

Lumentum: How Much Capacity Before the Orders?

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A strategy case for MBA students and working professionals

Decision date: February 8, 2024

Information cutoff: February 8, 2024, after Lumentum's fiscal Q2 earnings call

Case status: Constructed teaching decision; Lumentum did not disclose this specific internal choice.

The next tranche

On February 8, 2024, Lumentum's leadership team had a capacity question to resolve. The company had announced production lines in Thailand for advanced datacom transceivers, including 800G and 1.6T products. Management described strong AI-data-center bandwidth demand, traction on new transceiver opportunities and a planned summer capacity ramp. It expected to begin shipping 1.6T products to multiple customers in the second half of calendar 2024. These were management statements and plans. Public disclosures did not identify firm customer volumes, product-level margins or the amount of capacity already covered by orders. [P2] [P3]

The hypothetical assignment was to size the *next incremental tranche* beyond the Thailand line already announced. The team could commit additional internal capacity now; stage further spending against customer qualification, orders and production evidence; or investigate qualified external capacity for selected needs while reserving internal capital. The announced line was part of the operating context, not an option to cancel in this decision. No external supplier capacity for these products had been disclosed.

Waiting could protect Lumentum from building specialized capacity ahead of orders that might change. But optical components and modules require development, qualification and ramp time. If customer programs scaled quickly, a delayed tranche could constrain shipments and learning. The team had to decide what it knew, what it needed to learn and which evidence should unlock the next commitment.

A portfolio in transition

Lumentum designs and manufactures optical and photonic products for communications and industrial applications. Its February 2024 results combined very different end markets and product families. Cloud & Networking included more than datacom transceivers, while Industrial Tech served a separate set of markets. The recently acquired Cloud Light designed, marketed and manufactured advanced optical modules for data-center interconnect applications. Lumentum said the acquisition broadened its cloud and networking position; integration, overlap with existing operations and realized synergies remained uncertain. [P1]

The acquisition closed in November 2023 for total consideration of \$728.5 million, including \$705.0 million in cash. At December 30, 2023, Lumentum reported \$1.224 billion in cash, cash equivalents and short-term investments. Cash had fallen \$720.3 million from the prior quarter, with the acquisition accounting for much of the movement described by the company. These figures provided liquidity context, not a discretionary budget for Thailand or a complete measure of financial headroom. [P1] [P2]

A weak quarter-and an AI opportunity

Lumentum reported second-quarter fiscal 2024 revenue of \$366.8 million, down 27.5% year over year. Cloud & Networking revenue was \$286.7 million, down 25.1%; Industrial Tech revenue was \$80.1 million, down 34.9%. Consolidated GAAP gross margin was 17.4%, compared with a non-GAAP gross margin of 32.6%. GAAP operating margin was negative 28.7%, while non-GAAP operating margin was positive 3.5%. Each measure described the whole company, not Thailand's proposed 800G/1.6T capacity. The difference between GAAP and non-GAAP results was material and should remain visible in any analysis. [P1] [P2]

Management attributed pressure to sluggish carrier capital spending and customer inventory correction and expected inventory digestion to continue through the rest of fiscal 2024. The 10-Q also connected lower gross margin to factory underutilization as customers reduced elevated inventories. Those explanations were relevant to the risk of adding capacity, but did not prove that the new datacom programs would weaken in the same way. Nor did a possible AI ramp erase weakness elsewhere in the portfolio. [P1] [P2]

The growth case rested on different evidence. Management described strong AI-data-center bandwidth demand, traction on new transceiver opportunities and investment in Thailand to serve growing 800G/1.6T demand from multiple customers. The company planned power-efficient 4x200G and 1.6T products for the second half of calendar 2024. The disclosures did not name those customers, provide committed volumes, report qualification completion or isolate firm orders for the products. "Multiple customers" did not establish an order book. [P2] [P3]

A competitor signal pointed in the same direction but had limits. Coherent reported strong AI/ML-related datacom orders and more than \$100 million of overall 800G revenue, up over 100% sequentially. It did not attribute all 800G revenue to AI. Its orders and revenue were Coherent's results, not proof of Lumentum demand, market share or customer economics. [P4]

Exhibit 1. Selected reported performance

USD millions except percentages. Lumentum Q2 FY2024, quarter ended December 30, 2023. Segment comparisons use the company's recast structure.

Measure	Q2 FY2024	Year-over-year change
Total revenue	\$366.8	−27.5%
Cloud & Networking revenue	\$286.7	−25.1%
Industrial Tech revenue	\$80.1	−34.9%
GAAP gross margin	17.4%	-
Non-GAAP gross margin	32.6%	-
GAAP operating margin	−28.7%	-

Measure	Q2 FY2024	Year-over-year change
Non-GAAP operating margin	3.5%	-

Source: Lumentum Q2 FY2024 results release and Form 10-Q. Segment revenue is broader than the target datacom products. GAAP and non-GAAP figures are distinct company-reported measures; non-GAAP is not a substitute for GAAP. [P1] [P2]

Commitments, flexibility and the cost of being wrong

Lumentum's 10-Q said most customers did not have volume or long-term purchase commitments and could change behavior with little notice. Elevated customer inventories had reduced orders, complicated forecasting and increased risks of excess or obsolete inventory and underutilization. The company also warned that contract manufacturers could hold non-cancellable purchase commitments; if forecast orders failed to materialize, Lumentum might incur charges or capacity underutilization costs. Qualifying a replacement contract manufacturer could be time-consuming and costly. [P1]

At year-end, purchase obligations totaled \$423.8 million, of which \$372.1 million was due within one year. Six-month cash capital expenditures were \$88.8 million, compared with \$62.8 million in the prior-year period; construction in progress was \$102.1 million, primarily equipment expected to enter service within 12 months. The figures covered company-wide obligations and investment, not the Thailand line or next tranche. They could not establish project cost, available capacity, cash affordability or a payback period. [P1]

Three interpretations of the situation remained plausible. Inventory digestion could be a temporary cycle, with new data-center demand creating a durable next growth opportunity. Alternatively, AI demand could be concentrated, slower to qualify or less committed than the broad market narrative suggested. Cloud Light could strengthen Lumentum's module offer and customer access, or add integration and capital demands without resolving the line-level bottleneck. Product mix and ramp costs could also explain weak consolidated margins without revealing the future economics of target products.

Research on irreversible investment offered a way to structure the decision, not a company-specific answer. Pindyck distinguished technical uncertainty that investment can resolve from input-cost uncertainty that changes independently; the first can make an initial learning phase valuable, while the second can increase the value of waiting. Work on capacity flexibility showed that the cost and direction of volume adjustment can change both the preferred capacity and investment timing. These models were stylized and did not estimate Lumentum's demand, yields, utilization or returns. [A1] [A2]

Decision at the cutoff

The leadership team had to recommend the scale and timing of the next capacity tranche. A larger commitment could protect lead time and prepare for customer ramps. Staged investment could preserve the option to learn from qualification, orders and yield before more capital became difficult to recover. External capacity, if qualified and available on workable terms, could serve as a selective bridge or buffer, but could introduce cost, quality, control and supply-security trade-offs. Public information did not show whether an outside source was feasible for these products.

No public evidence supplied the inputs for an incremental project forecast: Thailand capex, line capacity, yield, utilization, unit cost, customer-specific demand, order coverage, target-product

margins, lead times or outsourcing economics. The team would need to choose measurable gates and make its assumptions explicit. What customer, technical and economic evidence should trigger the next commitment? Which signals should cause the team to pause, redirect or revisit the capacity plan?

Discussion questions

1. What is fixed in this decision, and what remains open? Why is the already announced Thailand line different from the next tranche?
2. How strong is the investment case? Separate evidence of AI/datacom opportunity from evidence of Lumentum-specific firm demand and target-product economics.
3. What do the quarter's financial results and company-wide capital figures say about Lumentum's position? What can they not establish about Thailand?
4. Compare immediate commitment, staged internal investment and selective external capacity. What capabilities, risks and information does each path create?
5. Recommend a sequence. State the assumptions behind it, the evidence gates you would use, and the finding that would cause you to change course.

Sources and cutoff

Company information is limited to material public by February 8, 2024. Management expectations and competitor statements are attributed. No subsequent product ramp, market result or other outcome is included. Full source versions, locators, reading depth, academic limits and calculations are in the research source register, evidence extraction and literature review.

- **[P1]** [Lumentum FY2024 Q2 Form 10-Q](#), filed February 8, 2024. Relevant pages: 4-6, 11-14, 22-23, 48-51, 54-57, 61-63, 71-72.
- **[P2]** [Lumentum fiscal second-quarter 2024 results release](#), February 8, 2024; CEO statement, financial tables, segment table and liquidity/acquisition discussion.
- **[P3]** [Lumentum Q2 FY2024 earnings presentation](#), February 8, 2024, p. 3.
- **[P4]** [Coherent investor presentation, Exhibit 99.3](#), dated February 5 and filed February 6, 2024, p. 21, SEC lines 114-116.
- **[A1]** Robert S. Pindyck, "Investments of Uncertain Cost," *Journal of Financial Economics* 34(1), 1993, pp. 53-76, [full article PDF](#).
- **[A2]** Domenico De Giovanni and Ivar Massabò, "Capacity investment under uncertainty: The effect of volume flexibility," *International Journal of Production Economics* 198 (2018), pp. 165-176, [journal record](#); 27-page 2018 author manuscript read, final typeset version not read.

The decision assignment and leadership deliberation are constructed for teaching. They do not represent a disclosed Lumentum board or management decision.