



Broadband World Forum

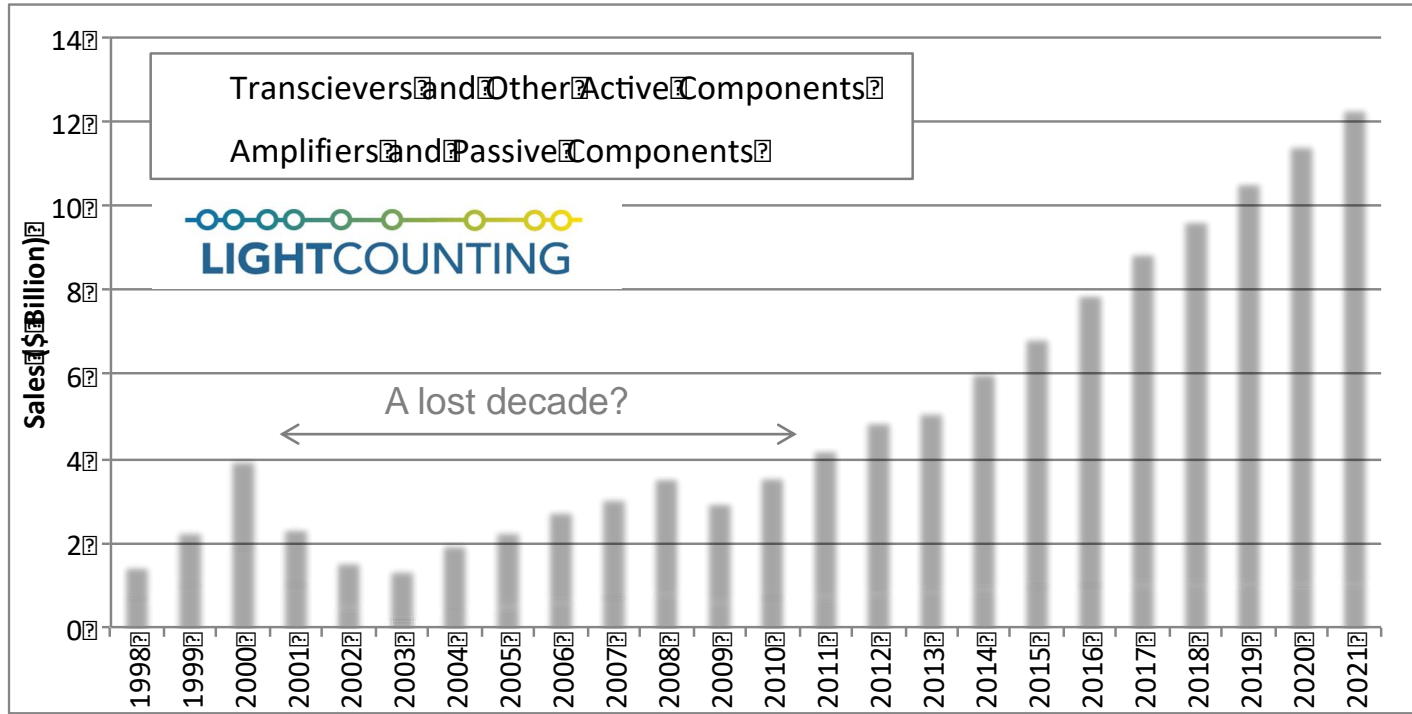
Trends and demand for full fiber networks – An analysis from an optical component perspective

We've come a long way, let's stay the course

Stéphane Téral, Chief Analyst | Amsterdam - October 13, 2021

We have come a long way from the Telecom Bubble

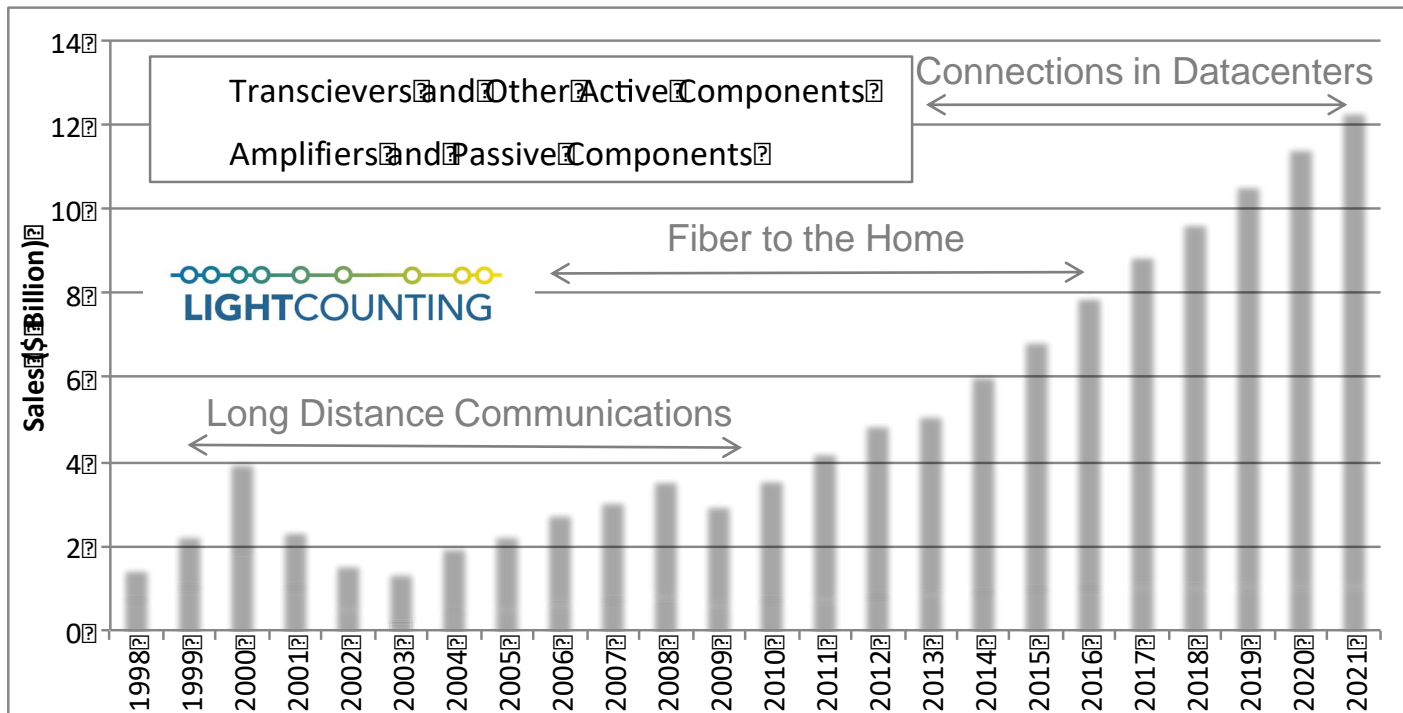
- Telecom Bubble of 2000-2001
- It took 10 years for the market to recover
- Steady growth since 2009, enabled by significant improvements in technologies and cost reduction



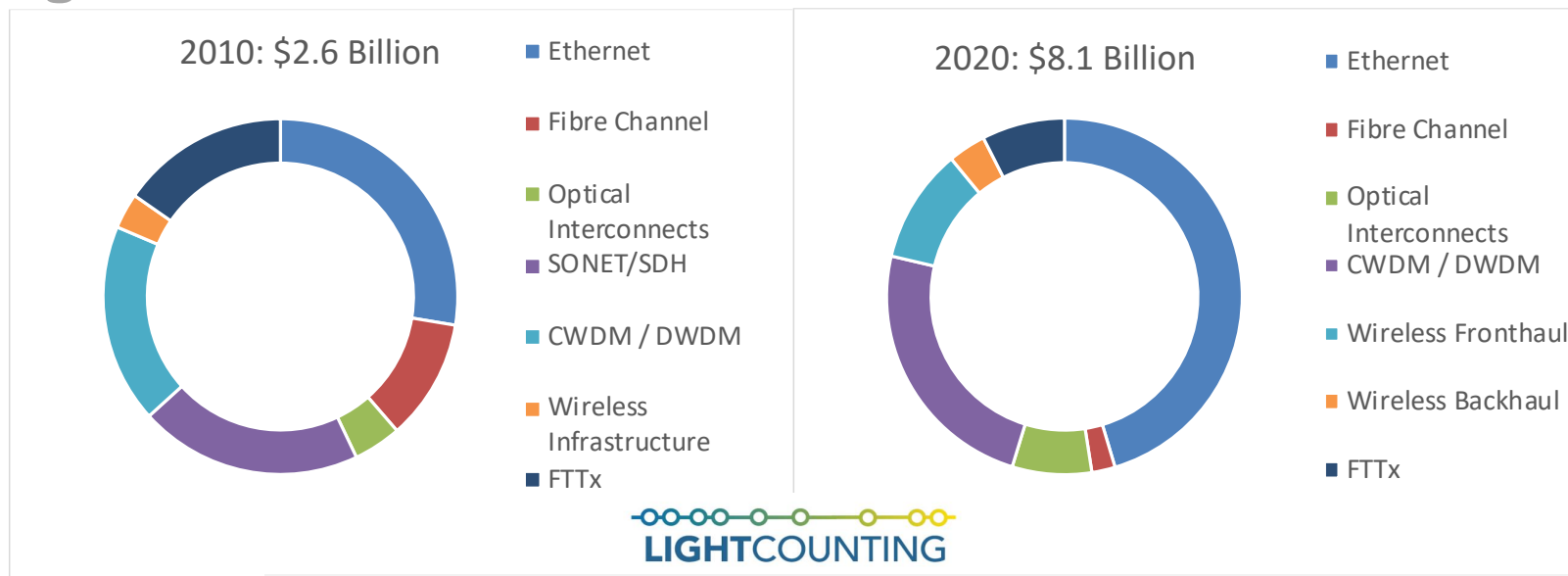
Lower cost made optical transceivers attractive for new applications



- Long Distance: 80km – 3000km
- Fiber to the Home (FTTH): 0.5km – 40km
- Datacenters: 3 meters – 2km
- Wireless Fronthaul
- Active optical cables for HPCs



In the last decade, the global transceiver market grew almost 4x!

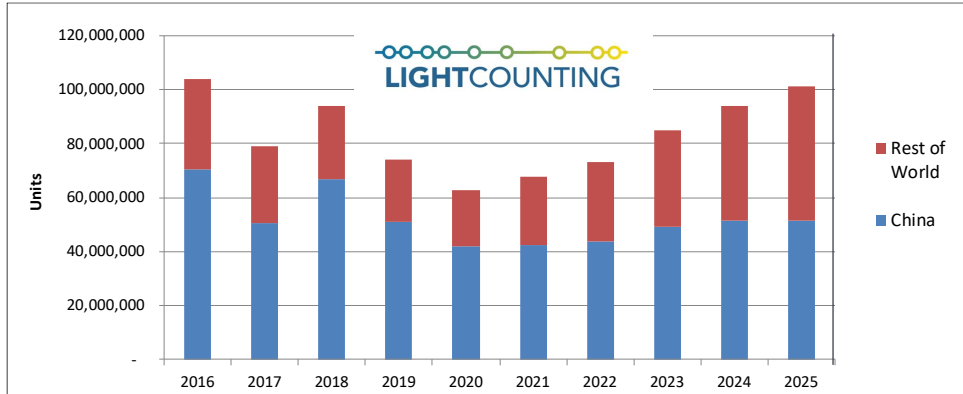


Source: April 2021 Market Forecast Report: <https://www.lightcounting.com/report/april-2021-market-forecast-100>

- SONET/SDH was replaced by Ethernet, but it took a lot longer than expected
- Wireless Fronthaul was a completely new application enabled by lower cost of optics and fiber

The demand for FTTx optics is looking up!

Government policies made a huge difference, but lower cost also played a major role

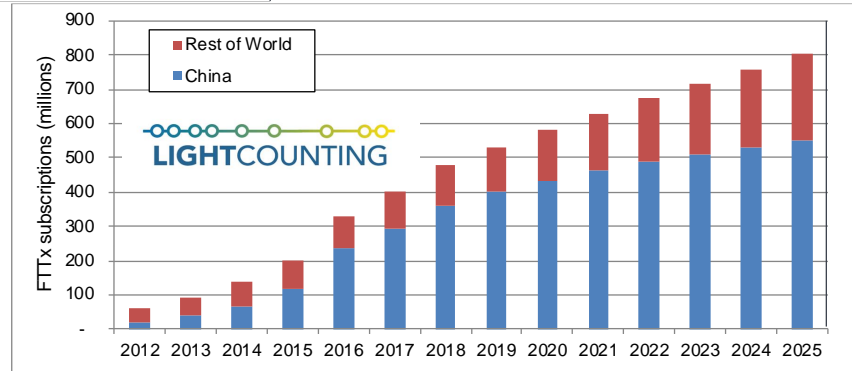


Shipments of FTTx transceivers and BOSAs



Source: January 2021 Market for Optics in China Report: <https://www.lightcounting.com/report/january-2021-market-for-optics-in-china-4>

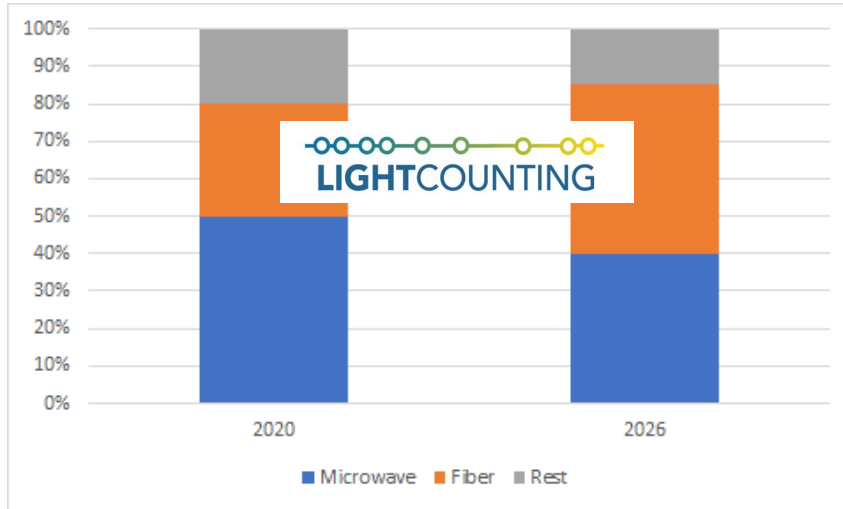
FTTx subscribers



4G drove the need for fiber, 5G will need even more



Fiber will grow from 30% in 2020 to 45% of “any-haul” rollouts in 2026 but point-to-point microwave is not disappearing anytime soon



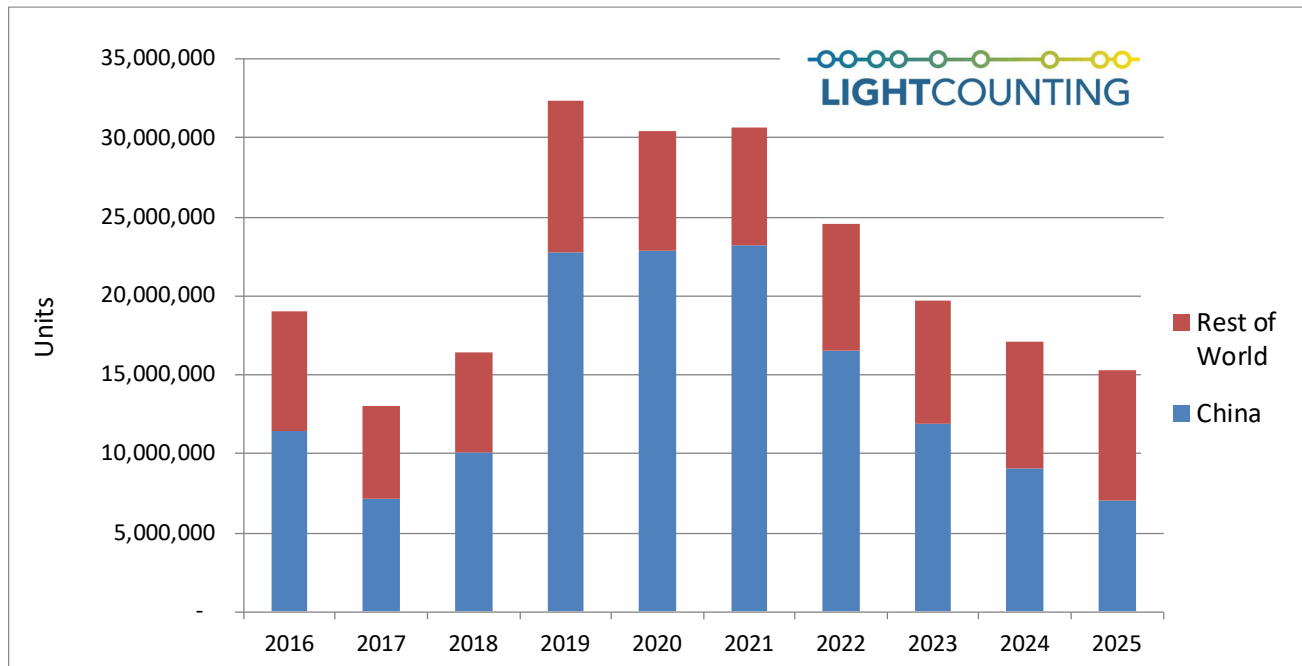
Source: LightCounting
Rest = copper, satellite, sub-6GHz unlicensed & licensed

Point-to-point microwave backhaul will remain an essential complement to fiber for 5G transport for traditional macro sites, while Integrated Access and Backhaul (IAB) is a promising advanced concept that may become as important for wireless backhaul of street sites.

Source: <https://www.ericsson.com/en/reports-and-papers/ericsson-technology-review/articles/introducing-integrated-access-and-backhaul>

China fuels Wireless Fronthaul deployments...

China leads the world in 5G deployments and fiber connectivity to antennas



Source: January 2021 Market for Optics in China Report: <https://www.lightcounting.com/report/january-2021-market-for-optics-in-china-4>
September 2021 China Wireless Infrastructure 1H21 Report: <https://www.lightcounting.com/report/september-2021-china-wireless-infrastructure-1h21-117>

...and Corning sees strong demand for fiber

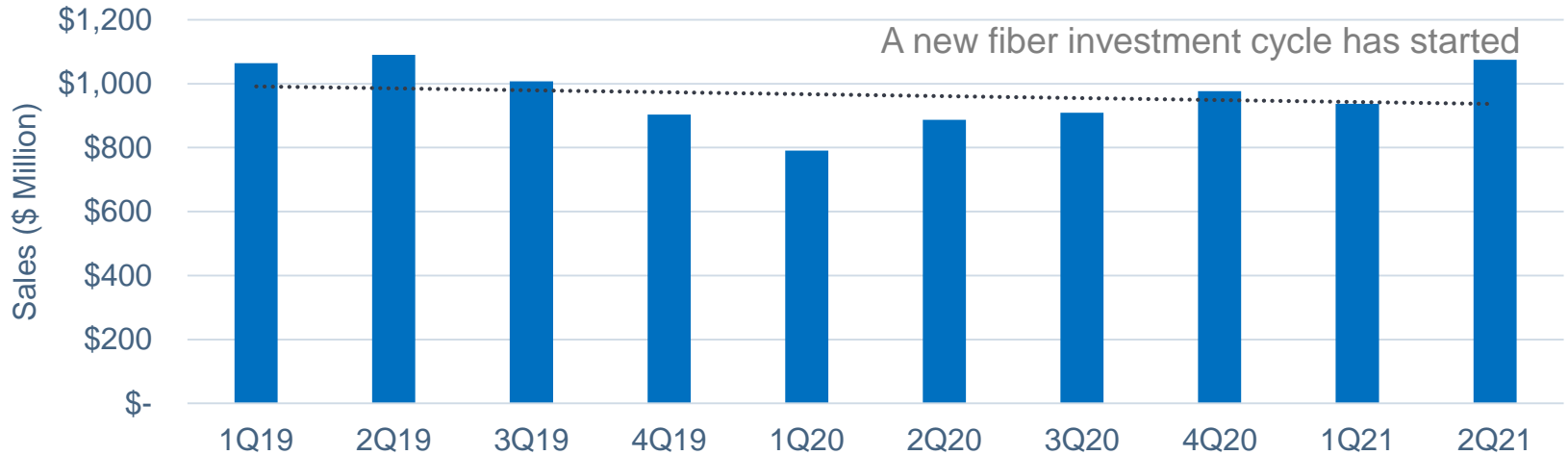
A new cycle is starting driven by 5G, FTTH, and cloud computing

Pace of data center building is accelerating and capital spending by both enterprise and communication service providers (CSPs) is increasing

Case in point: AT&T's mega fiber deal with Corning (9/28/2021)



Corning's Optical Communications Quarterly Sales (\$ Million)



Source: quarterly data from Corning

Bottom Line: All market forces are favorable for good reasons



We have grown up and learned our lesson from the Great Telecom Crash

Now, governments around the world are announcing and initiating plans to extend the reach of broadband => more fiber

Innovation remains unabated and leads to more affordable products, components and systems => better adoption and penetration of optics

And new materials (Polymers, LiNbO₃ films, PCSELs, LEDs, quantum dots, etc.) and devices will continue to improve and drive the cost further down

Keep on investing, inventing and re-inventing!

Don't let challenges to limit your imagination!

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Thank You



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THE NAME ALONE IS WHAT SETS US APART AND WHAT DEFINES US AS A COMPANY.

Seventeen years ago, LightCounting began with an analyst team focused on research for high-speed interconnects for the datacom, telecom, and consumer communications markets. From that time our research team has grown to cover the whole supply chain supporting Optical Networks and Datacenters. In early 2020, we added coverage of the global Wireless Infrastructure market as well. We have been defining and refining the market intelligence mix ever since, to offer our clients a unique perspective on the industry landscape ahead and a clear roadmap to navigate it with.

THAT'S OUR MARKET INTELLIGENCE. THAT'S HOW IT HELPS OUR CLIENTS GROW.