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Optical Networking: Top 3 investor debates on impact of potential US import restrictions on Chinese optical transceiver modules

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Optical Networking
The next mega trend in AI infrastructure
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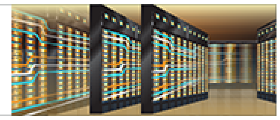


According to recent media reports (Link), the Trump administration is drafting a ban on US imports of Chinese data center components, with the Federal Communications Commission (FCC) working on measures to bar imports of Chinese made optical modules. Following this, three key debates have emerged in our investor conversations around the potential impact; mainly, why industry leaders continue to gain client traction, capacity and cost efficiency implications, and production base diversification. While we take no view on any outcome, we remain positive on the industry leaders in our China optical coverage (FOCI, RoboTechnik, Landmark, Eoptolink, VPEC), given strong AI demand, tight raw material supply, and the rapid pace of technology migration leading customers to rely primarily on the existing leaders. **Read more:** Optical Networking thematic report, Optical module global TAM, Thailand / Vietnam tour top 6 takeaways.

In particular, the Chinese industry leaders have long experience working with CSP customers and the AI infrastructure supply chain, and we believe their early engagement with these customers better positions them to capture emerging changes in demand and the direction of product design well ahead of others. Early engagement is especially important given the various types of optical modules, their long development times, and that they continue to evolve across different speeds (e.g. 1.6T, 2.4T, 3.2T, etc.), form factors (e.g. pluggable, LPO, NPO, CPO, etc.), materials (e.g. SiPh, EML, Lithium Niobate, etc.), and fiber types (e.g. single-mode, multi-mode, etc.), etc. The number and range of SKUs require strong R&D capabilities that further enhance the leaders' competitiveness. As a result, we expect the global leaders to extend their successful track record of launching the world's first 400G (2018), 800G (2020), and 1.6T (2023) optical transceivers and see it strengthening as AI migration continues to build. Meanwhile, we see optical transceiver suppliers expanding manufacturing capacity in Thailand and other SEA regions in order to diversify supply chain risks and reduce the impact of macro uncertainties.

Buy ratings in optical networking: *FOCI, RoboTechnik, Landmark, Eoptolink, VPEC.*

Key debates

1. Why existing leaders continue to gain client traction? *Fast technology migration, strong AI demand, tight raw material supply, and various SKUs requiring strong R&D capability*

We believe it is difficult for CSPs to diversify their AI server supply chains in an environment of rapid technology migration, strong AI demand, tight raw material supply, and high customization requirements across various SKUs. In our view, such a fast evolving technology environment only increases customers' reliance on existing leaders rather than reducing it, which adds to the difficulties in switching from existing leaders. As we highlighted in June (report link), global AI server racks continue to increase in complexity with ongoing changes in architecture, which would take new suppliers a longer time to prove their products' stability and re-align/integrate in the ecosystem, while working together with chipset suppliers, system providers, and other components suppliers to meet their quality and design specifications.

2. Capacity and Cost efficiency? *Besides strong R&D capability, existing leaders are also strong in capacity commitments, automated production, and manufacturing efficiency*

Seven out of the global top 10 optical module suppliers in terms of revenues are based in China and expanded market share in 2025 vs. 2024, echoing our positive view of the industry's increasing reliance on its existing leaders. Beside their strong R&D capabilities, we see these leaders are also strong in capacity commitments, automated production, and manufacturing efficiency, resulting in fast product deployment at a competitive price. The leading global suppliers in optical modules for example, are not only expanding capacity substantially but are also diversifying production sites across different countries, and their self-designed production lines and proprietary equipment enable them to secure manufacturing efficiencies and retain automated production know-how in house. Additionally, product specification upgrades toward 1.6T and above not only add difficulties in design but also in manufacturing, given that the size of optical modules is not increasing while at the same time requiring more fibers / lasers per box to drive up the speed, adding difficulties to coupling and thermal dissipation. We believe the smaller vendors would take a longer time to reach the same level of manufacturing efficiency given the fast evolving technology.

3. Production sites diversification? *Diversifying production sites to SEA regions (e.g. Thailand) to reduce impact of macro uncertainties*

Macro uncertainty is not a new news, and can date back to mid 2019 (geopolitical tension), 2020-2022 (the pandemic), and 2025 (additional tariff increases). We see that the technology supply chain has responded over the last several years by diversifying production sites geographically in order to reduce macro uncertainty and, after starting the first phase of mass production, continued to expand capacity. The leading suppliers are continuing to expand capacity at their production sites in Southeast Asia where they are able to produce high-end products (e.g. 1.6T optical modules), and also build capacity in other countries in order to further diversify their manufacturing base. Eoptolink, for-example, is expanding phase 2 capacity in Thailand in 2026E with phase 1 already operating at full utilization rate.

Global Optical module market opportunity

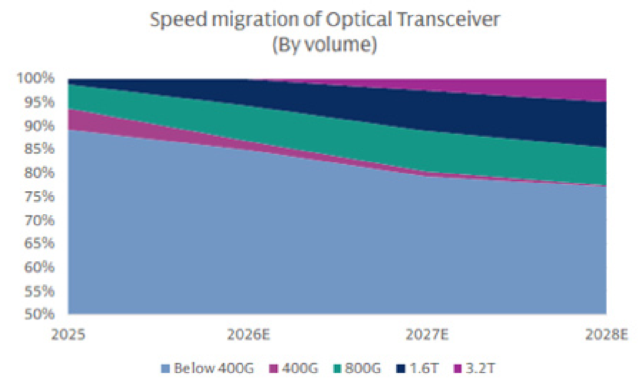
US$ m	1Q25	2Q25	3Q25	4Q25	1Q26E	2Q26E	3Q26E	4Q26E	2025	2026E	2027E	2028E
Global Optical module TAM												
Global TAM (US$m)	**6,570**	**7,969**	**9,607**	**10,066**	**10,142**	**12,047**	**12,770**	**15,925**	**34,211**	**50,883**	**72,593**	**69,135**
Below 400G	4,195	4,315	4,286	4,031	4,077	4,432	4,283	4,093	16,827	16,886	16,166	13,196
400G	1,804	1,023	950	432	359	422	523	441	4,209	1,745	969	287
800G	571	2,120	2,902	3,725	2,706	3,457	3,557	3,810	9,318	13,530	14,715	10,761
1.6T	-	511	1,469	1,877	3,000	3,736	4,406	7,581	3,857	18,722	27,403	23,264
3.2T	-	-	-	-	-	-	-	-	-	-	13,340	21,625
By Speed Mix	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Below 400G	64%	54%	45%	40%	40%	37%	34%	26%	49%	33%	22%	19%
400G	27%	13%	10%	4%	4%	4%	4%	3%	12%	3%	1%	0%
800G	9%	27%	30%	37%	27%	29%	28%	24%	27%	27%	20%	16%
1.6T	0%	6%	15%	19%	30%	31%	35%	48%	11%	37%	38%	34%
3.2T	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	18%	31%
By Material Mix	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
SiPh	14%	24%	32%	36%	38%	40%	42%	48%	28%	43%	56%	62%
EML	86%	76%	68%	64%	62%	60%	58%	52%	72%	57%	44%	38%

	1Q25	2Q25	3Q25	4Q25	1Q26E	2Q26E	3Q26E	4Q26E	2025	2026E	2027E	2028E
Global Optical module shipment TAM												
Global shipment (k units)	**98,631**	**101,929**	**103,907**	**98,580**	**103,818**	**114,888**	**113,138**	**120,425**	**403,046**	**452,269**	**528,286**	**556,429**
Below 400G	89,489	92,054	91,433	85,999	91,563	99,529	96,186	97,013	358,975	384,292	419,238	428,689
400G	7,845	4,448	4,129	1,880	1,673	1,968	2,439	2,214	18,301	8,295	5,268	2,007
800G	1,297	4,819	6,596	8,466	6,666	8,514	8,760	10,243	21,178	34,183	44,993	44,047
1.6T	-	608	1,749	2,235	3,916	4,877	5,753	10,955	4,591	25,500	45,719	53,525
3.2T	-	-	-	-	-	-	-	-	-	-	13,067	28,162
Mix	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Below 400G	91%	90%	88%	87%	88%	87%	85%	81%	89%	85%	79%	77%
400G	8%	4%	4%	2%	2%	2%	2%	2%	5%	2%	1%	0%
800G	1%	5%	6%	9%	6%	7%	8%	9%	5%	8%	9%	8%
1.6T	0%	1%	2%	2%	4%	4%	5%	9%	1%	6%	9%	10%
3.2T	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	5%
SiPh penetration rate	**4%**	**5%**	**7%**	**8%**	**8%**	**9%**	**10%**	**13%**	**6%**	**10%**	**15%**	**18%**

	1Q25	2Q25	3Q25	4Q25	1Q26E	2Q26E	3Q26E	4Q26E	2025	2026E	2027E	2028E
ASP (US$)												
By speed (US$)	**71**	**81**	**94**	**97**	**103**	**116**	**111**	**141**	**85**	**113**	**137**	**124**
Below 400G	50	48	47	44	47	48	43	43	47	44	39	31
400G	234	130	214	105	191	252	266	181	230	210	184	143
800G	456	1,635	602	565	320	519	418	435	440	396	327	244
1.6T			2,416	1,073	1,342	954	904	1,318	840	734	599	435
3.2T												768
YoY					**45%**	**44%**	**18%**	**45%**		**33%**	**22%**	**-10%**
Below 400G					-6%	0%	-8%	-3%		-6%	-12%	-20%
400G					-18%	93%	25%	72%		-9%	-13%	-22%
800G					-30%	-68%	-31%	-23%		-10%	-17%	-25%
1.6T							-63%	23%		-13%	-18%	-27%
3.2T												-25%

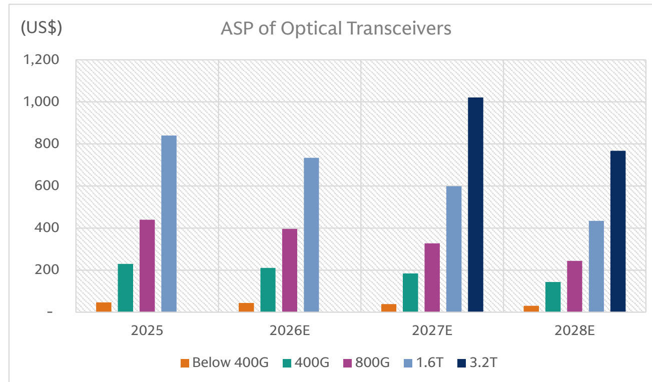
Source: Goldman Sachs Global Investment Research

Exhibit 1: Global Optical transceivers: 800G/ 1.6T/ 3.2T to account for 8%/ 10%/ 5% of the total transceiver volume by 2028E



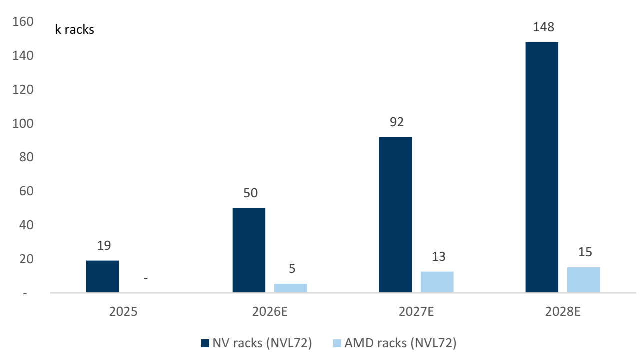
Source: Goldman Sachs Global Investment Research

Exhibit 2: Global Optical transceivers: We assume an ASP decline YoY for like-for-like products



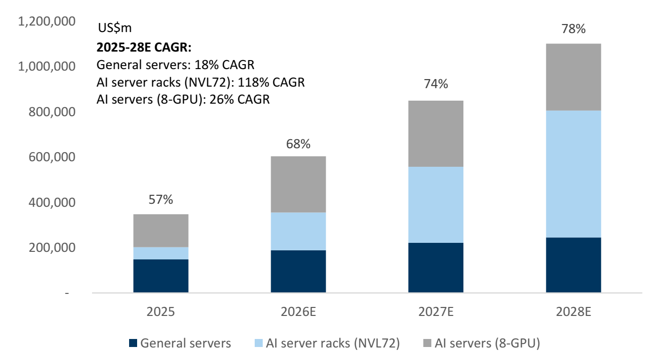
Source: Goldman Sachs Global Investment Research

Exhibit 3: AI server racks global shipment by chipset platforms



Source: Goldman Sachs Global Investment Research

Exhibit 4: Global server value TAM



% in chart indicates AI server (8-GPU and NVL72) revenues mix

Source: Goldman Sachs Global Investment Research

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