



光環科技股份有限公司
TrueLight Corporation

TrueLight Corporation

(3234)

2024/12/9

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1. Company Profile and Company Position
2. 2024 Q1~Q3 Operating Results
3. Market Trends and Operational Outlook
4. Summary
5. Q&A

➤ **Company Profile and Company Position**

TrueLight Corp.

- Founded in 1997, as the first VCSEL company in Taiwan
- Located in Hsinchu Science Park, Taiwan
- Number of employees: 314 (Dec/2024)

Stock Capital

- NT\$ 1.11B
- Stock Listed in OTC Market (#3234-TW) since 2011

Manufacturing Facility

- EPI Foundry
- Wafer Fab and Die Fab
- TO, OSA and COB assembly

Major Product & Service

- PIN(TIA), APD(TIA), VCSEL and FP/DFB laser
- VCSEL for consumer application
- Wafer foundry for SiPh/Lidar
- GaN wafer for power devices



Supplier Chain (Optical communication 、Sensing 、Power device application)

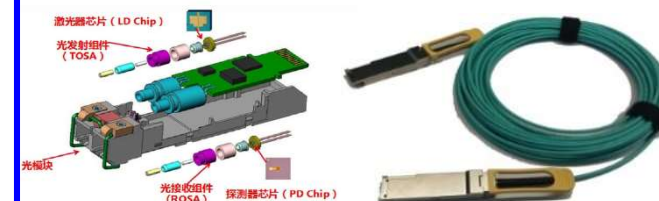
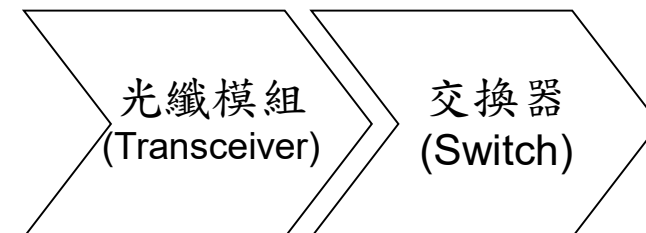
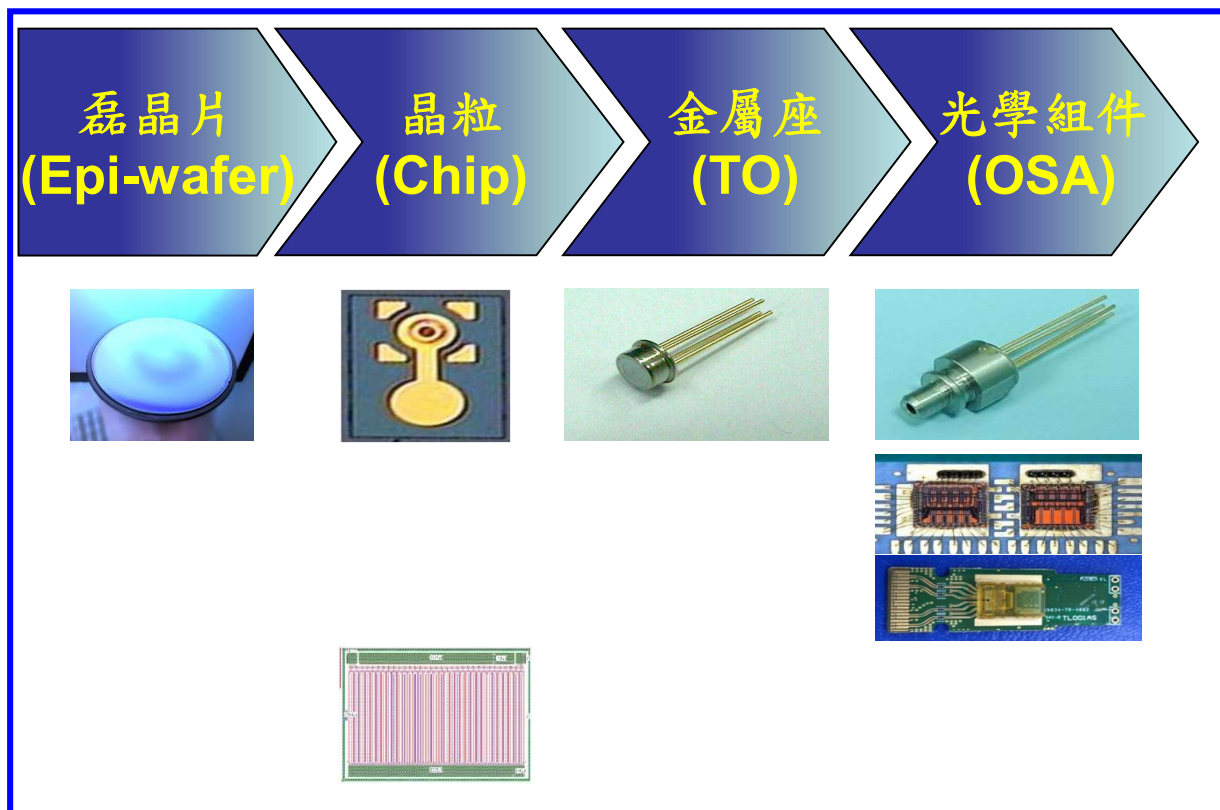


图1 光模块结构示意图 (SFP+封装)



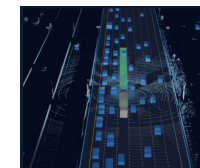
Optical Sensing



Datacenter

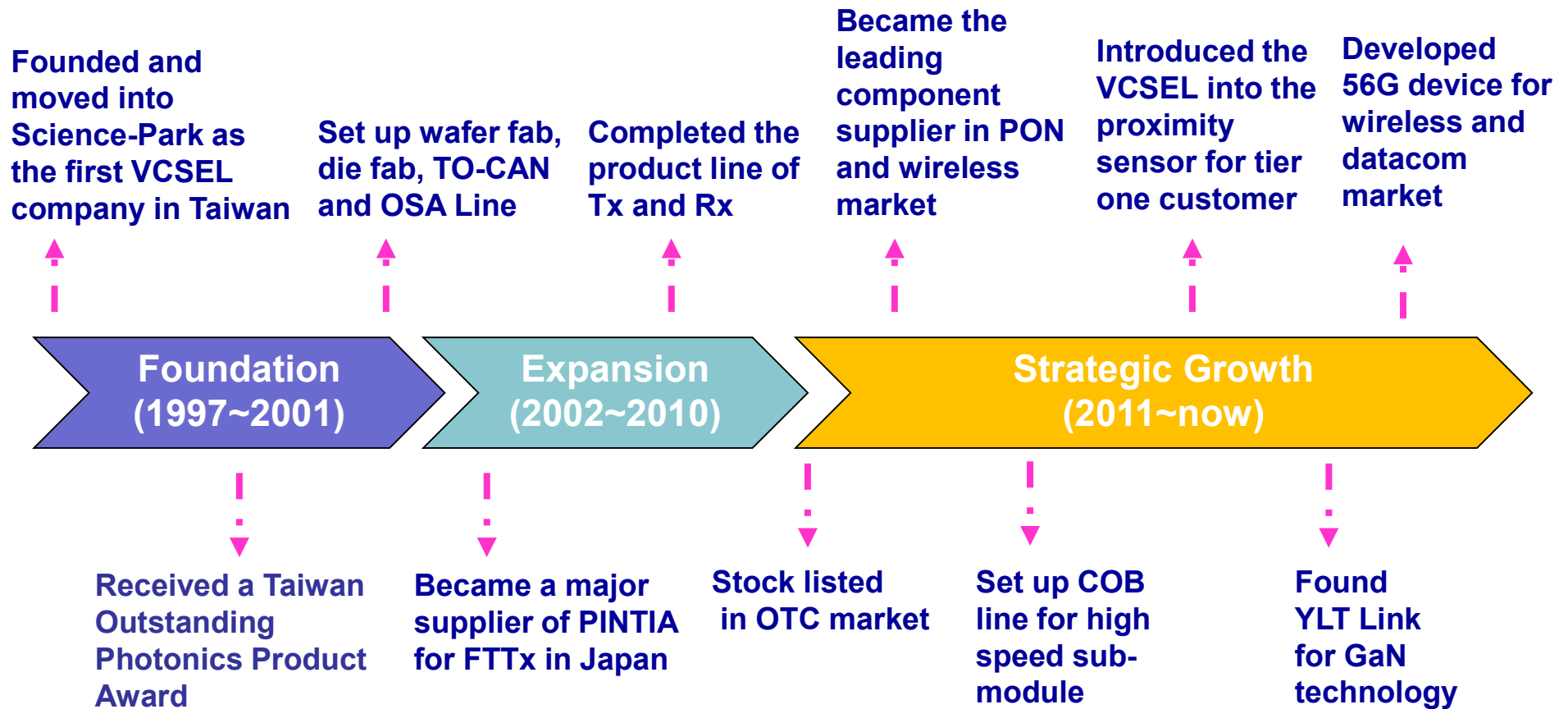


FTTX, 4G/5G Mobile
BS interconnection



Lidar

component supplier



- TrueLight, one of the few suppliers of optical active components in Taiwan, it has a complete production line and products, more than 20 years of mass production experience. In addition to accelerating product development, it also provides OEM/OMD or foundry services to enhance competitiveness.



Products Portfolios



- Research and Developing III-V Compound Optoelectronic Semiconductor and Optic Technology
- Providing Chip-TO-OSA(M)-COB Active Components Products
- III-V Compound Semiconductor Wafer Process Foundry Service



Telecom

- 4G/5G Mobile BS interconnection
- FTTX PON



	Products	Wavelength (nm)	Speed (Gbps)
Tx	VCSEL (Fiber Optics)	850	1-25
	FP-LD	1310-1550	1-25
	DFB-LD	1270-1550, 6λ-CWDM	2.5-25
Rx	PINTIA	850	1-25
	PINTIA	1270-1550	1-25
	APD	1270-1550	2.5-25



Datacom

- Datacenter
- COB



Speed / Module	Sub-module	Products	Description
25G	Chip on Board/ Active Optical Cable (VCSEL)	850nm Serial	25G SFP28 OE module & AOC
100G		850nm Parallel	100G QSFP28 OE module & AOC
200G 400G		850nm Parallel	200G QSFP56 400G QSFP56 DD OE module & AOC

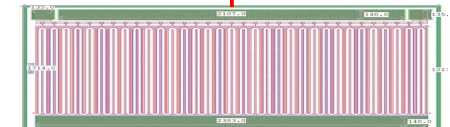


Consumer

- Smart Phone Sensing
- Mobile Devices Sensing



Classification	Wavelength	Applications
3mW-10mW	850nm (VCSEL)	Proximity Sensor
0.5-4W		Flood/Dot Projector/TOF
3mW-10mW	940nm (VCSEL)	Proximity Sensor
0.5-4W		Flood/Dot Projector/TOF



Wafer Process Foundry

- SiPh
- Lidar
- Datacenter



Material	Applications
InP	SiPh
	Lidar
GaAs	Datacenter

➤ 2024 Q1~Q3 Operating Results

資產負債表 CONSOLIDATED BALANCE SHEET

NT\$ K	3Q 24		3Q 23	
	Amount	%	Amount	%
現金及約當現金 Cash and cash equivalents	394,651	29	186,416	13
應收帳款 Accounts receivable, net	80,255	6	104,229	8
存貨 Inventories, net	247,431	18	387,730	28
不動產廠房及設備 Property, plant and equipment	402,151	29	504,605	36
使用權資產 Right-of-use assets	107,509	8	115,776	8
資產總計 Total assets	1,368,262	100	1,391,707	100
流動負債 Total current liabilities	209,315	15	254,456	18
長期借款 Long-term loans	92,121	7	134,667	10
租賃資產-非流動 Non-current lease liabilities	104,085	8	110,311	8
負債總計 Total liabilities	405,634	30	499,547	36
權益總計 Total equity	962,628	70	892,160	64



Consolidated Statements of Comprehensive Income

合併綜合損益表

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

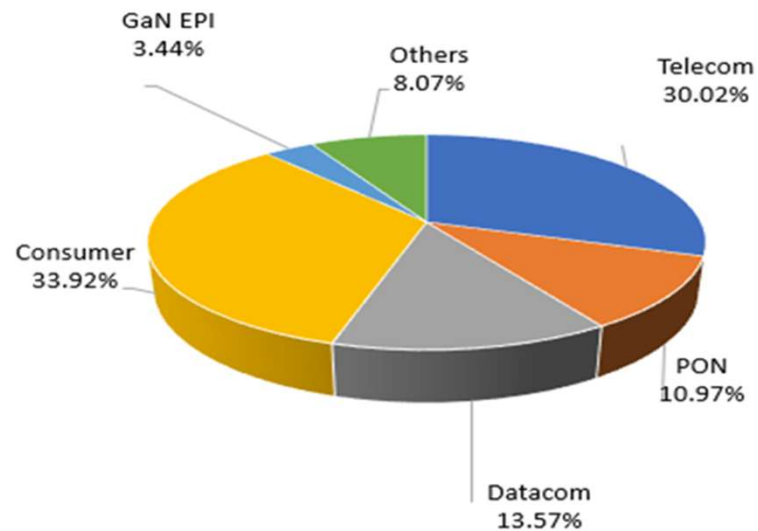
NT\$ K	Q1-Q3 24	Q1-Q3 23	YoY	
			Amount	%
營業收入 Operating revenue	426,461	452,262	- 25,801	-6%
營業成本 Operating cost	- 414,468	- 419,715	5,247	-1%
營業毛利 Gross profit from operation, netOperating expenses	11,993	32,547	- 20,554	-63%
毛利率(GP%)	2.81%	7.20%		-4.4%
營業費用 Total operating expenses	- 220,540	- 268,732	48,192	-18%
營業(損)益 Net operating loss	- 208,547	- 236,185	27,638	-12%
應業外收入(支出) Total non-operating income and expenses	5,184	- 1,993	7,177	-360%
稅前淨損 Loss before income tax	- 203,363	- 238,178	34,815	-15%
本期淨損 Loss for the year	- 203,363	- 240,875	37,512	-16%
EPS(NT\$)	- 1.78	- 2.72	0.94	

113年第三季加權流通在外股數為1億1仟1佰萬股

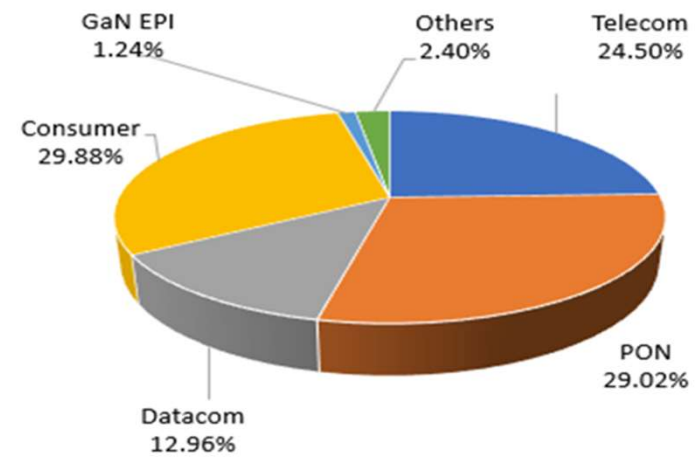
Weighted average outstanding shares were 111 million unit on 3Q'24

TrueLight Sales Analysis: Application Market

113年 1-9月



112年 1-9月

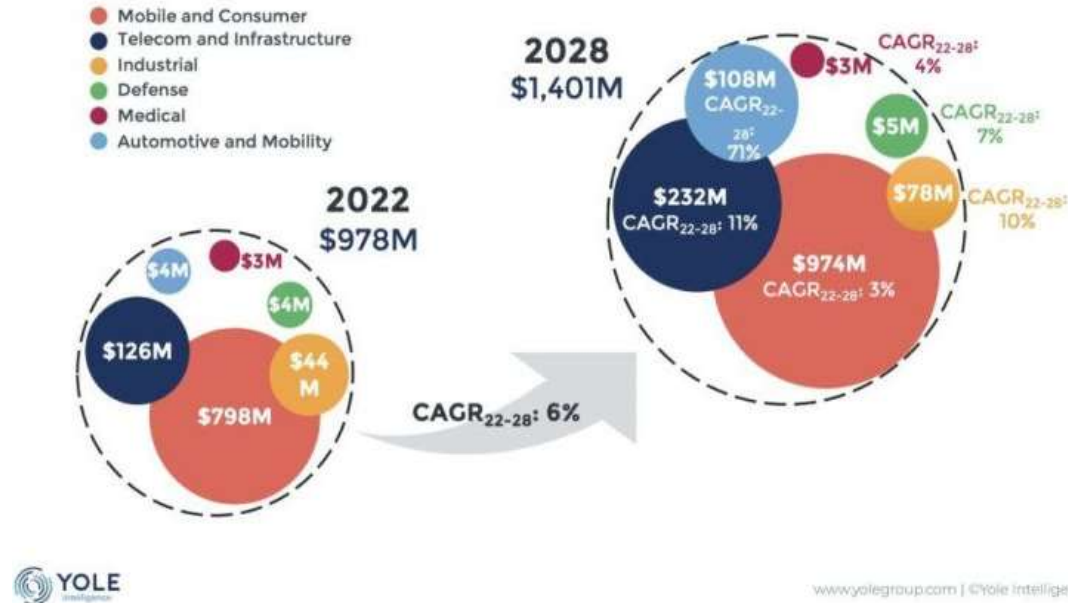


➤ Market Trends and Operational Outlook

- VCSEL market growth rate ~ 6%
- Mobile/consumer and Telecom/Infrastructure are the major market, Automotive/Mobility is expected to grow at a CAGR of 71% from 2022 to 2028
- TrueLight VCSEL is already an important supplier in the consumer/mobile phone and telecommunications/infrastructure fields. We are co-work with customers to introduce our product into the automotive mobile market application.

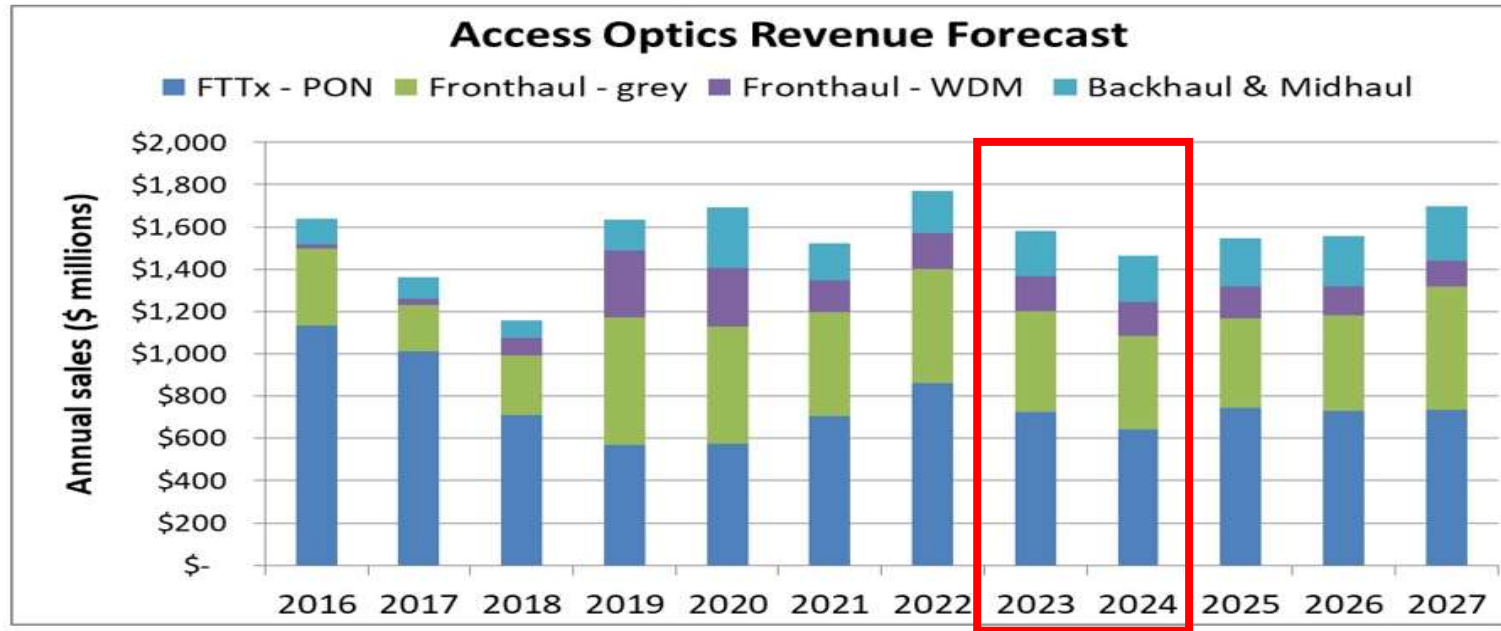
2022-2028 VCSEL MARKET FORECAST

Source: VCSEL report, Yole Intelligence, 2023



www.yolegroup.com | ©Yole Intelligence

Source: Yole Report



Source: LightCounting

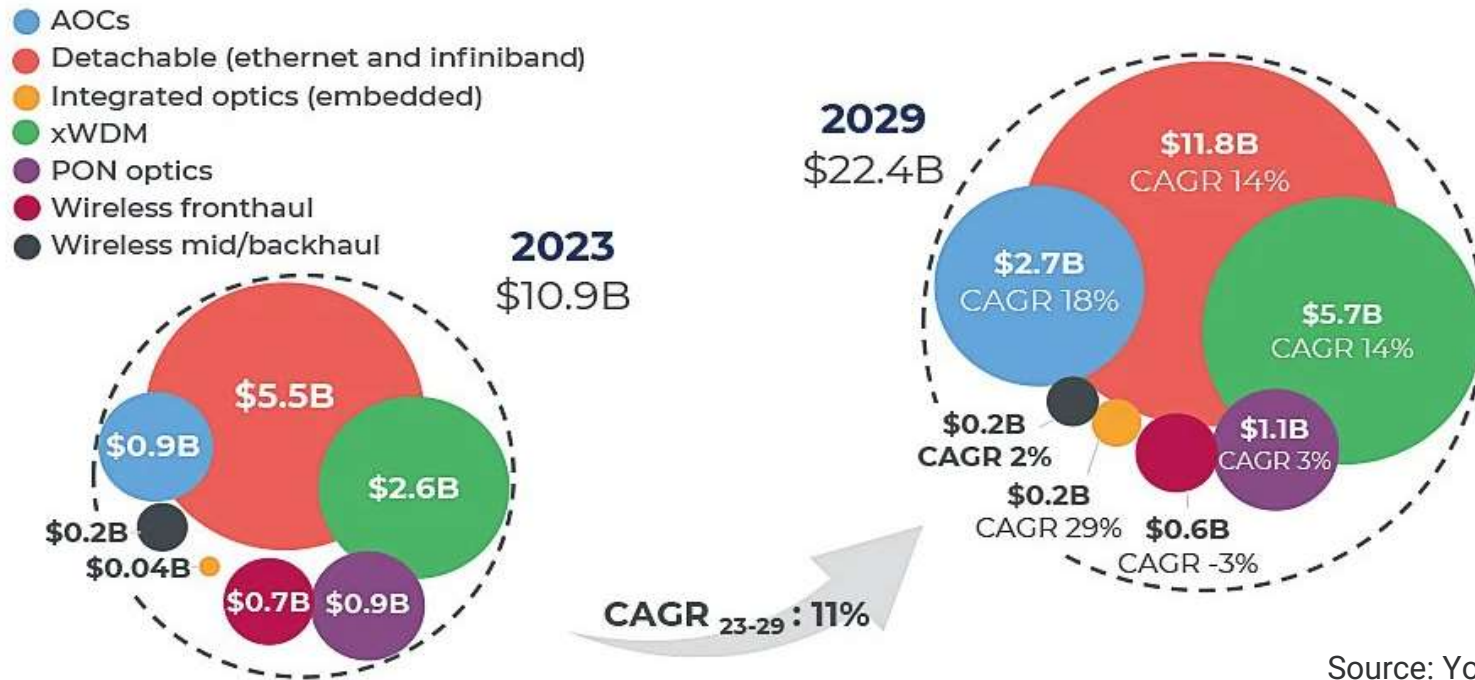
- Optical communication access network: including FTTx-PON, transmission between 4G/5G telecommunications base stations
- Access Network is a part of infrastructure and is greatly affected by economic and political aspects. In the past two years, the unstable political and economic situation has affected government investment policies and reduced overall market demand.
- Professional institutions indicate that a slight recovery is expected after 2025. However, due to price-cutting competition in China and the impact of the international situation, we continue to maintain a cautious response strategy to this market.

TrueLight Market Trends-Optical Transceivers

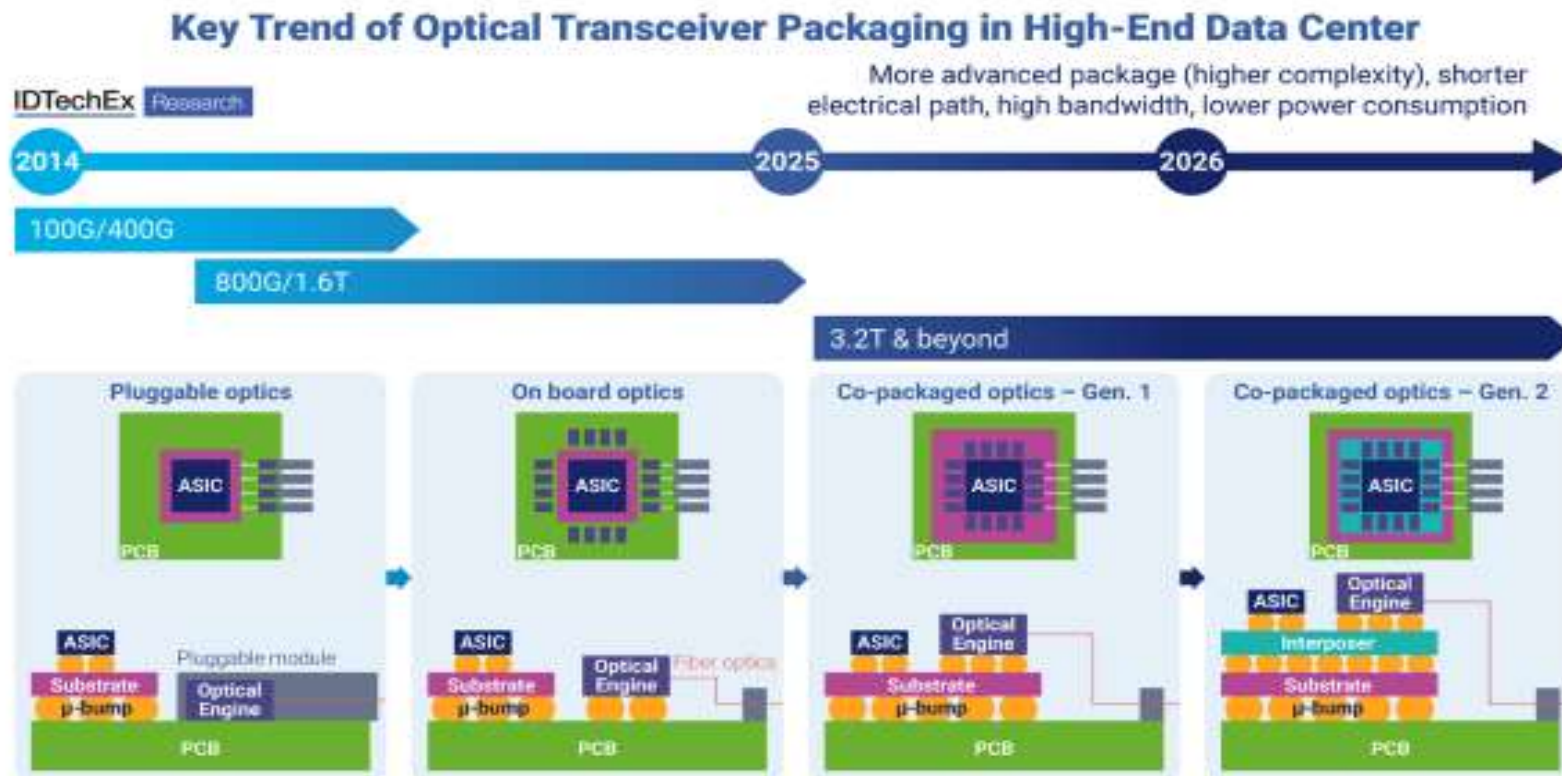
- In the past, PON and Wireless were the TrueLight main products. According to Yole analysis report, the demand growth rate was slightly low.
- **In the future optical communication market, Datacom is expected to see the highest CAGR. By providing foundry service for datacom application, and adjusting product and customer strategies, Datacom sales are steadily increasing.**

2023-2029 optical transceiver revenue growth forecast by segment

(Source: Optical Transceivers for Datacom and Telecom 2024, Yole Intelligence, May 2024)



Key Trend of Optical Transceiver Packaging in High-End Data Center

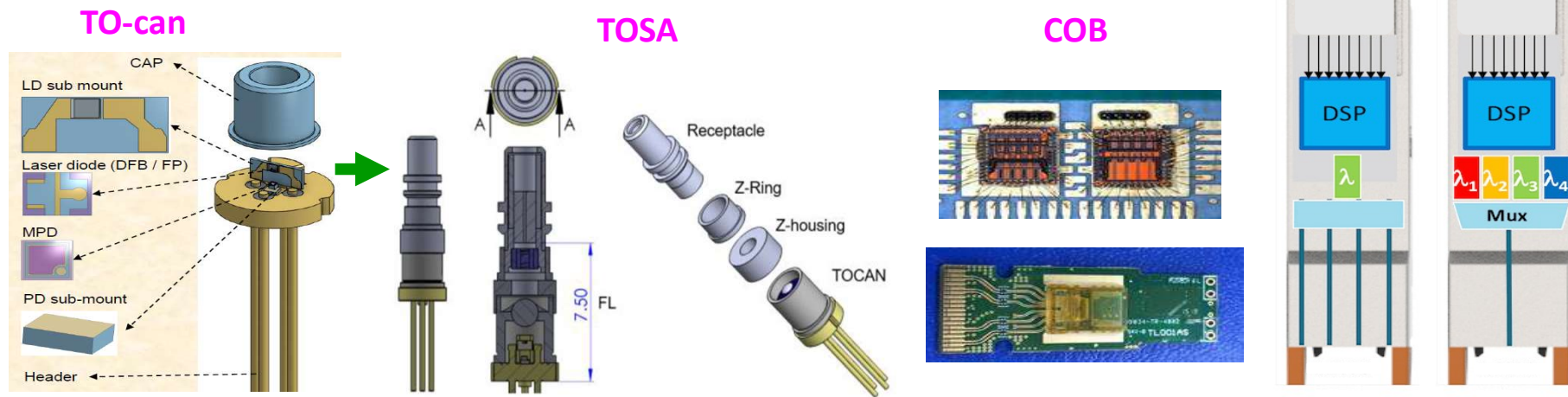


Package type Pluggable optics on board optics Co-packaged optics-Gen.1 Co-packaged optics-Gen.2

Transmission speed 400G → 800G → 1.6T Future 3.2T/6.4T

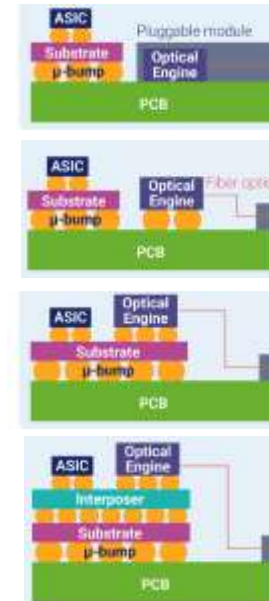
Source: IDTechEx Report

- **Chip Manufacturing :**
 - Provide High power CW DFB laser chip foundry service
 - Provide 100G VCSEL/ PD Array
- **Precision packaging manufacturing and testing :**
 - Provide high-precision light source packaging services: Metal- can 、 Chip on Submount (COC) 、 COB
 - Provide high-precision optical circuit packaging services : Light source to PIC or PIC to Connector by fiber array
- **Optical, mechanical, electrical, software and firmware integration technology (co-work with EIC/PIC company)**
 - Provide high-frequency circuit design and simulation, software firmware and GUI writing



- Provide service in different generations of packaging technologies :

Package Type	Laser source	Package & testing	software and firmware
Pluggable	V	V	V
OBO /NPO	V	V	V
CPO Gen-1	V		
CPO Gen-2	V		



Pluggable

OBO/NPO

(On Board Optics/ Near Package Optics)

CPO Gen-1

(Co-package Optics)

CPO Gen-2

(Co-package Optics)

Source: IDTechEx Report

- Currently Pluggable and OBO/NPO:

- TrueLight provide light source chip manufacturing, precision packaging manufacturing and testing, and optical, electromechanical, software and firmware integration technical services

- Future CPO :

- TrueLight provide high power CW DFB Laser manufacturing service.
- TrueLight provide low power 100G VCSEL for short distance application.

TrueLight has independently developed technology and sufficient quality and quantity of production capacity in the supplier chain, providing high-quality and competitive products for Telecom and PON market. TrueLight also provides products in market segments with significant growth. Provide more diversified services to increase sales proportion and lead the company to continue to grow.

➤ **Datacenter :**

- Provide High power CW DFB laser chip foundry service
- Provide 100G VCSEL/ PD Array or COB module for short distance application
- Precision packaging manufacturing and testing service. Optical, mechanical, electrical, software and firmware integration technology

➤ **Consumer VCSEL:**

- Cooperate with customers to develop the new generation of light sources for mobile phone sensing
- Developing optoelectronic products with different wavelengths for medical care and biological monitoring

Q&A

Thank you