LIGHTCOUNTING

Optical Networks and Datacenters

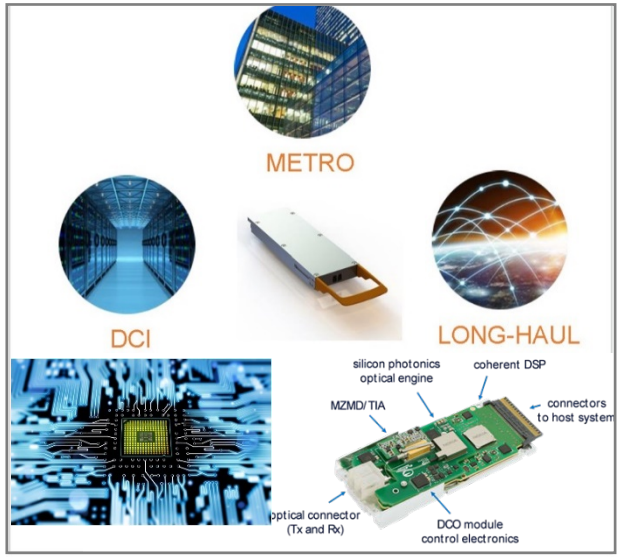
Publication Profiles & Subscription Packages

2022

Report Overviews & Descriptions

LightCounting's reports and services are designed to help executives plan and run their businesses. We support decision making based on facts and data with realistic projections. Our research covers the entire supply chain of the global communications industry.

This brochure summarizes our coverage of Optical Networks and Datacenters with in-depth analysis of the market for optical transceivers, including the optical and electronic chips used in these modules.



2022 Research Publication Calendar

JANUARY
- Vendors and Markets for Optics in China

FEBRUARY
- PAM4 and Coherent DSPs

MARCH
- Ethernet Optics
- Quarterly Market Update

APRIL
- Market Forecast
- NEW: Ethernet Switches & ASICs

MAY
- Silicon Photonics and Co-packaged Optics
- State of the Industry

JUNE
- Quarterly Market Update
- Telecom Network Transformation

JULY
- Mega Data Center Optics

AUGUST

SEPTEMBER
- Ethernet Optics
- Quarterly Market Update

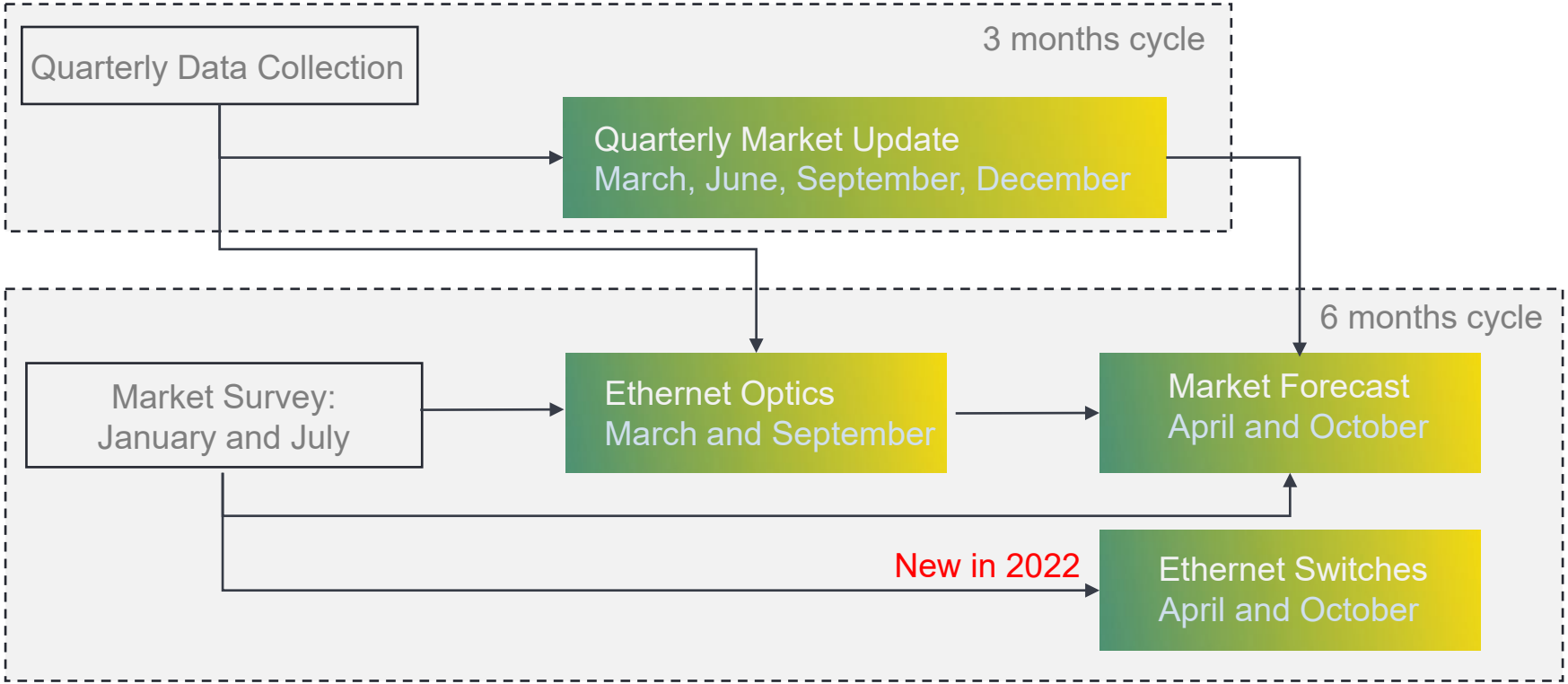
OCTOBER
- Market Forecast
- NEW: Ethernet Switches & ASICs

NOVEMBER
- Access Optics: FTTx and Wireless
- 3D Sensors and LIDARs

DECEMBER
- Quarterly Market Update
- AOCs, DACs and Co-packaged Optics

Data collection and publications flow

Quarterly and Semi-annual Reports



Vendors and Markets for Optics in China

FREQUENCY: ANNUAL ● DATE: JANUARY

Demand for optics from Chinese service providers surprised the industry in 2010-2020. It started with massive deployments of FTTx systems and continued with optical fronthaul in the mobile access market. Chinese Cloud companies are starting to build datacenters requiring more optical connectivity inside and outside of these facilities.

This report takes a closer look at all these developments and offers detailed profiles of the leading service providers and Cloud companies in China. It segments data on sales of optical components and modules in 2016-2021 between China and the rest of the world and offers a forecast for sales of optics to the Chinese market in 2022-2027.

It also profiles Chinese suppliers of optical modules, components and IC chips.

COMPANIES PROFILED

ICPs: 21Vianet, Alibaba, Baidu, Bytedance, Ctrip, Face++, JD.com, Ksyun, QingCloud, Tencent, Vipshop, Ucloud

CSPs: China Broadcasting Network, China Mobile, China Telecom, China Unicom

Equipment suppliers: FiberHome, H3C, Inspur, Huawei, Lenovo, ZTE

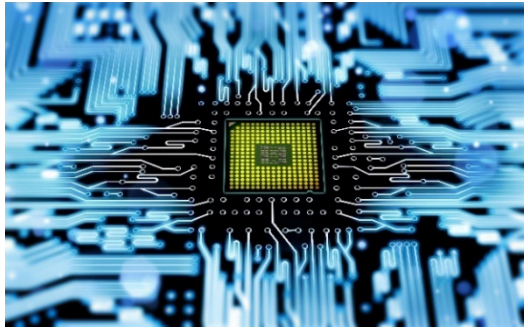
Module and component vendors: Accelink, APAT, ATOP, Broadex, CIG, Cloudlight, Eoptolink, Gigalight, HG Genuine, Hi-Optel, Hisense Broadband, Innolight, Linktel, O-Net, QXP, Vertilite, XGIGA, Xiamen San-U, YOFC

Semiconductor chip vendors: AmpliPHY, Aluksen, Aroptics Tech, Elite Optotronics, EOChip, Fujian ZK Litecore, InSiGa, Mindsemi, Phograin, Shijia Photons Technology, Yuanjie Semiconductor

PAM4 and Coherent DSPs

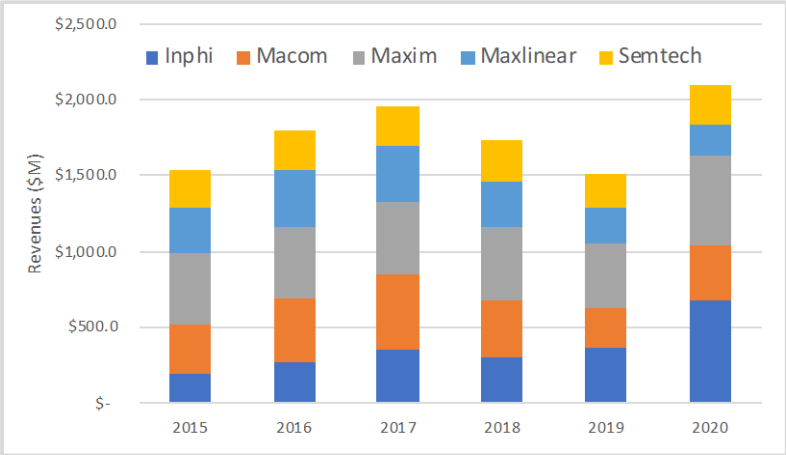
FREQUENCY: ANNUAL ● DATE: FEBRUARY

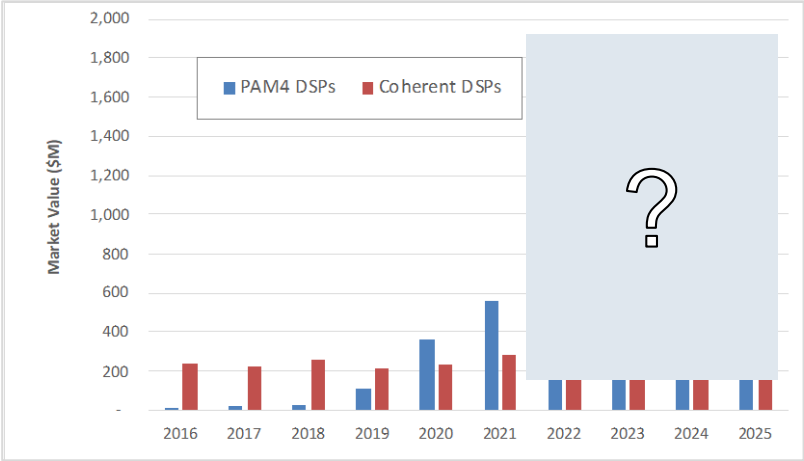
This report analyses the market for semiconductor IC chipsets used in optical transceivers and related products. The chipsets include laser drivers, CDRs, TIAs, and in some cases FEC, PAM4 and coherent DSP ICs. Demand for 400GbE connectivity inside mega datacenters and 400G DWDM optics on the outside boost demand for PAM4 and coherent DSP chips, making it a very attractive business opportunity in 2022-2027.



COMPANIES PROFILED

Acacia (Cisco), Credo, Inphi (Marvell), Macom, Maxim, Maxlinear, Semtech

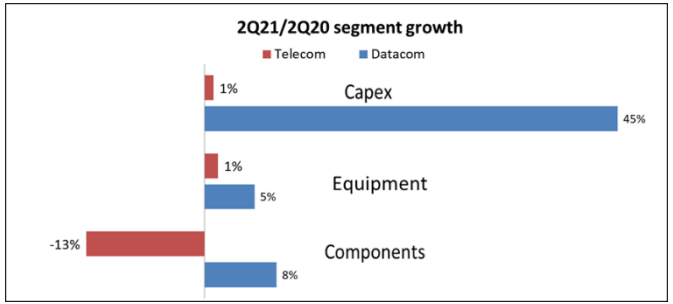


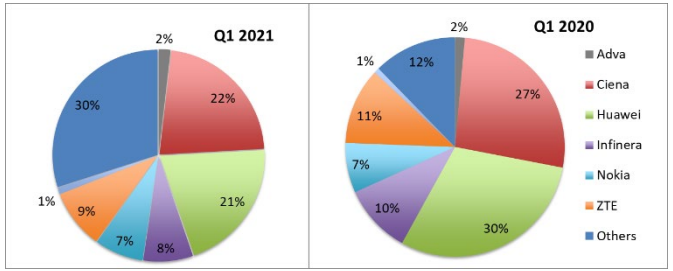


Quarterly Market Updates

FREQUENCY: QUARTERLY ✚ DATE: MARCH, JUNE, SEPTEMBER, DECEMBER

The quarterly market reports summarize the latest quarterly financial results and news of service providers, cloud companies, optical networking equipment vendors, module and component vendors. Each report comes with a database featuring quarterly shipments, pricing and sales for more than 100 categories of optical components and modules based on confidential sales data collected by us from more than 25 leading vendors. The database also includes historical component sales data for the last 8 quarters and estimates for the current and the next quarter.





FINANCIALS OF THE FOLLOWING COMPANIES ARE DISCUSSED

ICPs: Alibaba, Alphabet, Amazon, Baidu, eBay, Facebook, Microsoft, Oracle, PayPal, Tencent, Twitter, JD.com, NetEase, VIPShop

CSPs: AT&T, BT Group, China Mobile, China Telecom, China Unicom, Comcast, Deutsche Telekom, KDDI, NTT, Orange, Softbank, Telecom Italia, Telefonica, T-Mobile USA, Vodafone, Verizon

Telecom equipment suppliers: Adtran, Adva, Ciena, Ericsson, FiberHome, Huawei, Infinera, Nokia, ZTE

Datacom equipment suppliers: Arista, Cisco, Dell, Extreme Networks, H3C, HPE, IBM, Inspur, Juniper, Lenovo, NetApp, Oracle

Optical module and component vendors: II-VI, Accelink, Applied Optoelectronics, Eoptolink, HG Genuine, Hisense Broadband, Innolight, Lumentum, NeoPhotonics, OESolutions, O-Net, Sumitomo

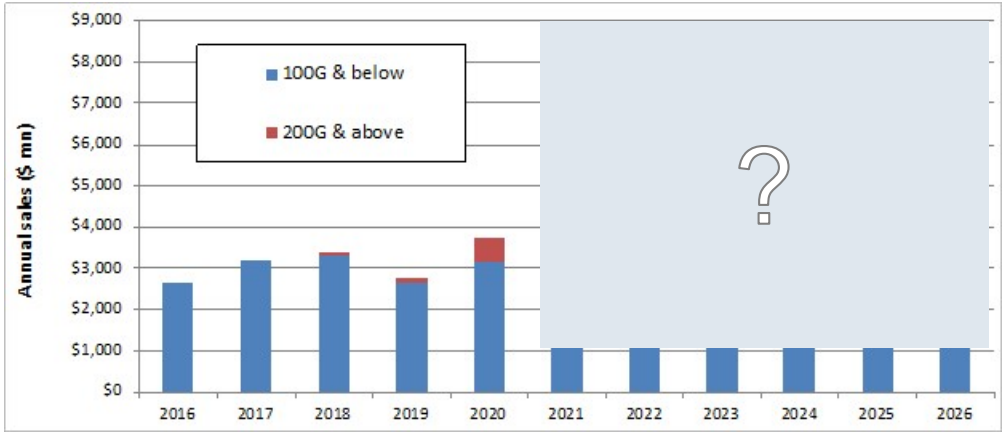
Semiconductor companies: AMD, Analog Devices, Broadcom, Inphi, Intel, MACOM, Marvell, Maxim, Maxlinear, Nvidia, Qualcomm, Semtech, Xilinx

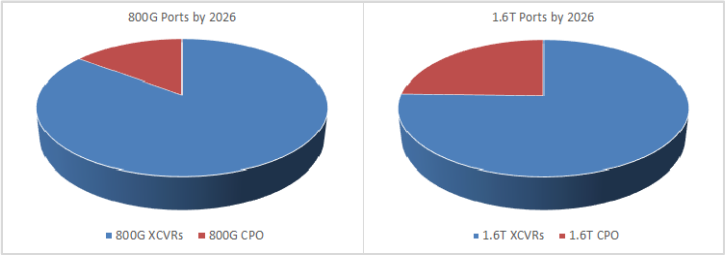
Ethernet Optics

FREQUENCY: SEMI-ANNUAL DATE: MARCH, SEPTEMBER

This report is focused on the markets and technologies for Ethernet Optical transceivers. It includes the latest shipment data and forecasts for more than 50 types of Ethernet transceivers segmented by speed, reach, and form factor. Confidential sales data from more than 20 leading suppliers provides the basis for this report. LightCounting is uniquely placed to provide an insider perspective on vendors' latest products and technologies.

Despite potential adoption of co-packaged optics, pluggable transceivers will continue to dominate the market over the next decade.

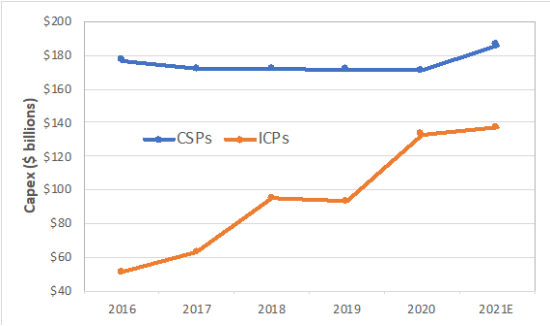


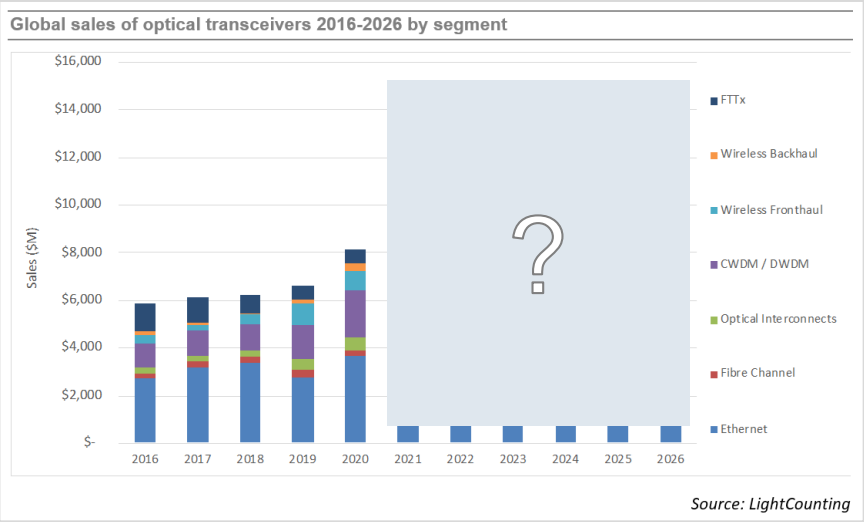


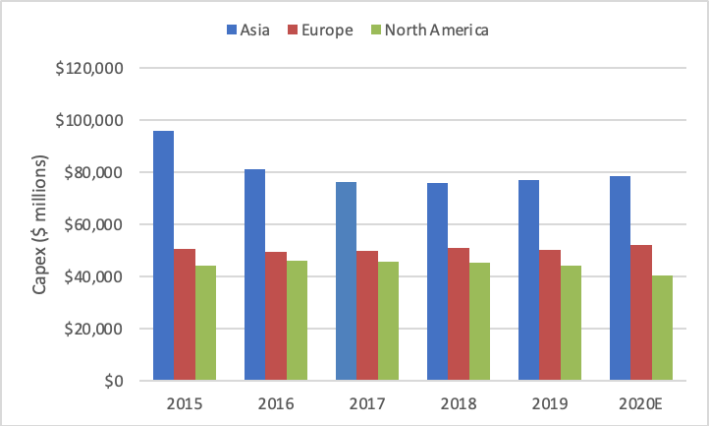
Market Forecast

FREQUENCY: SEMI-ANNUAL DATE: APRIL, OCTOBER

Based upon confidential sales data provided by more than 25 leading optical component and module vendors together with data points obtained from semiconductor vendors, network equipment vendors, service providers and cloud companies, the market forecast reports provide detailed forecasts for more than 125 optoelectronic modules including: transceivers, transponders, line cards and WSS used in CWDM/DWDM, Ethernet, Fiber Channel, FTTx, Wireless Fronthaul/Backhaul and Optical Interconnect applications.







New in 2022

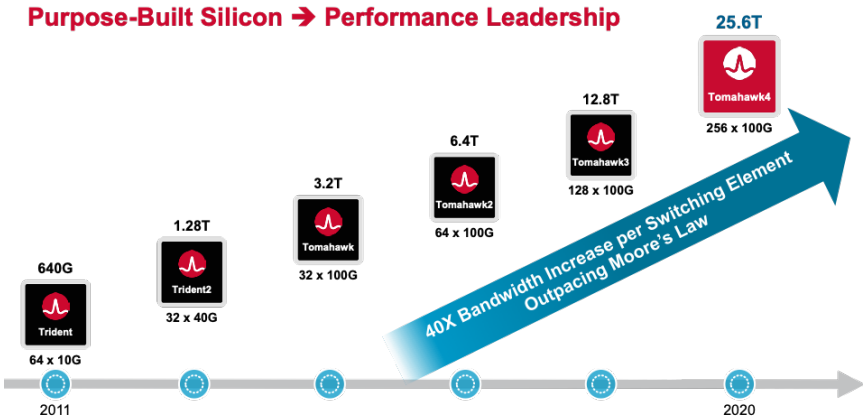
Ethernet Switches & ASICs

FREQUENCY: SEMI-ANNUAL DATE: APRIL, OCTOBER

This new report is based on concrete data provided by the top Ethernet switch vendors. It aligns Ethernet switch port shipments and forecasts with LightCounting's in-depth Ethernet optics research, providing unique insights on the attach rates between the two technologies.

Additionally, the report analyzes the application-specific integrated circuit (ASIC) segment of the Ethernet switch market. It associates data-plane forwarding silicon unit shipments and forecasts with thorough Ethernet switch market research to provide insights on the deployments of the two main types of network processors: merchant and custom-based silicon.

The report analyzes the latest trends in the Ethernet switch silicon industry including business strategy shifts, new product introductions, mergers and acquisitions and other noteworthy activities.



State of the Industry

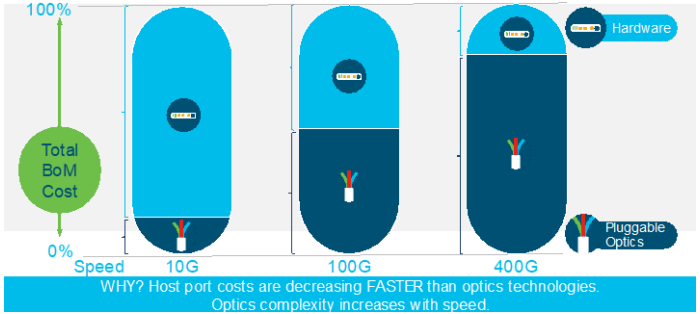
FREQUENCY: ANNUAL ● DATE: MAY

This report provides a holistic look at the optical communications industry supply chain, spanning service providers, cloud companies, equipment manufacturers and optical and semiconductor component and module suppliers. For each group, the report examines business strategies, M&A activity, and profitability. It also provides market shares of the top 3, top 6 and top 10 optical component and module vendors in CWDM/DWDM, Ethernet, Fibre Channel, FTTx, Wireless Fronthaul/Backhaul and Active Optical Cables (AOCs) market segments.

Ranking of TOP 10 Transceiver Suppliers:

2010	2016		2018	2020
Finisar	Finisar	1	Finisar	?
Opnext	Hisense	2	Innolight	
Sumitomo	Accelink	3	Hisense	
Avago	Acacia	4	Accelink	
Source Photonics	FOIT (Avago)	5	FOIT (Avago)	
Fujitsu	Oclaro	6	Lumentum/Oclaro	
JDSU	Innolight	7	Acacia	
Emcore	Sumitomo	8	Intel	
WTD	Lumentum	9	AOI	
NeoPhotonics	Source Photonics	10	Sumitomo	

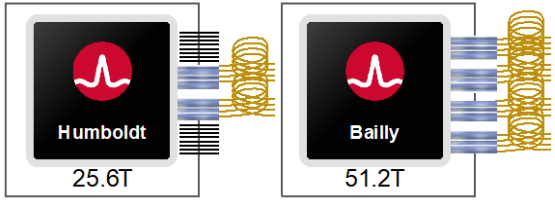
Percentage of Spend on Optics Will Continue to Increase as Speeds Increase



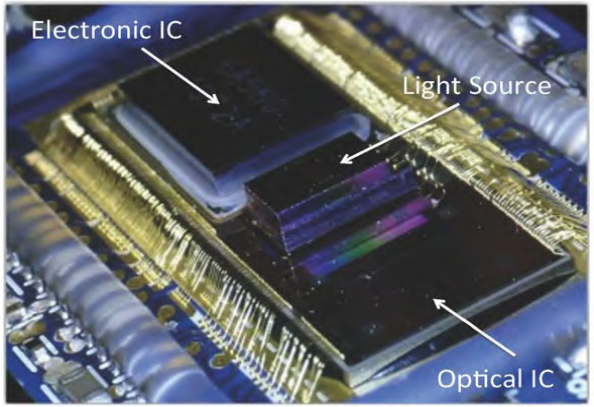
Silicon Photonics and Co-Packaged Optics

FREQUENCY: ANNUAL ● DATE: MAY

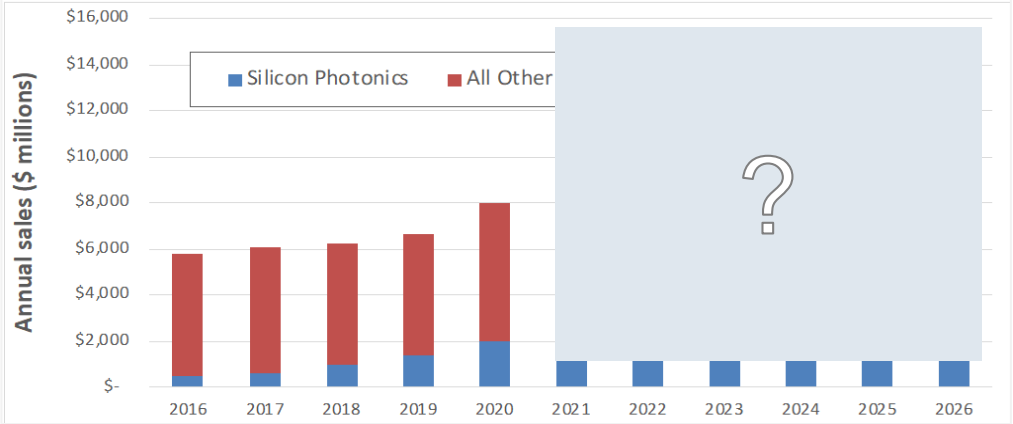
Increasing data rates required in mega-datacenters and DWDM networks have led to the development of more complex optical devices that combine multiple functions on the same chip. New technologies such as Silicon Photonics (SiP) hold promise for integration of optics and electronics. This report includes analysis of the market data from 2010-2021 and provides forecasts for shipments of integrated optical devices based on InP, GaAs and SiP technologies in 2022-2027.



The report also discusses the adoption of optics co-packaged with switching ASICs, FPGAs, CPUs and GPUs for applications in datacenters, AI Clusters and High-Performance Computers (HPCs).



Source: Cisco/Luxtera (with text by LightCounting)



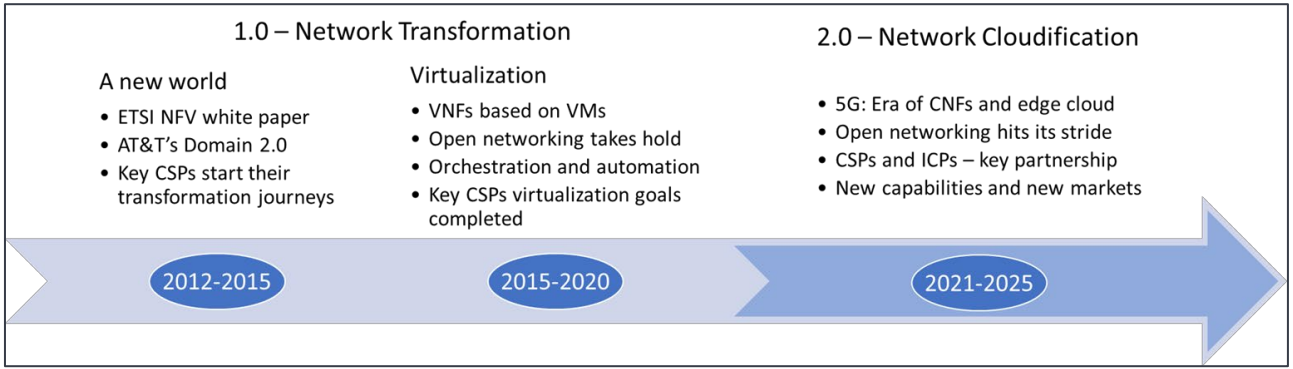
Telecom Network Transformation

FREQUENCY: ANNUAL ● DATE: JUNE

Optical networks run by the communications service providers are changing with the advent of 5G wireless networks, the emergence of mega data centers and global networks run by cloud companies. This report looks at the evolution of optical networking infrastructure in terms of architecture, network automation and the use of open networking hardware and software.

COMPANIES PROFILED

AT&T, BT Group, China Mobile, China Telecom, China Unicom, Comcast, Deutsche Telekom, KDDI, NTT, Orange, Softbank, Telecom Italia, Telefonica, Vodafone, Verizon

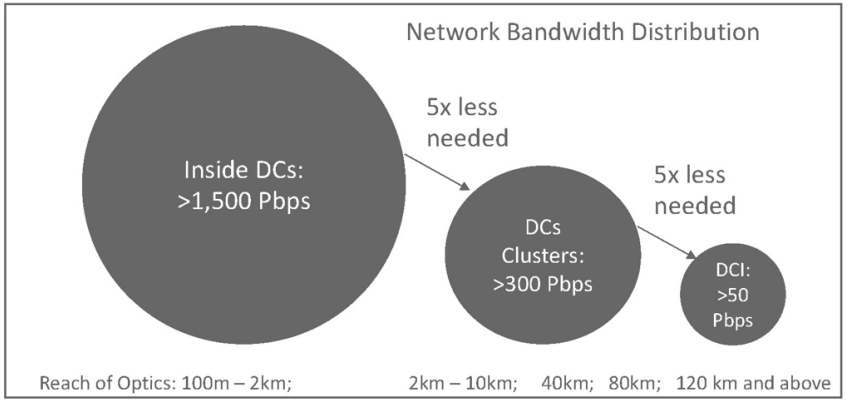


Mega Datacenter Optics

FREQUENCY: ANNUAL ● DATE: JULY

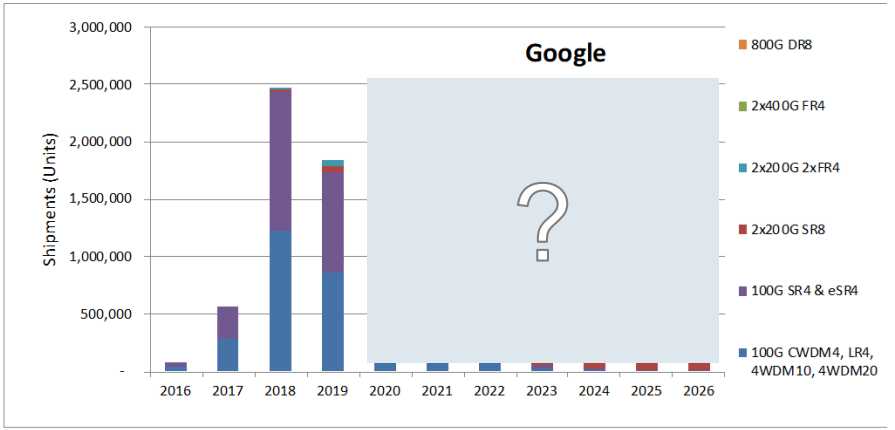
This report provides a detailed analysis of the demand for optical connectivity in datacenters and networks operated by Cloud companies. Analysis on technology transitions in servers, switches and DWDM transport equipment is correlated with projections for sales of next generation optical products. The report includes forecasts for DWDM optics, Ethernet transceivers and Active Optical Cables (AOCs), deployed by the Cloud companies, including our own models for each one of the TOP 5 consumers of optical transceivers: Alibaba, Amazon, Facebook, Google and Microsoft.

Bandwidth distribution in networks of Cloud companies



Source: LightCounting

Figure 6-3: LightCounting forecast for Google's transceiver purchases

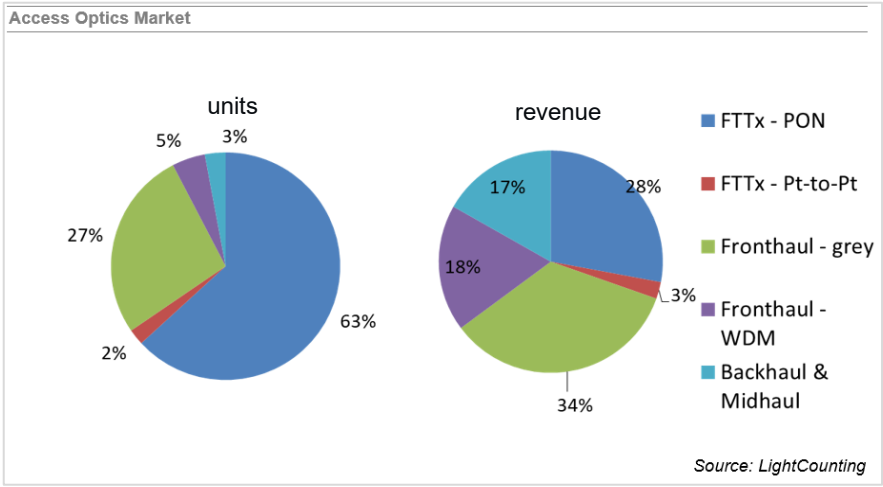


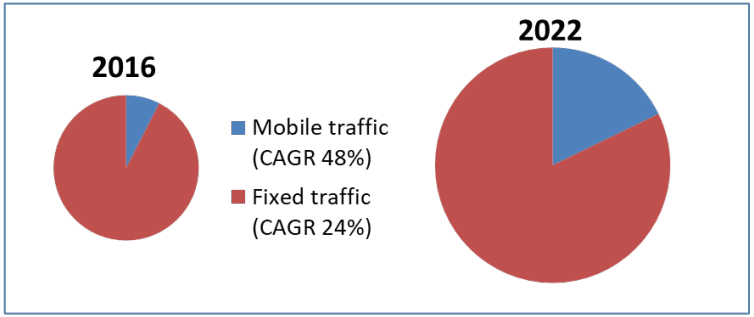
Source: LightCounting estimates

Access Optics: FTTx and Wireless

FREQUENCY: ANNUAL ● DATE: NOVEMBER

This report covers current and future network access architectures, service provider deployment strategies, industry trends, component requirements, and products. Tutorials on mobile fronthaul, FTTx, and cable TV networks are included as well. A detailed Excel spreadsheet accompanies the report, providing 5-year forecasts of wireless and FTTx optics shipments, prices, and revenues, broken down by speed and reach.

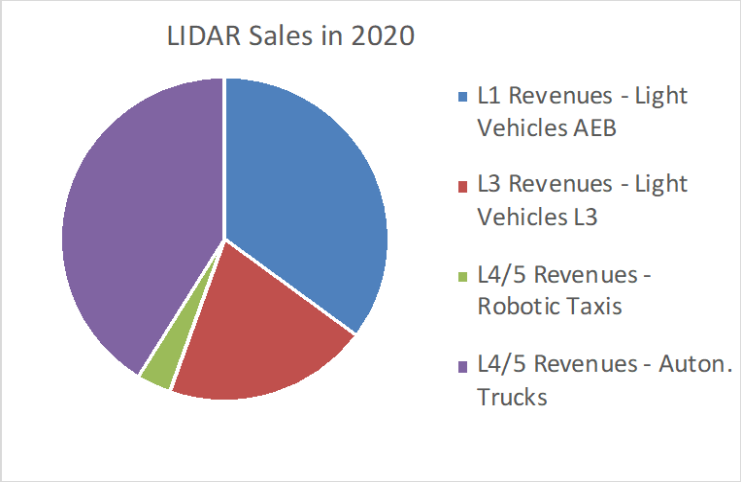




3D Sensors and LIDARs

FREQUENCY: ANNUAL ● DATE: NOVEMBER

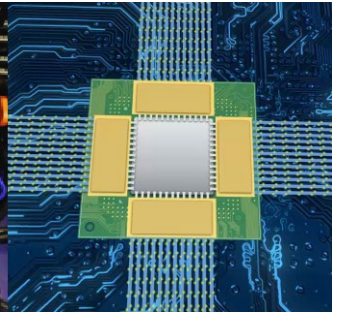
This report analyzes the new business opportunity for suppliers of optical components in the market for 3D depth sensors used in smartphones and lidars. It reviews different 3D sensing technologies, the VCSEL arrays, edge emitting lasers and detectors required to support them. The report includes historical data of shipments of these products for 2017-2021 and forecasts for 2022-2027. It offers an analysis of the leading vendors and discusses future developments in the supply chain.

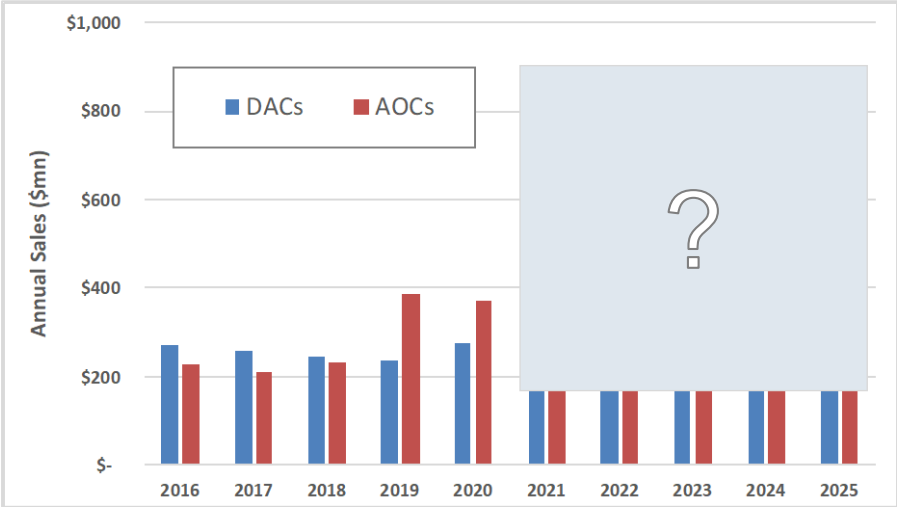


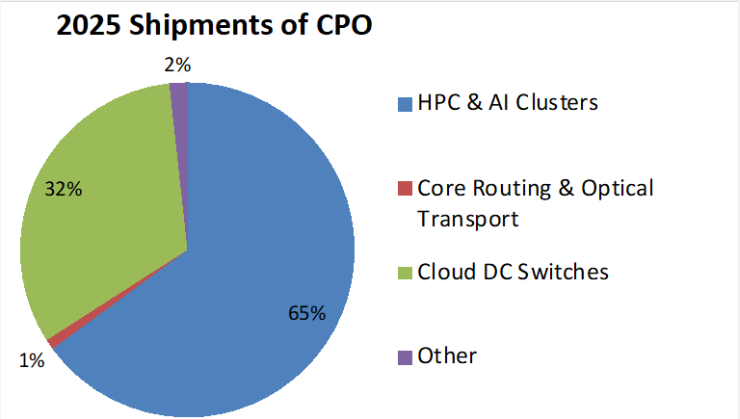
AOCs, DACs and Co-packaged Optics

FREQUENCY: ANNUAL ● DATE: DECEMBER

This report analyzes the adoption of high-speed copper and active optical cables as well as board mounted optics in data centers, AI clusters and high-performance computers. It also examines the business case and technical barriers for optical engines co-packaged with switching ASICs. The report includes a database with historical data of shipments, pricing, and sales of these products for 2016-2021 and forecasts for 2022-2027.







SUBSCRIPTION PACKAGES

LightCounting offers six subscription packages:
Platinum Plus, Platinum, Gold Plus, Gold, Silver and Bronze

Make headway — receive LightTrends Newsletter

The 2022 publication calendar includes 9 annual reports, 6 semi-annual reports, and 4 quarterly market updates. In addition to these reports, subscribers also receive bonus material, including previews of the quarterly and semi-annual forecasts (at least two weeks ahead of the publication date), unlimited analyst inquiries (access to analysts for further information, discussion and insights), and at least 12 research notes for publication during the calendar year.

Publication of each report is followed by a live webinar discussing highlights and answering questions from clients.

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LIGHTCOUNTING

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

Eighteen 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.