

**INFINERA
(NASDAQ: INFN)**

**With ICE6’s technology winning,
800G dominance is a possibility**

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KEY POINTS

- Infinera is positioning itself to take advantage of bandwidth demand growth driven by COVID-related remote access, 5G wireless rollouts, and overall global growth. The high-end optical market (600G+) is expected to grow 25% a year through 2024 to over \$2bn annually (according to Ovum).
- Infinera's 5th gen optical engine (ICE6) has been showing well in trials (especially with Verizon this summer). With Huawei security concerns, there are now only two vendors at 800G (Infinera and Ciena) – down from 8+ for 3rd gen and 4th gen.
- ICE6 beats the 800G competition with 4x longer reach and a 25% cost advantage. At 600G, the reach advantage is 2.5x and cost advantage is 35%. These advantages could be why Ciena's outlook is for a broad decline, while Infinera is looking for growth. The 3Q is seasonally down but the company guided for sequential growth in 3Q20 and 4Q20.
- The world is in the early stages of a 600G ramp with its lower price/bit and lower power consumption. The company added six new 600G customers in 2Q20 to a total of 16, including one major ICP.
- After 11 years as CEO, Tom Fallon is planning on be stepping down and David Heard, the Company's Chief Operating Officer, is expected to be taking the helm by the end of 2020.
- The company is expecting step-function margin expansion in 2H21. This will likely be driven by 600G rollouts first, then by 800G. Some COVID-driven supply issues continue but have lessened recently. Marketing and sales are lower as an ERP upgrade and the Coriant integration are done. F3Q20 earnings are expected to be released on 6-Nov-2020.

KEY STATISTICS

Price:	\$6.70
52 Week Range:	\$3.68 - \$9.25
Avg. Daily Vol. (30 day)	2,257,145
Shares Out (MM):	187
Market Cap (MM):	\$1,255
Institutional Ownerships	92%
Short Int. (MM) / % of float:	25.4 / 16.1%
Debt to Equity:	2
Revenue TTM (MM):	\$1,372

Source: YCharts, *As of October 16, 2020



COMPANY OVERVIEW

Infinera provides optical transport networking equipment, software and services to telecommunications service providers, Internet content providers (ICPs), cable providers, wholesale and enterprise carriers, research and education institutions, enterprise customers and government entities across the globe. The company's portfolio consists of the Infinera DTN-X Family, the Infinera DTN platform, the Infinera Cloud Xpress Family, the Infinera XTM Series, the Infinera XTG Series and the Infinera FlexILS platform, addressing long-haul, subsea and metro networks end-to-end. Its technology includes Infinera Intelligent Transport Network Architecture, Infinera Photonic Integrated Circuits, Infinera FlexCoherent Processor, Super-Channels, Sliceable Photonics, Disaggregation, Integrated Digital Switching, Infinera Instant Bandwidth, Infinera Packet-Optical Transport, Multi-layer Switching and Optimization, and Management, Control and Security.

WTR CATALYST MONITOR

- ✓ Tracking ICE6 800G trials and wins is one part of the equation for Infinera investors. Technology trials/demonstrations beyond Verizon ([Verizon 800G trial](#)) and Windstream ([Windstream 800G trial](#)) will likely be important. The company expects another ICP to be in trials soon and could be receiving shipments a 4Q20. We expect some Huawei customers to start trials within the next couple of quarters. In addition, the availability of 800G will likely also be critical. According to management, ICE6 800G should ship to customers by the end of 2020.
- ✓ While Internet Cloud Providers (ICPs) have slowed their growth from COVID, they could continue to be significant consumers of networking and they could return to higher growth in 2021. ICPs will likely continue to take market share from on-premise enterprise for the next 10-15 years to nearly 50% of the market. Public cloud grew 25% YoY in 2Q20 while Enterprise fell 3%. Amazon's AWS and Microsoft Azure are the two largest, with slightly over 50% of the market when combined. Tracking their growth is important, but not critical to Infinera.
- ✓ 5G rollouts will likely drive bandwidth growth and tracking progress globally is important. Ookla's 5G map ([Ookla 5G](#)) could be a preferred technology for many as it uses verified public sources and Ookla's own traffic data. Apple announced its 5G iPhones last week with four different iPhone 12 models, and Verizon's announcement a major 5G push. Preorders of iPhone 12s could be a good proxy for adoption of 5G by consumers. Digitimes expects 63-68mn iPhone 12s in the second half of 2020, possibly slowed by COVID's impact on supply chain
- ✓ The company is expecting step-function margin expansion in 2H21. This will likely be driven by 600G rollouts first, then by 800G. The company added six new 600G customers in 2Q20 to a total of 16, including one major ICP. Some COVID-driven supply issues continue but have lessened recently. On the expense side, R&D investments continue, but marketing and sales are lower as ERP upgrade and Coriant integration are completed. The 3Q is seasonally down but the company has guided for sequential growth and expects 4Q20 to be up sequentially as well.

OUR INSIGHT

The Opportunities

With COVID-19 changing nearly every business, Infinera has new opportunities that could change its trajectory.

New ICE6 (5th generation, 800G) could be the game changer for Infinera

The [ICE6 optical engine](#) gives Infinera a 4x distance reach and reportedly a 25% cost advantage in 800G versus the competition, and the competition is narrowing. With Huawei under immense political pressure, Ciena is the only other U.S. vendor at 800G. As the challenger, Infinera has market share growth opportunities. There were eight or more competitors in the 3rd generation (400G) and 4th generation (600G) markets.

The successful Verizon trial with ICE6 this summer showed ICE6's Nyquist subcarriers, long-codeword probabilistic constellation shaping (LC-PCS), and significant vertical integration are working. The new technology is estimated to provide network cost savings of 65% vs 400G implementations (3rd generation), 35% vs 600G (4th gen), and 25% vs. other 800G (5th). Management was upbeat on the August call and expects its first customer shipment before the close of 2020. A generation usually provides eight years of significant revenue before the next generation comes along.

Customers moving away from Huawei

Previously, Infinera thought that the push away from Huawei would not be material, however, that view has changed. Displacement of Huawei is real and helping Infinera. In one recent competition between Infinera and Huawei, Huawei was ruled out and the business was awarded to Infinera. Management is citing significant interest in replacing already deployed Huawei technology; however, it expects that process could take years – a multi-year tailwind for Infinera.

Bandwidth growth will likely be driven by 5G, COVID, and global demand growth

The edge and metro markets are seeing growth from COVID today and likely from 5G soon. The high-end optical market (600G+) is expected to grow 25% a year through 2024 to over \$2bn annually. The trend to open compact solutions will likely drive customers to Infinera, most likely its new Groove (GX) series. The world is in the early stages of a 600G ramp with its lower price/bit and lower power consumption. Infinera's 600G to was shipped in an internet cloud provider (ICP) recently. Infinera's 600G solution is estimated to be approximately 65% cheaper than current 400G competition, and 25% cheaper than competition's 800G.

The Obstacles

Although there are numerous favorable tailwinds, there are also headwinds that must be navigated and overcome. The company has not had a profitable quarter since mid-2016, however, expectations are for positive EPS in 4Q20. Some of the obstacles include the following:

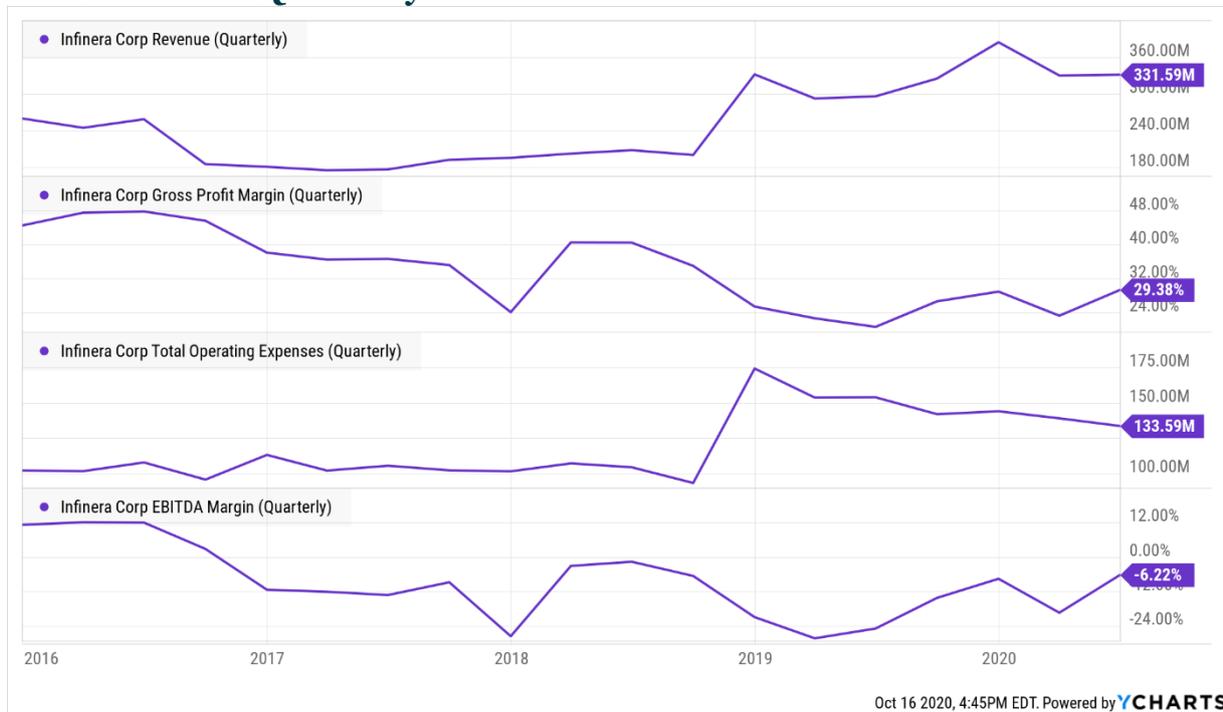
- It is obvious, but external economic factors, election considerations, geopolitical issues, pandemics, etc. can all negatively impact demand for any product or service and Infinera is no different. Despite the variety of factors helping to sell bandwidth, customers are still sensitive to the global economic conditions, though its customers tend to be better insulated as they have significant resources.
- ICE6, both 600G and 800G, is predicted to be the future of Infinera. Any material issues with performance or manufacturing of ICE6 would be a significant obstacle for Infinera. This will be Infinera's fifth-generation optical product.
- The CEO change could provide some near-term headwinds. After 11 years as CEO, Tom Fallon is planning on stepping down and David Heard, the Chief Operating Officer, is expected to take over. We expect the change to occur by the end of 2020.

WATER TOWER RESEARCH CHART TOPPERS

3 Year Earnings Overview



Selected Historical Quarterly Financial Results



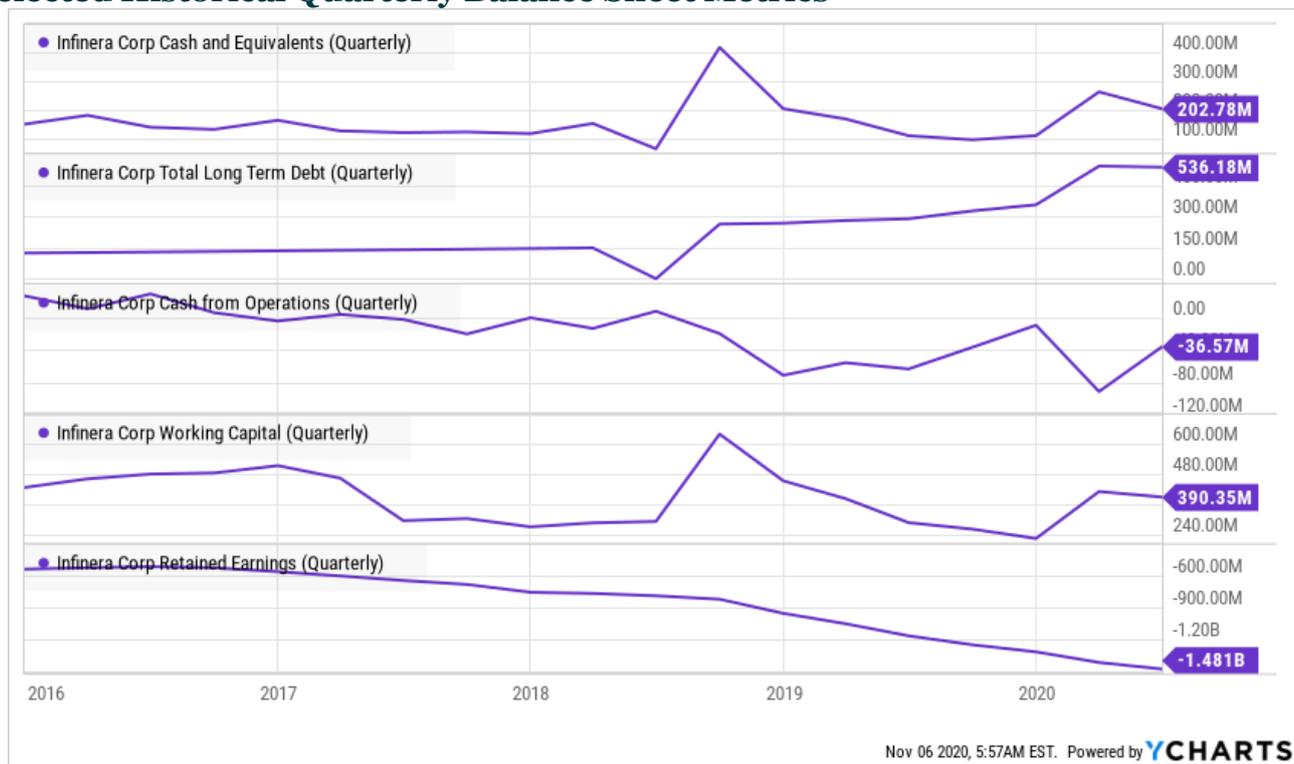
Technical Stock Chart



Price-to-Sales



Selected Historical Quarterly Balance Sheet Metrics



ABOUT THE ANALYST

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In his role at Water Tower Research, Dr. Roy provides cutting-edge equity research coverage of IT hardware companies supplying hardware to both commercial and individual users, and communications equipment companies which power the connected world.

Prior to Water Tower Research, Dr. Roy worked as lead analyst at UBS covering IT Hardware, Communications Equipment, and IT Services. During his 20 years covering technology stocks on the sell-side, Dr. Roy was also a lead analyst covering Alternative Energy, Advanced Materials, and Nanotechnology at Merrill Lynch, W.R. Hambrecht, and Janney Montgomery Scott. Before his sell-side equity research career, Dr. Roy was a lead software architect at J.P. Morgan, an AI sales engineer at Neuron Data, and a systems engineer and AI researcher at Hughes Aircraft.

Dr. Roy holds a Ph.D. degree in Computer Science from the University of California, Irvine, a MSEE degree from the University of Southern California, and a BSEE degree from the University of California, San Diego where he was a Regents Scholar.

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