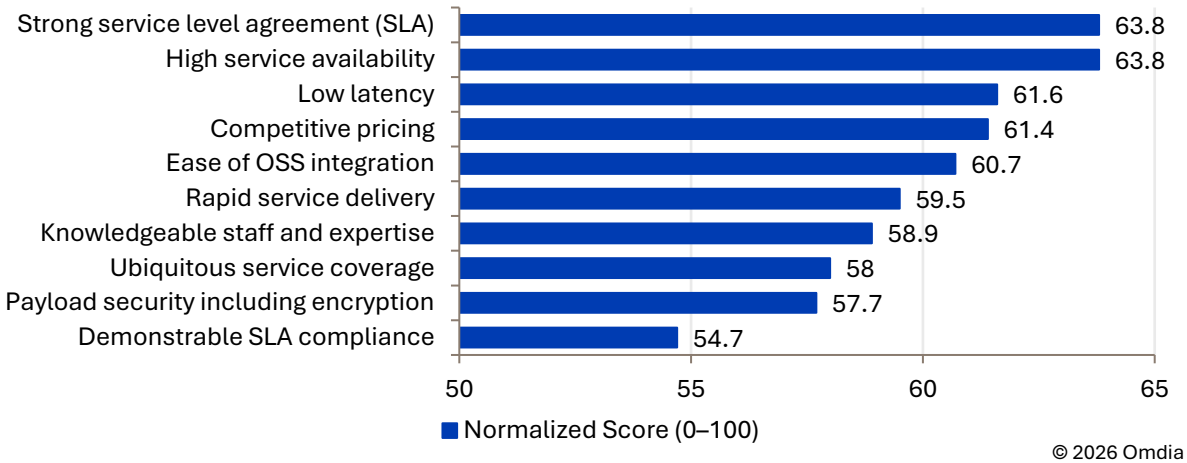
Market demand is particularly strong for high speed wavelength services, defined as 100Gbps and higher data rates, with a particular focus on 400G data rates and emerging 800G services.

For this survey, Omdia provided the following definition for wavelength services:

This survey focuses on high speed Layer 1 optical transport services delivered over DWDM wavelengths. Many providers refer to these services as "wavelength services," while others use the term "transparent services" to emphasize that customers can transport any protocol over the service. The definition excludes all Layer 2/3 services, such as switched Ethernet and IP VPNs.

Omdia asked CSPs to rank their customers' buying criteria for high speed wavelength services, from most important to least important. Response weighting generated raw scores. Ranked results based on normalized scores are shown in **Figure 2**.

Figure 2: Rank the buying criteria your customers or potential customers are demanding for high speed (100G, 400G, and 800G) wave (or transparent) services from most important to least important.



Normalized score (0–100) derived from ranked preferences; n=122
Source: Omdia

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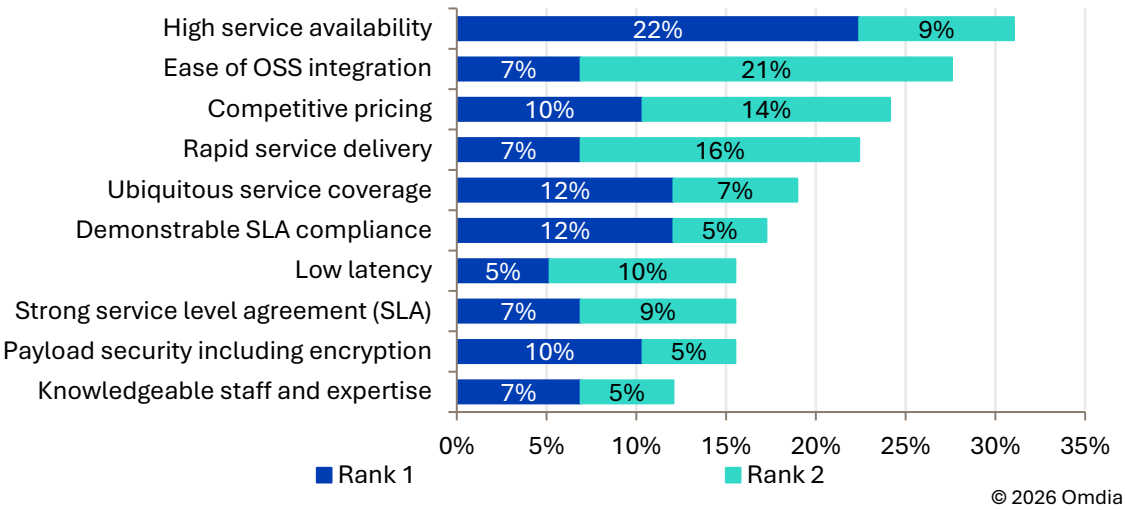
According to CSPs surveyed, strong SLAs, high service availability, low latency, and competitive pricing are the top four customer buying criteria for high speed wavelength services. Omdia believes the first three criteria are becoming table stakes in a highly competitive services market where pricing is also a primary customer consideration. These are CSPs' most demanding customers—but also highly lucrative ones.

Respondents considered all 10 buying criteria Omdia listed in **Figure 2** as important, as evidenced by the tight concentration of normalized scores (just 9 percentage points separating first and last).

Rapid service delivery is an increasingly important requirement among hyperscalers and neoclouds—and for the subset of CSPs that are targeting these high volume and very demanding customer segments. Looking more deeply at the requirement rankings, Omdia notes that while few respondents placed rapid service delivery as their No. 1 customer requirement, a high percentage ranked rapid service delivery as their No. 2 requirement.

Analyzing the top rankings of Tier 1 CSPs (i.e., respondents with greater than $1bn in annual revenue) sheds further light on the importance of rapid service delivery. Among the largest network operators, rapid service delivery ranks fourth on the list of buyer criteria—and very closely behind pricing. Today, Tier 1 CSPs are the operators most likely to have the scale and fiber footprint to serve hyperscalers and large neoclouds. Thus, it makes sense that they are seeing this requirement more often.

Figure 3: Top Rank 1 and Rank 2 buying criteria for customers (Tier 1 operators only)



Normalized score (0–100) derived from ranked preferences; n=58
Source: Omdia

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The quote below, from an in-depth interview with a Tier 1 North American service provider deeply involved in hyperscaler and neocloud builds, encapsulates the growing importance of rapid service delivery:

[The] delivery intervals are just as important as price in many cases … The delivery intervals have become less and less negotiable than anything else. With the defined routes, we've been able to work with customers on finding something that we can support capacity-wise and still meet their needs. So there's some wiggle room there versus their ideal route. But some of our largest customers are pretty aggressive on delivery intervals.

— *Senior Engineering Executive, Tier 1 North American CSP*

For the remainder of this section, the report focuses on the highest end of the high speed wavelength services market: 400G and emerging 800G services. The survey data shows that 400G wavelength services are rapidly progressing toward mainstream availability, while 800G services are at the earliest commercial phase.

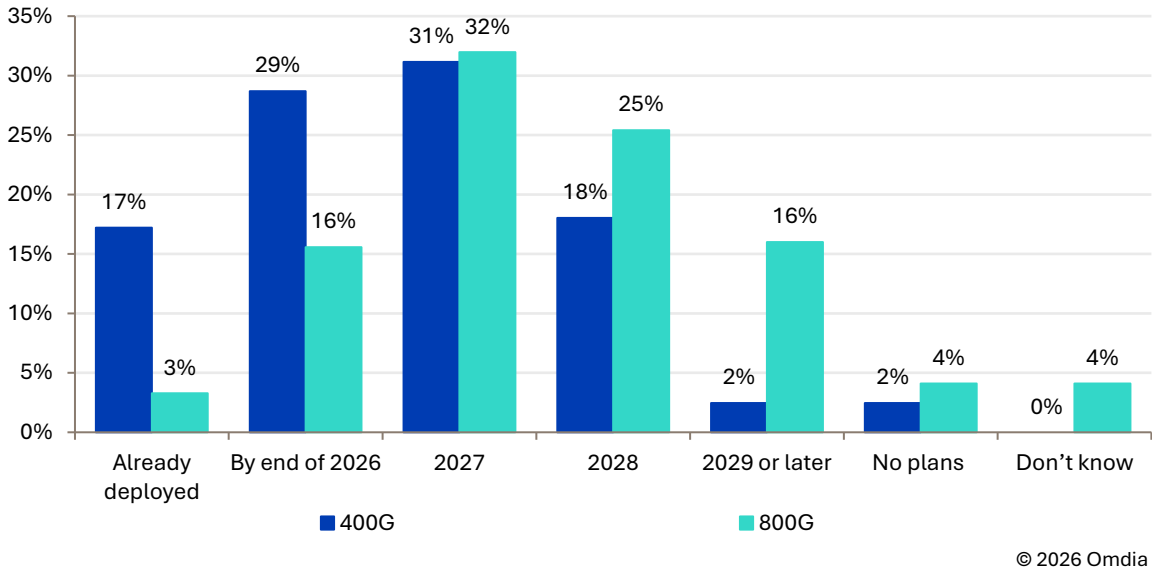
Just under half of CSPs surveyed (46%) either sell 400G wavelength services today or expect 400G services to be available by the end of 2026. An additional 49% of operators surveyed expect 400G wavelength availability by the end of 2028, and just 4% plan to deploy 400G in 2029 or have no 400G plans at all.

By contrast, at 800G, just 3% report 800G wavelength services deployments today, with an additional 16% expecting deployments by the end of 2026. Still, CSPs expect a rapid rollout of 800G wavelength services in the 2027–28 timeframe, with 57% expecting to launch 800G waves commercially. By the end of 2028, just over three-quarters of CSPs surveyed (76%) expect 800G wavelength availability.

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Figure 4: When do you plan to deploy 400G wavelength (or transparent) services in your network?



n=122, 400G; n=122, 800G
Source: Omdia

400G and 800 wavelength services require underlying optical networks that can support those service data rates. To better understand CSPs' underlying optical networks, Omdia asked survey respondents to estimate the percentage of their networks capable of delivering 400G and 800G waves today.

For ease of interpreting and discussing the data, Omdia applies the following four descriptors across the range of 400G and 800G network capabilities:

- **Low coverage:** Less than 25% of network is 400G- or 800G-capable
- **Growing coverage:** 26–50% of network is 400G- or 800G-capable
- **Advanced coverage:** 52–75% of network is 400G- or 800G-capable
- **Near-full coverage:** 76%-plus of network is 400G- or 800G-capable

At 400G, the majority of CSPs surveyed are well within the active deployment phases for 400G infrastructure, with 32% in the growing coverage phase (i.e., 26–50% of the network 400G-capable) and an additional 30% in the advanced coverage phase (51–75% capable). At 16%, a small but impressive minority of CSPs report near-full coverage of 400G wavelength service capabilities (75%-plus of the network is 400G-capable).

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The 400G story is a consistent one: a large share of optical networks are 400G-capable today, and CSPs are actively selling 400G wavelength services to customers.

The quote below from an interview with a network executive of a Pan-European operator is indicative of the 400G wavelength services trend and trajectory:

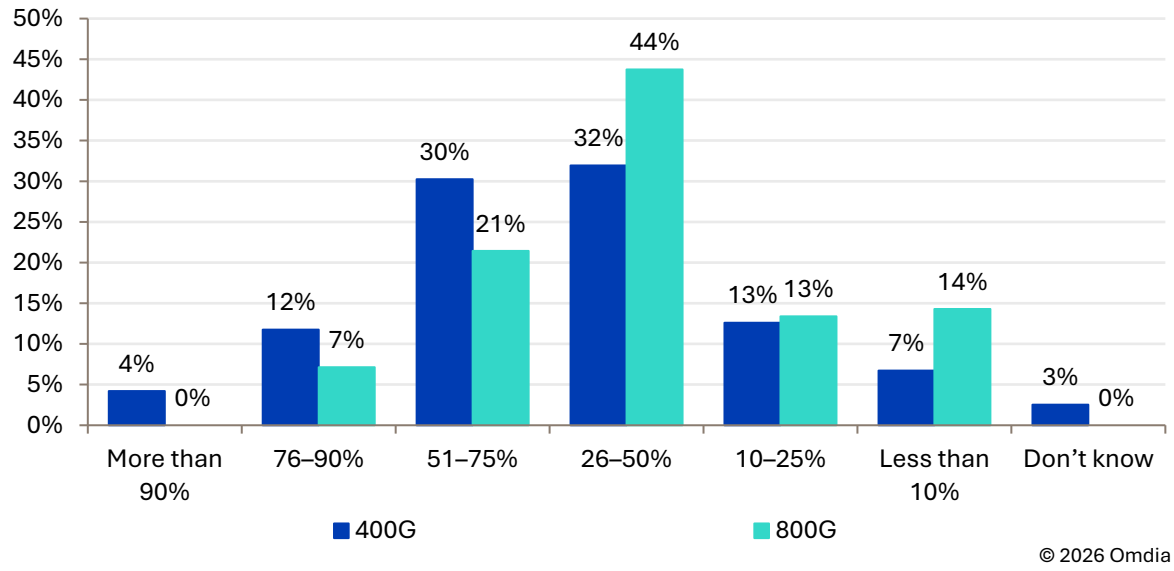
400 gigabit services are now one-quarter of what we install, which is remarkable because that's gone up from 6% to 8% last year, I think, and less than 1% the year before. It's the growth driver for our business … It's still going to keep growing. It's going to be the backbone workhorse pretty soon.

— *Head of Products, Pan-European CSP*

At 800G, however, there is some disconnect between the selling of services and the availability of supporting infrastructure. Specifically, although 800G wavelength services are nascent, network readiness for 800G services is surprisingly high. Nearly half (44%) of CSPs report growing 800G coverage (26–50% capable), and an additional 28% report advanced or near-full 800G network coverage (51%-plus capable).

Overall, the CSPs surveyed are well-prepared for the coming 800G wavelength rollouts—even as they focus on 400G wavelength service deployments today.

Figure 5: What percentage of your network(s) is capable of delivering 400G and 800G wave (or transparent) services today?



n=122, 400G; n=122, 800G
Source: Omdia

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Coherent optical engines operating at 90-plus Gigabaud were the first generation of optics capable of operating at 800Gbps per wavelength, though only at short distances (typically 100s of kilometers). The subsequent generation of 1.2 terabit optical engines operating at 130-plus Gigabaud was the first generation to allow 800G transmission at 1,000km and greater—marking a significant milestone in high speed optics.

Omdia believes that wide global deployments of 1.2T and 1.6T embedded optics are the reason a large share of CSPs report having "800G-ready" optical infrastructure in place today and in advance of the wide current demand for 800G wavelength services.

OIF standardization of 800ZR in October 2024 adds another dimension to the 800G story by enabling 800Gbps transmission using coherent pluggable optics in quad small form-factor pluggable double density (QSFP-DD) and octal small form-factor pluggable (OSFP) form factors. These new coherent pluggables can be housed in routers (i.e., IP over DWDM or coherent routing) or, alternatively, in thin transponders built to take advantage of coherent pluggable economics.

Significantly, most vendors selling OIF-compliant 800ZR modules also offer optional ZR+ modes capable of delivering 800G wavelengths over long distances (e.g., 1,000km-plus). This is good news for CSPs that need long reach to address a wide range of applications.

Early demand for 800G pluggable optics has been driven predominantly by hyperscalers deploying 800ZR for data center interconnect applications. In contrast, Omdia survey data reveals that CSPs are still in the early stages of deploying 800G ZR and ZR+—a finding that is also corroborated by Omdia's broader market analysis.

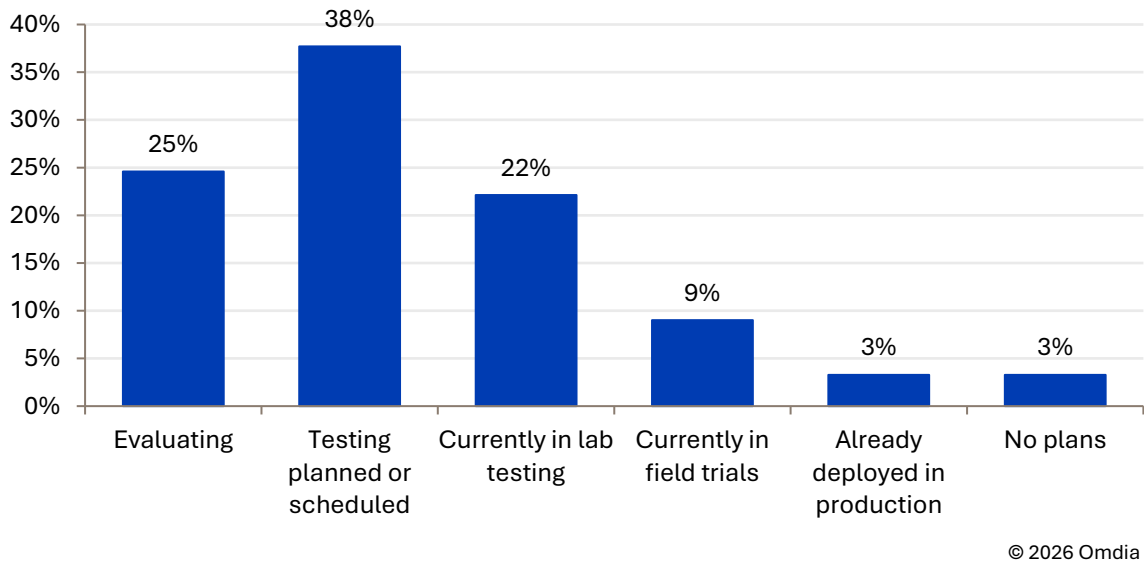
Just 3% of CSPs surveyed report having 800G ZR/ZR+ modules currently in production (see **Figure 6**). Still, CSPs show serious interest in the new modules. At 38%, a plurality are currently planning to test 800G ZR/ZR+. (Planned testing is the second of the five adoption phases listed in the survey.) Additionally, 31% report that they are currently in lab testing (22%) or field trials (9%).

Omdia believes that for CSPs, it is too early to call widespread 800G ZR+ adoption. Embedded 1.2T/1.6T is in place, but 800G ZR+ modules offer compelling economics. For CSPs hesitant to adopt IP over DWDM, thin transponders using coherent pluggables present a strong value proposition. But Omdia research shows that many CSPs are unaware of this emerging option.

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Figure 6: What stage is your organization at in deploying 800G ZR/ZR+ coherent pluggable modules?



n=122
Source: Omdia

To get a final read on high speed wavelength demand, Omdia asked respondents to identify their expected demand for both 400G and 800G wavelength services over the next three years. As the earlier survey data indicated, demand for both is expected to be significant, but CSPs see 400G as the stronger opportunity.

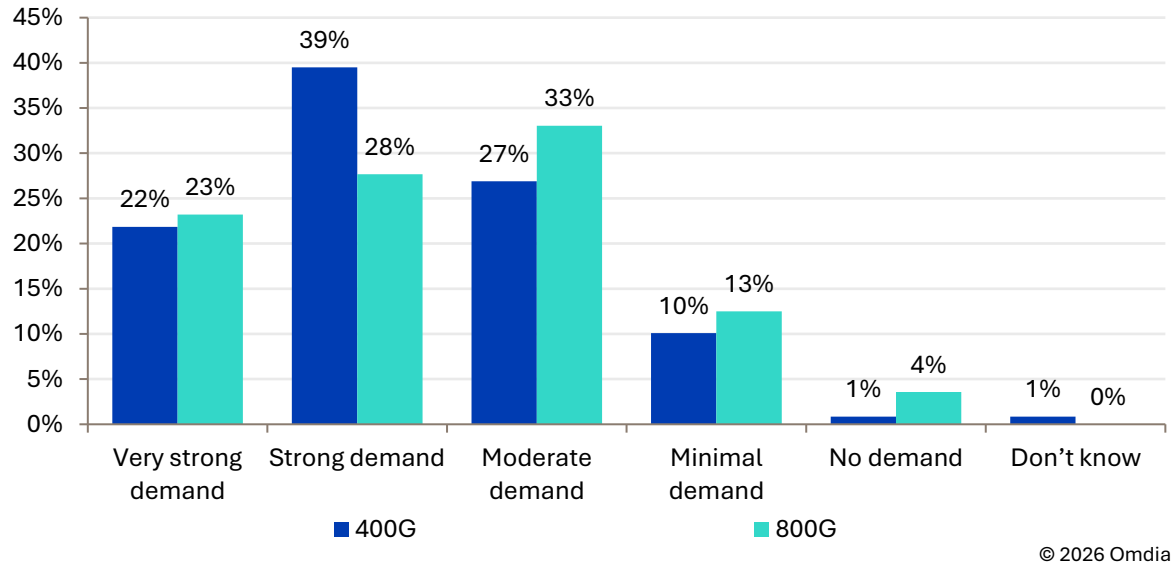
For 400G wavelengths, 39% of respondents expect "strong" demand over the next three years, and 22% expect demand to be "very strong." In total, 61% expect 400G demand to be *at least* "strong."

For 800G wavelengths, 28% of respondents expect "strong" demand, and 23% expect demand to be "very strong" over the next three years. In total, 51% expect 800G demand to be *at least* "strong." On the other hand, exactly half (50% of respondents) anticipate "moderate," "minimal," or "no" 800G wavelength demand over the next three years.

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Figure 7: What is your expected demand for 400G and 800G wavelength services over the next three years?



n=119, 400; n=112, 800G
Source: Omdia

Lastly in this section, Omdia sought to better understand end customer markets for both 400G and 800G wavelength services. CSPs see strong similarities in buyers across both segments and expect hyperscalers to be the biggest market for each data rate. This is unsurprising, as hyperscalers were at the forefront of 400G commercialization earlier this decade and are now pioneering 800G rollouts (see **Figure 8**).

CSPs also see several strong secondary opportunities for both 400G and 800G wave services, including in the following verticals:

- Energy/utilities/mission-critical
- Financial institutions
- Neocloud providers

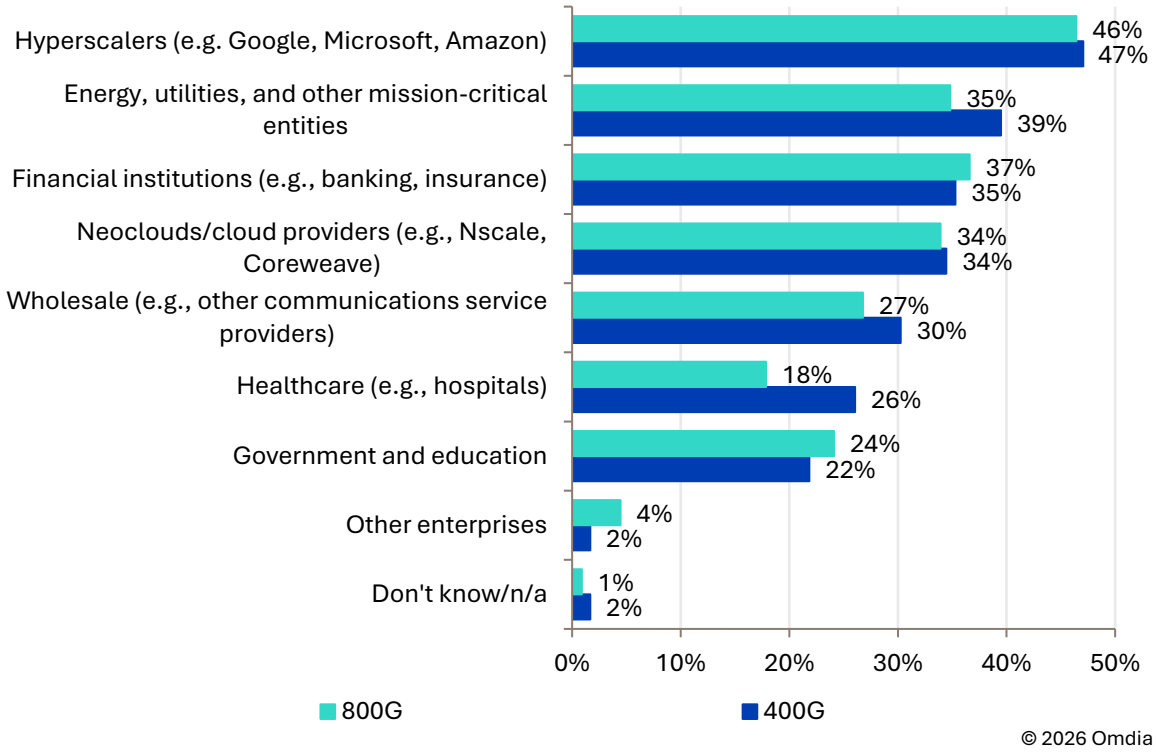
Neoclouds and financial institutions are major bandwidth consumers and are largely expected in the results, but the strong showing in the energy/utilities/mission-critical category is somewhat surprising and will require further investigation. It is well understood that "mission-critical" entities demand the highest levels of reliability and availability and that these are key pillars of CSPs' wavelength service and overall private line value

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proposition. The question is whether these types of companies have capacity demands driving them to 400G and possibly 800G data rates. CSPs surveyed believe they do.

Interestingly, expected demands for 400G and 800G wave services from wholesale providers are trailing behind these three secondary markets and landing toward the middle of the pack. Historically, wholesale providers were leading adopters at each new telecommunications data rate, but this no longer seems to be the case as hyperscalers, cloud providers, and sophisticated enterprises take the lead.

Figure 8: What customer segment(s) are your primary market for 400G and 800G wavelength (or transparent) services? (Select up to three)



n=119, 400G; n=112, 800G
Source: Omdia

Expected primary markets also vary by geographic region, with hyperscalers and neoclouds having a heavy impact in North America and Asia & Oceania but less impact in EMEA. In EMEA, energy/utilities/mission-critical entities are expected to be the primary market, ahead of hyperscalers, and neoclouds are not in the top three. As the AI market in EMEA matures, in part due to growing requirements for data sovereignty, hyperscalers and

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neoclouds should rise higher on the target customer list. Google's recently announced plans to invest €13bn in AI infrastructure in Finland, in partnership with supplier Nokia and operator Elisa, is one strong supporting example of this trend (see **Table 1**).

Table 1: Expected 400G wavelength customer segments by region

North America		EMEA		Asia & Oceania	
Rank	**Market**	**Rank**	**Market**	**Rank**	**Market**
1	Hyperscalers	1	Energy/utilities/ mission-critical	1	Hyperscalers
2	Financial institutions	2	Hyperscalers	2	Neoclouds/cloud providers
3	Neoclouds/cloud providers	3	Financial institutions	3	Energy/utilities/ mission-critical
3	Energy/utilities/ mission-critical				

n=40, North America, n=40, EMEA; n=39, Asia & Oceania
Source: Omdia

Table 2 shows the expected primary markets for 800G wavelengths broken out by geographic region. CSP 800G market expectations are largely similar to those for 400G. There is one notable difference in Asia & Oceania, where neoclouds are an expected primary market at 400G but drop off the top three ranking at 800G.

Table 2: Expected 800G wavelength customer segments by region

North America		EMEA		Asia & Oceania	
Rank	**Market**	**Rank**	**Market**	**Rank**	**Market**
1	Hyperscalers	1	Energy/utilities/ mission-critical	1	Hyperscalers
2	Neoclouds/cloud providers	2	Hyperscalers	2	Financial institutions
3	Financial institutions	3	Financial institutions	3	Energy/utilities/ mission-critical

n=38, North America, n=37, EMEA; n=37, Asia & Oceania
Source: Omdia

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MOFNs

A MOFN is a dedicated, high capacity optical network provided to a customer that is managed and operated by the CSP on behalf of that customer. MOFN customers are typically hyperscalers, neoclouds, and other large cloud providers that view MOFNs as an alternative network model between building their own private networks on one end and buying managed wavelength services on the other.

While managed private optical networks are not new, the MOFN terminology applied to hyperscalers' cloud networks is relatively recent. One key difference in the evolving MOFN market is how hyperscalers approach equipment specification and procurement compared to traditional enterprise customers. Enterprises typically purchase fully CSP-managed services, in which the CSP owns, designs, builds, and operates the network.

By contrast, it is common for hyperscaler and neocloud customers to be intimately involved with the CSP in defining the network architecture and the transport requirements for a dedicated MOFN. The cloud provider may also specify preferred optical networking equipment and preferred vendors. In some instances, the cloud provider may even procure equipment for use in the MOFN network. In this relationship, the CSP installs, manages, and operates the network for the cloud customer. The CSP also typically supplies the fiber for the MOFN route either from its dark fiber inventory or from a third party.

The quote below from a Tier 1 CSP based in Asia & Oceania with a large subsea business describes the evolving MOFN model:

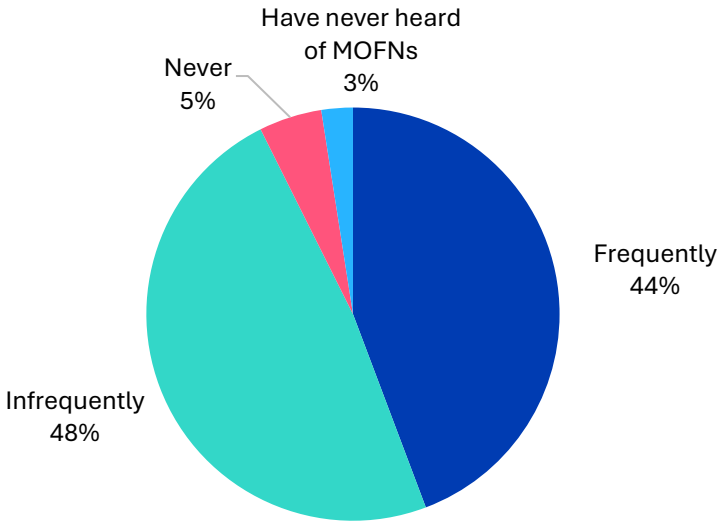
The way we see MOFN is when a customer comes to us with a use case: "Build me a dedicated optical transport on these routes with this level of diversity and resiliency that I need." In that case, what we are doing is basically building a private connection and maintaining it.

— *Head of International Product Solutions Development, Tier 1 Asia & Oceania CSP*

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CSPs report a mix of experiences with MOFNs today, based on the survey results. At 44%, nearly half frequently receive requests for MOFNs today. But at 48%, nearly half also report they rarely receive MOFN requests, and 5% say they never receive requests for MOFNs (see **Figure 9**).

Figure 9: How often are you receiving requests from hyperscalers and/or AI and cloud providers to build managed optical fiber networks (MOFNs)?



n=122
Source: Omdia

The mixed survey results reinforce anecdotal data indicating that MOFN adoption is both segment- and region-specific. For example, some countries have regulations preventing cloud providers from owning telecommunications networks, particularly in parts of Asia & Oceania and the Middle East. For cloud providers in these regions, MOFNs are often the best option.

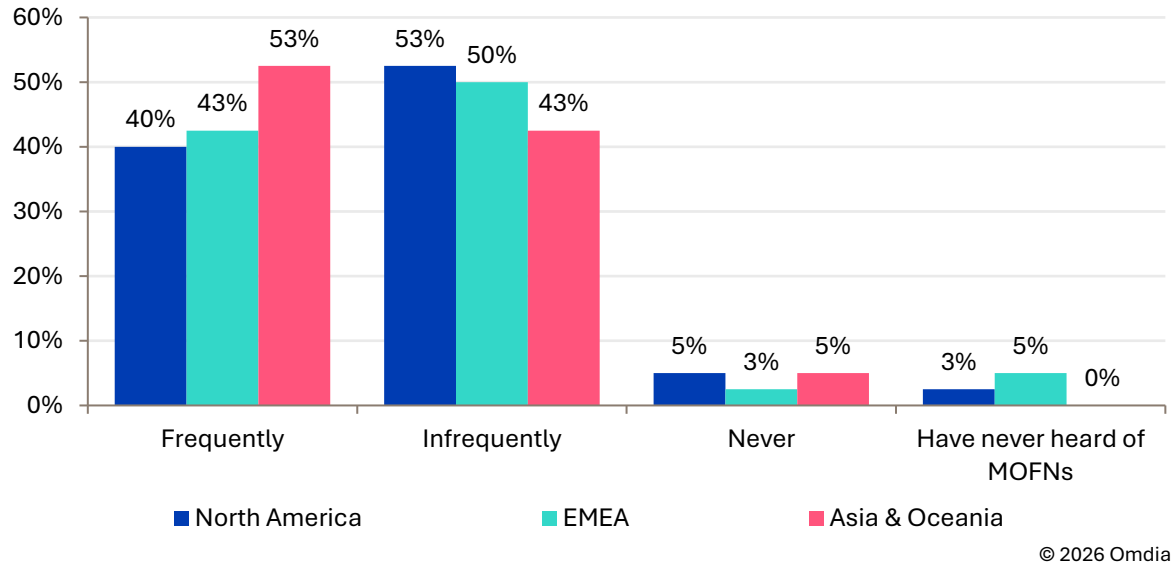
While China is excluded from this survey, India is strongly represented in the results. In addition, the EMEA results include network operators from Saudi Arabia and the UAE (see **Figure 10**).

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Beyond regulatory restrictions, other significant factors can drive cloud providers to the MOFN model, including faster time-to-market and/or a need for telecommunications expertise. Thus, regions such as North America—in which cloud providers are not restricted—are also adopting the MOFN model. Omdia believes that the expansion of neoclouds, in particular, will increase MOFN demand in North America and other regions where they operate.

Figure 10: How often are you receiving requests from hyperscalers and/or AI and cloud providers to build managed optical fiber networks (MOFNs)? (by region)



n=40, North America; n=40, EMEA; n=40, Asia & Oceania
Source: Omdia

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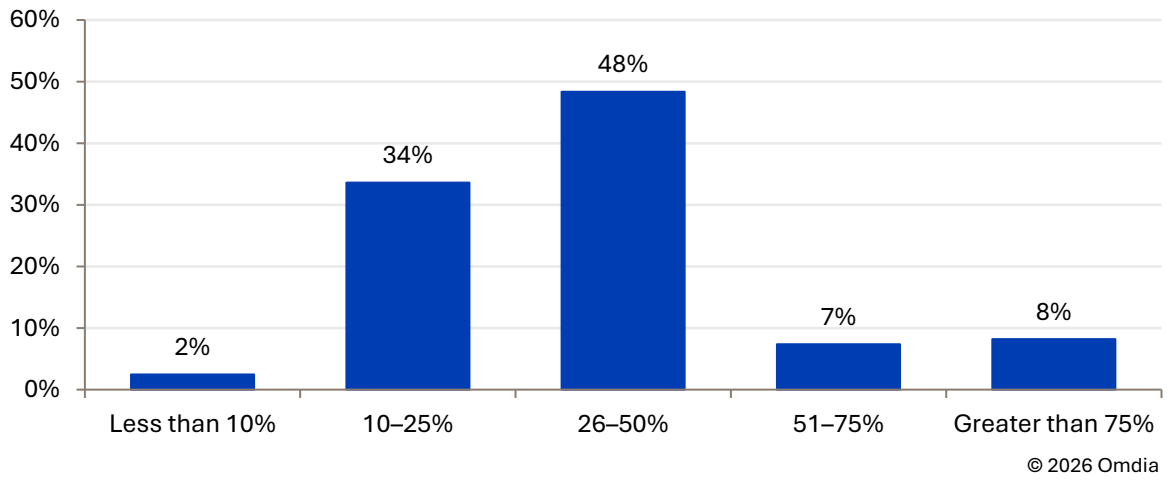
AI preparation, impacts, and opportunities

CSPs expect AI-related traffic to represent a significant portion of their networks by 2030. Nearly half of CSPs surveyed expect AI to have a high impact on their network traffic over the next four years, accounting for 26–50% of total traffic volume. An additional 34% expect a moderate impact (accounting for 10–25% of traffic volume). Notably, 82% of respondents expect AI traffic to account for 10–50% of total metro and long-haul network traffic, indicating strong consensus around moderate-to-substantial AI impact (see **Figure 11**).

Traffic predictions are difficult at this early stage of AI adoption, and forecasts abound. However, it is interesting to note that respondents' views closely align with Omdia's forecasts for AI traffic growth on CSP networks (Omdia's *AI Network Traffic Forecast: 2023–35*, February 2026). Omdia forecasts that in 2030, 40% of global network traffic will be AI-related (including net new AI traffic and the AI portion of AI-enhanced applications). Looking at the survey data, the estimated median AI traffic share expectation among respondents is 38% by 2030, with a mean expected AI share of 36% of total traffic.

For 15% of the survey group, AI is predicted to be the dominant network traffic type, accounting for more than 51% of total volume. Presumably, these respondents are AI specialists serving data center interconnect (DCI) and scaling across applications.

Figure 11: By 2030, what percentage of your total metro and long-haul network traffic volume will be directly related to AI?



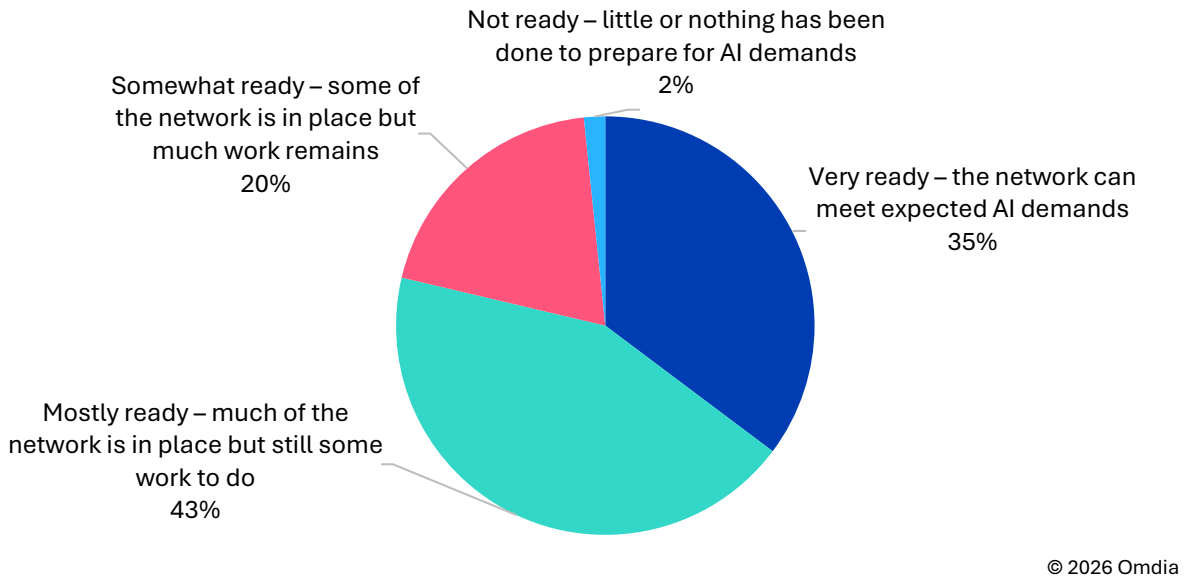
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Source: Omdia

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Despite their strong expectations for AI traffic growth, CSPs are mostly optimistic about their managed services network readiness for the demands of AI traffic and use cases. Just over one-third (35%) believe they are "very ready" for the coming demands. An additional 43% believe they are "mostly ready," with much of the required network in place.

At 22%, a significant minority believes they are just "somewhat ready" or not ready at all for AI traffic and use cases.

Figure 12: How ready is your current wholesale or managed services network for future AI traffic and use cases?



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Source: Omdia

Consistent with the confidence levels expressed above, CSPs overwhelmingly believe high bandwidth wavelength services will dominate as the transport service for AI connectivity. 61% of respondents identified high bandwidth wavelength as one of the top two revenue opportunities for AI connectivity—significantly ahead of all other service options (see **Figure 13**).

Beyond waves, CSPs surveyed see dedicated private builds (including MOFNs) and IP-routed services as a second tier of key AI service opportunities. Each option was selected by 39% of respondents. As expected, revenue generators, dark fiber, and spectrum services rank on the low end in this survey.

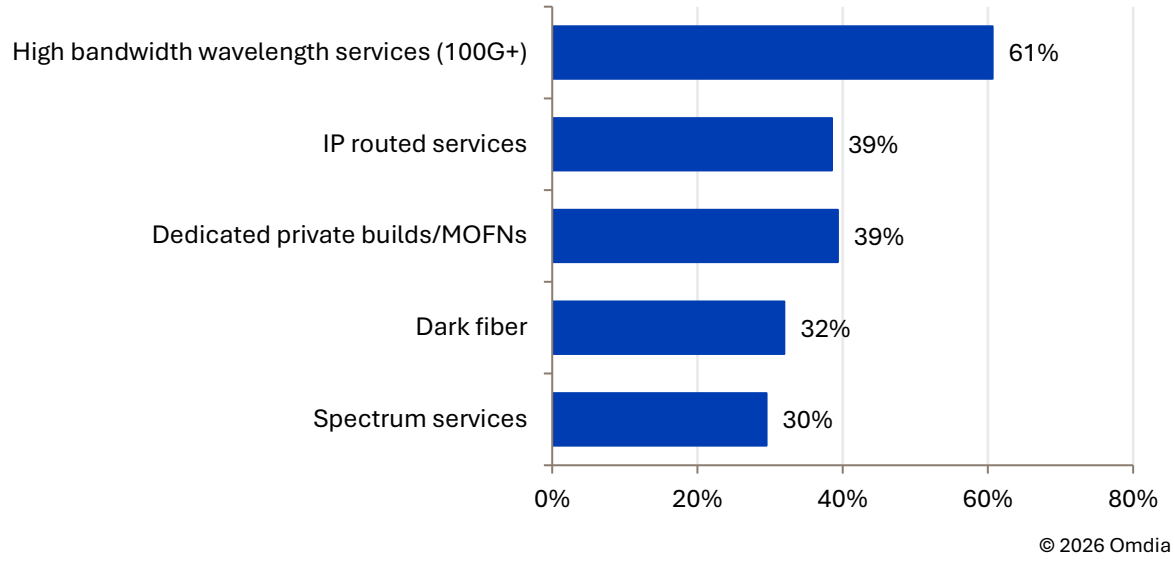
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As Omdia has noted in past analysis, significant market shifts must occur over the next three years for these expectations to become a reality. To date, AI connectivity demand has been dominated by AI model training by AI labs and hyperscalers. These buyers largely prefer dark fiber and, in some cases, MOFNs for connectivity.

Omdia believes that a key underlying CSP assumption in the predicted rise of wavelength services is a market transition from AI model training to mass enterprise AI usage (i.e., inferencing), including the proliferation of agentic AI. The assumption is well-founded and echoed by a growing number of AI industry leaders, including NVIDIA President and CEO Huang.

However, while CSPs are clearly optimistic about their growth prospects for wavelengths and other services, dark fiber will continue to be the first choice for many hyperscalers building out their data center connectivity. Some network operators will continue to specialize in the dark fiber market.

Figure 13: Over the next three years, what two transport services do you expect to be your biggest revenue opportunity from AI demand? (Select two)



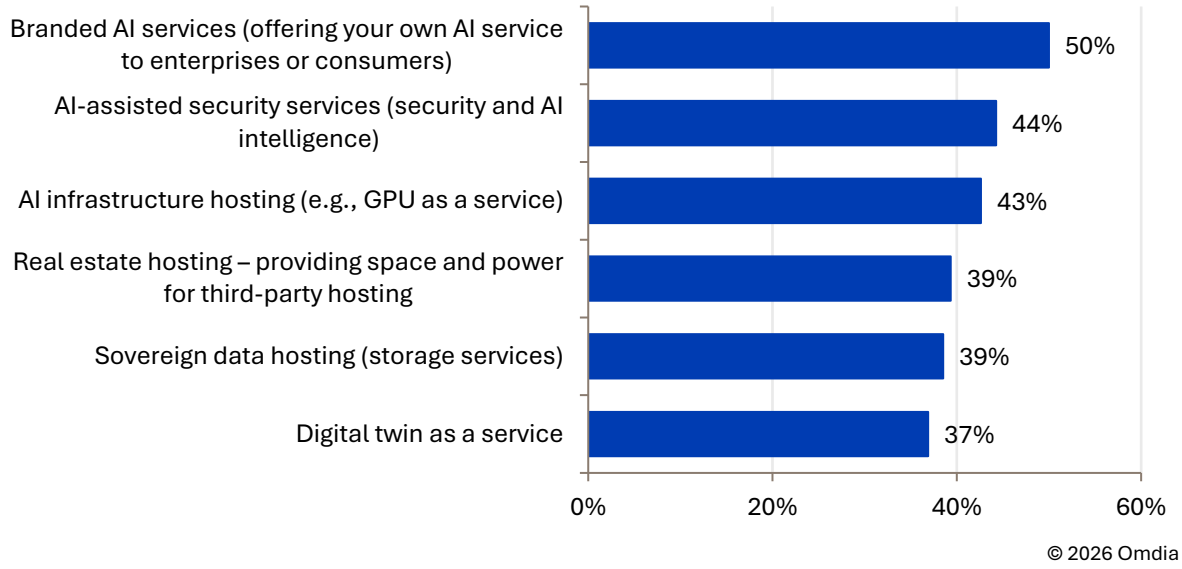
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Lastly, Omdia wanted to get a sense of how CSPs are thinking about AI-related revenue opportunities beyond network connectivity (see **Figure 14**). Here, CSPs see three primary avenues to AI revenue growth:

- Branded AI services (selected by 50% of respondents)
- AI-assisted security services (selected by 44%)
- AI infrastructure hosting/GPUaaS (selected by 43%)

Figure 14: Beyond transport services, which new AI-related business opportunities are you pursuing? (Select all that apply)



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Source: Omdia

CSP interest in branded AI services is very consistent with the rise of AI inference and the emerging inference-related opportunities for CSPs in connectivity and beyond. Verizon's AI Connect, Deutsche Telecom's Magenta AI, Telefónica Aura, AT&T's Connected AI for Manufacturing, and SK Telecom's A.Biz are just a few global examples.

Often, branded telco AI services combine multiple services—such as connectivity, GPUaaS, natural language processing, security, etc.—under an umbrella brand. As such, there is some overlap with other standalone services listed in the question. Additionally, branded services often involve key partnerships with other industry vendors, including major cloud providers and GPU suppliers like NVIDIA and AMD.

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These telco-branded AI services represent a fundamental industry transformation, with telecommunications operators seeking to evolve from connectivity providers into comprehensive AI infrastructure and services companies.

Still significant but slightly lower in the rankings were real estate hosting, sovereign data hosting, and digital twins. The message from the data is that, at this early stage, CSPs are exploring a wide range of emerging AI revenue opportunities and partnerships and ruling out very little.

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Appendix

Methodology

The data is based on an online survey jointly developed by Omdia and Nokia. The survey was fielded by Omdia in June and July 2026 to qualified employees of network operators that currently offer high bandwidth wavelength services, defined as 100G or higher data rates. The survey consists of 122 respondents:

- 40 from North America
- 40 from EMEA
- 40 from Asia & Oceania (excluding China)
- 2 from Central and Latin America

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Omdia consulting

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We hope that this analysis will help you make informed and imaginative business decisions. If you have further requirements, Omdia's consulting team may be able to help your company identify future trends and opportunities.

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