



MATERIALS THAT MATTER™

# INVESTOR DAY

November 8<sup>th</sup>, 2017



# Agenda

# INVESTOR DAY

November 8<sup>th</sup>, 2017

## Welcome

Mark Lourie, Director of Corporate Communications

## Introduction

Fran Kramer, Chairman of the Board

## Strategic Overview

Dr. Chuck Mattera, President & Chief Executive Officer

## Innovation

Dr. Giovanni Barbarossa, Chief Technology Officer and President, Laser Solutions Segment

## Financial Outlook

Mary Jane Raymond, Chief Financial Officer



# Safe Harbor Statement

Matters discussed in this presentation may contain forward-looking statements that are subject to risks and uncertainties. These risks and uncertainties could cause the forward-looking statements and II-VI Incorporated's (the "Company's") actual results to differ materially. In evaluating these forward-looking statements, you should specifically consider the "Risk Factors" in the Company's most recent Form 10-K and Form 10-Q. Forward-looking statements are only estimates and actual events or results may differ materially. II-VI Incorporated disclaims any obligation to update information contained in any forward-looking statement. This presentation contains certain non-GAAP financial measures. Reconciliations of non-GAAP financial measures to their most comparable GAAP financial measures are presented at the end of this presentation.



## Introduction Fran Kramer, Chairman of the Board

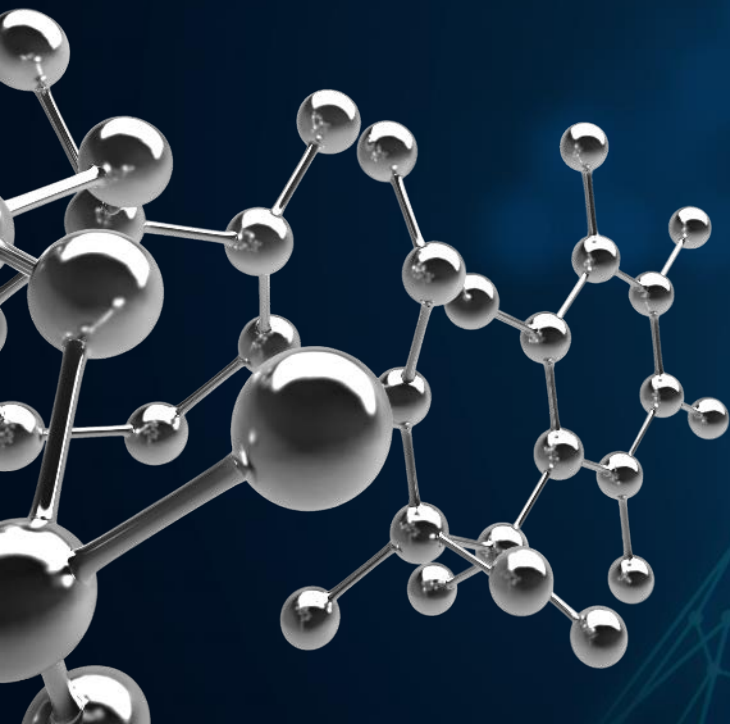


# Origins of Our Company Name

**II-VI**

**“TWO SIX”**

Refers to groups II and VI of the Periodic Table of Elements.



**S**

Sulfur

**Zn**

Zinc

**Se**

Selenium

**Cd**

Cadmium

**Te**

Tellurium

Since 1971

INVESTOR DAY

November 8<sup>th</sup>, 2017

1971

We Started In Saxonburg, PA



1987

IPO

2017

30th Anniversary since the IPO



Francis J. Kramer(Left) and  
Dr. Carl J. Johnson(Right)



Saxonburg Campus  
in 1997



# II-VI Worldwide Values



## **Strategic Overview**

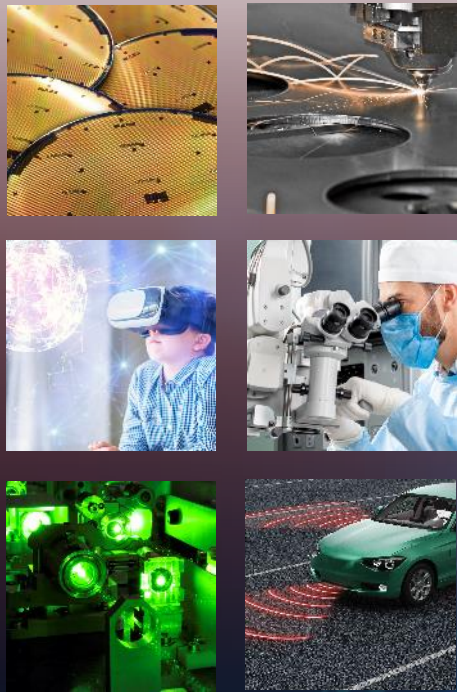
Dr. Chuck Mattera, President & Chief Executive Officer



# Our Company Structure



## Laser Solutions



## Photonics



## Performance Products



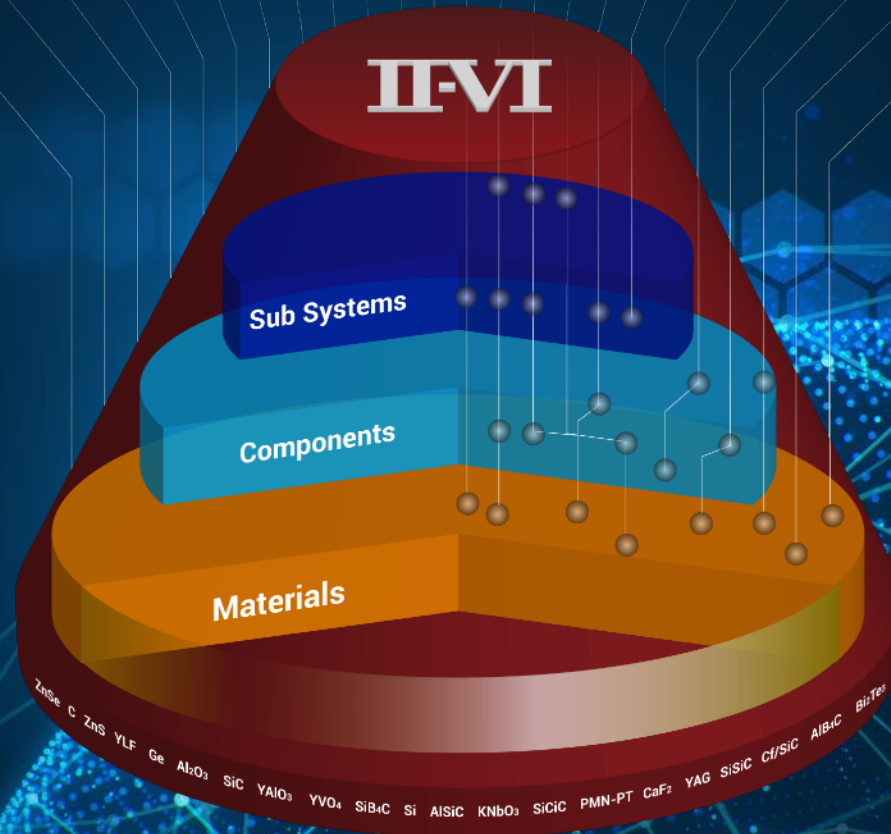
# Vertically Integrated Manufacturing Platforms

Industrial Materials Processing

Optical & Wireless Communications

Advanced Materials & Military

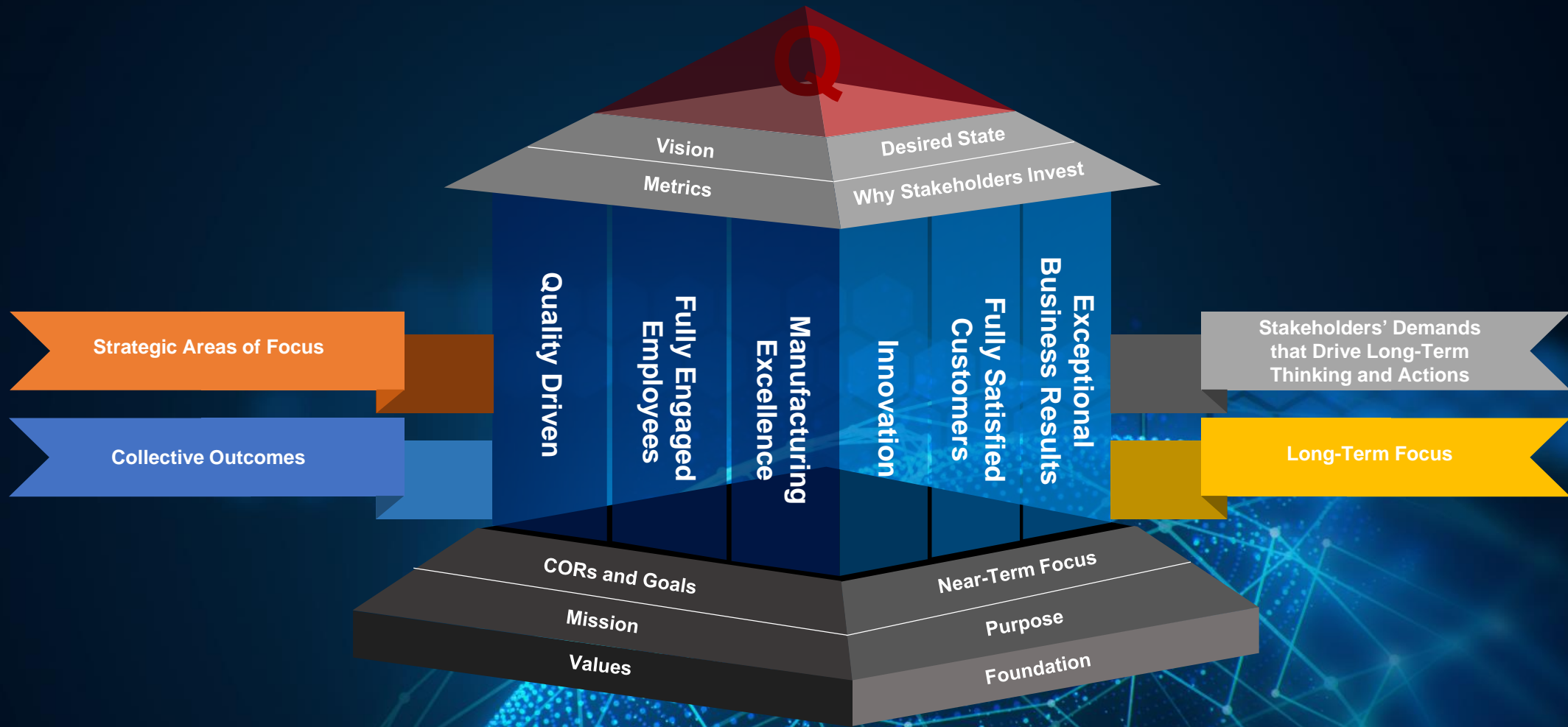
3D Sensing & IoT Emerging Technologies



# Our Footprint



# Our Strategic House

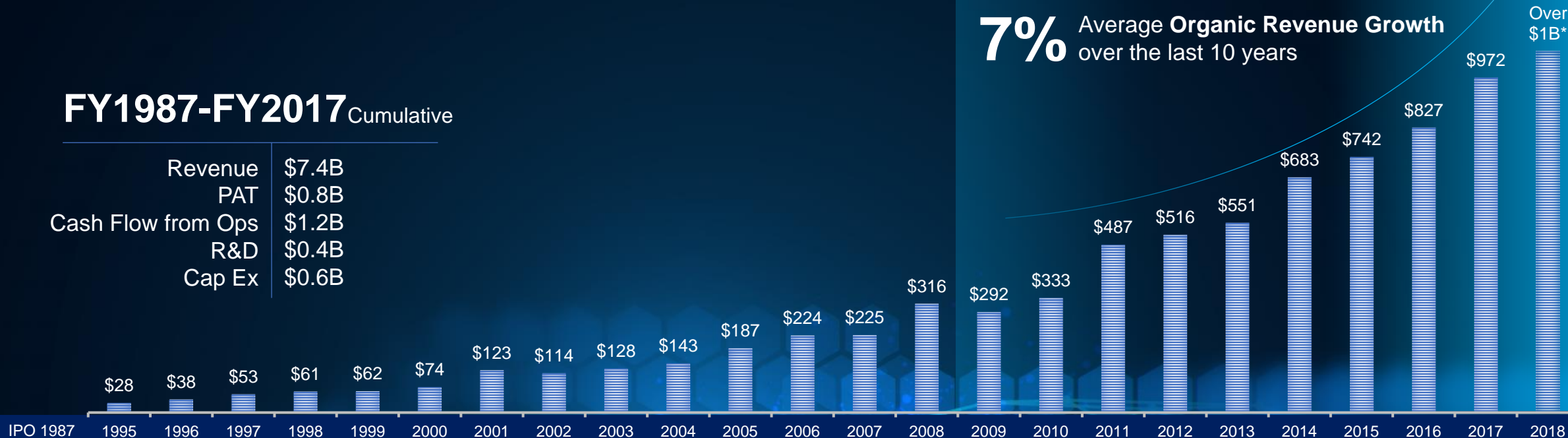


# Over 4 Decades of Continuous Growth

**7%** Average Organic Revenue Growth over the last 10 years

## FY1987-FY2017 Cumulative

Revenue	\$7.4B
PAT	\$0.8B
Cash Flow from Ops	\$1.2B
R&D	\$0.4B
Cap Ex	\$0.6B



## Acquisition History



**Micro-optics**  
Vergo Optics

**Micro-optics**  
Lighting Optical

**ZnSe Growth**  
Laser Power Corp

**Silicon Carbide**  
Litton SIC Group

**UV Filters**  
Laser Power Corp

**Thermo-electric Coolers**  
Marlow Industries

**Selenium Refinery**  
Pacific Rare Metals

**Laser Processing Heads**  
Highyag

**Micro-optics**  
Photop Technologies

**Conformal Patterning**  
Max Levy Autograph

**Optical Channel Monitors**  
Aegis Lightwave

**Metal Matrix Components**  
M Cubed Technologies

**Semiconductor Lasers**  
Oclaro Semiconductor Laser

**Optical Amplifiers**  
Oclaro Optical Amplifier

**Epiwafer Foundry**  
Epiworks

**Military & Aerospace Optical Systems**  
LightWorks Optics

**Advanced Coatings**  
Oclaro Optical Coatings

**Compound Semi. Wafer Fab**  
Kaiaam Laser Limited(U.K. Fab)

**Faraday Rotator**  
Integrated Photonics

**Direct Diode High Power Lasers**  
Direct Diode

**GaAs Wafer Fab**  
Anadigics

# Diversified Customer Base Across 7 End Markets

Serving Over **1000** Customers

The image displays a honeycomb grid of 48 hexagons. Seven hexagons are highlighted with a blue border and contain images representing end markets: Communications (server racks), Automotive (car assembly), Consumer Electronics (headphones), Materials Processing (factory floor), Military (jet aircraft), Semiconductor Equipment (microchip), and Life Science (DNA helix). The remaining 41 hexagons contain logos of various companies, including laserline, CORNING, SUMITOMO ELECTRIC, Aurubis, Ford, FUJITSU, IQE, ST, COHERENT, CISCO, TRUMPF, SPI Lasers, Infineon, BECKMAN COULTER, Nikon, Bystronic, ASML, KLA Tencor, SHOWA DENKO, ZEISS, HAN'S LASER, ACACIA, Complete GENOMICS, and Raycus.

*\*Sampling of representative customers based on approvals for public release*

# Megatrends



# SiC Substrates for Wireless Communications

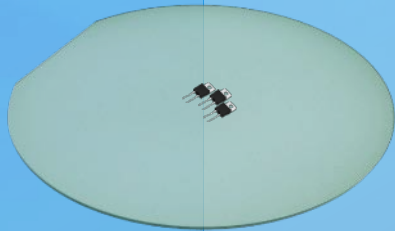
Share of the Projected Annual \$200 Billion Investment In 5G by Country Starting Around Year 2020

US	28%
China	23%
Japan	11%
Germany	4%
U.K.	3%

Source: Bloomberg Business Week



SiC for High Frequency GaN Electronics Market  
CAGR ('17-'22): +15%  
Source: Yole

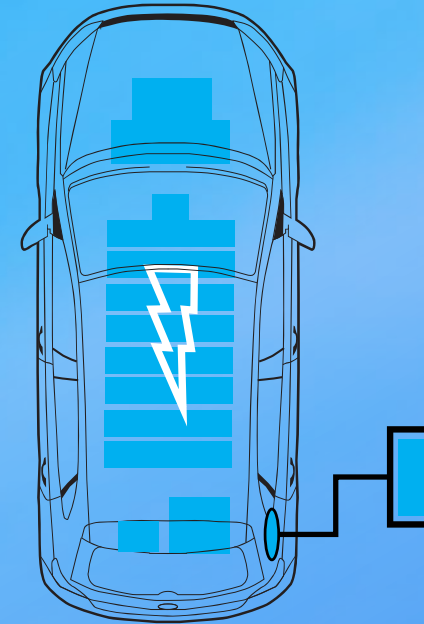




# SiC Substrates for Power Electronics

## Electric Car Announcements

GM	20 all electric cars by 2023
Ford	13 models by 2023
Toyota & Mazda	U.S.-based plant by 2021
Daimler /Mercedes-Benz	Electrify entire portfolio by 2022
Renault/Nissan/Mitsubishi	12 All-Electric cars by 2022
Jaguar Land Rover	Electrify (HEV/EV) all lineup by 2020
Volvo	Electrify entire line by 2019
VW/Audi/Porsche	300 EV/HEV by 2030

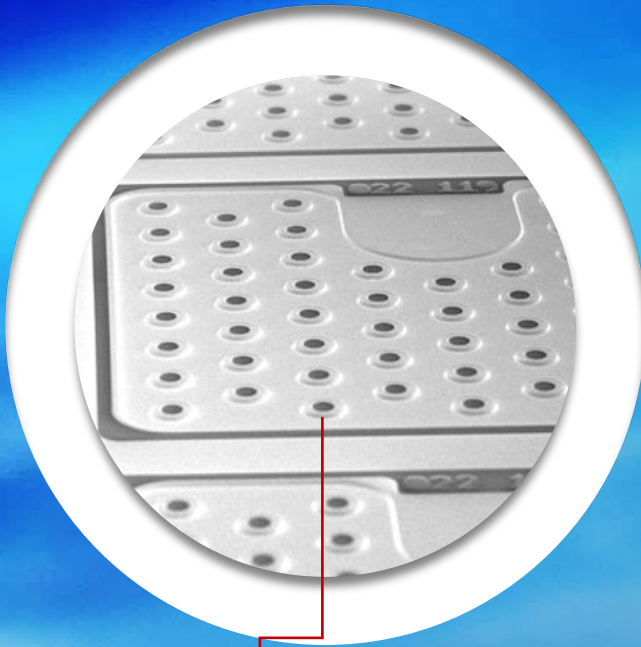


Source: Mashable

SiC for High Power Electronics Market  
CAGR ('17-'21): +23%  
Source: Yole

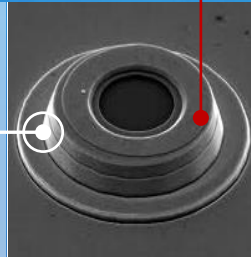
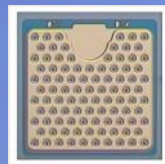
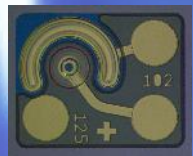


# Laser & Micro-optics for 3D Sensing

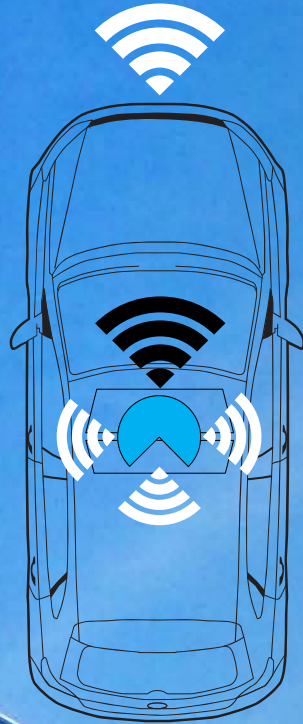


\* VCSEL: Vertical Cavity Surface Emitting Lasers

VCSEL Market CAGR ('15-'22): +19%  
Source: Markets & Markets



# Opto-Electronics for LiDAR

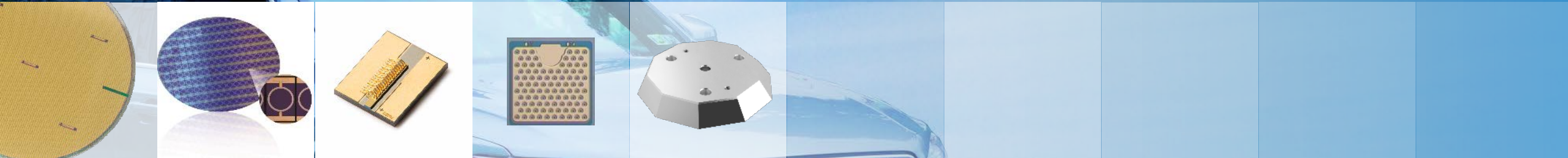


Self-driving car availability by car manufacturer

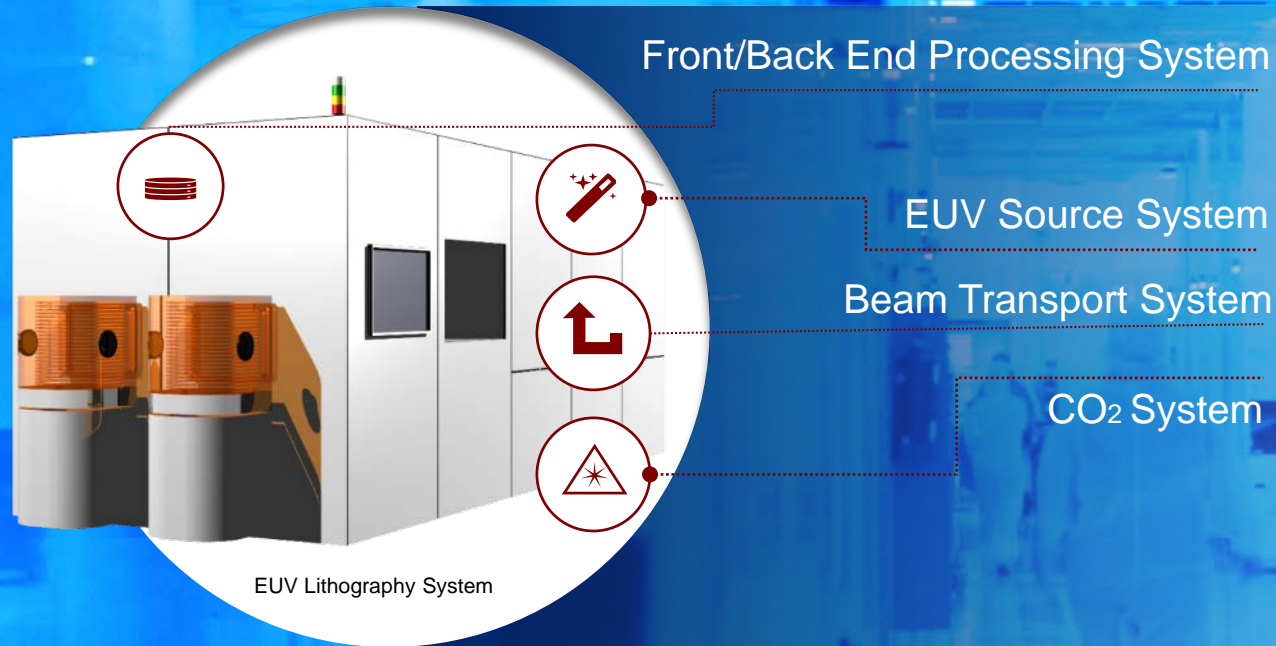
Tesla	2017	Volvo	2020
GM	2018	Daimler	2020
Hyundai	2020	BMW	2021
Renault-Nissan	2020	Ford	2021
Toyota	2020	Honda	2025

Source: AXIOS

Laser Diodes for LiDAR Market ('17-'22): +20%  
Source: Strategies Unlimited



# Laser Optics & Precision Ceramics for Extreme Ultraviolet (EUV) Lithography



EUV Lithography Systems Market  
CAGR ('16-'22): 9%  
Source: Allied Market Research



# Differentiated Product Portfolio for Industrial Lasers

Laser Remote Welding Head



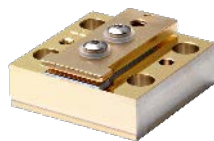
Direct Diode Laser Engine



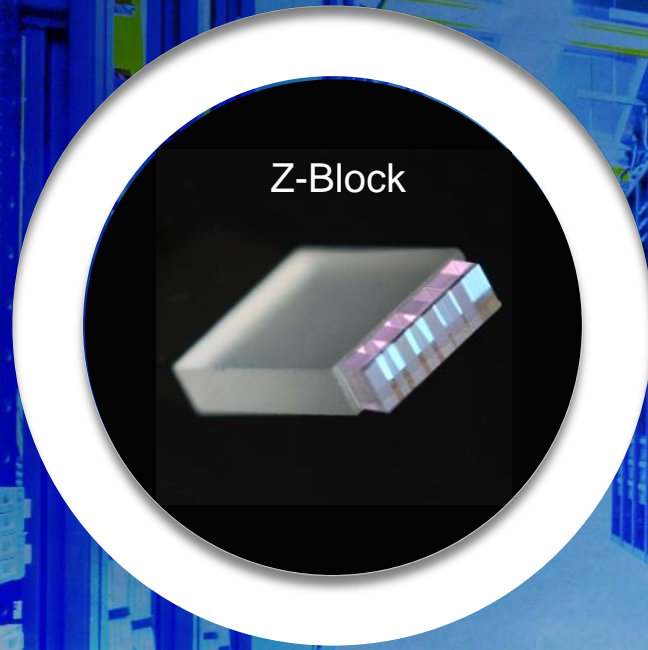
- Fiber Lasers
- Direct diode Lasers

Broad portfolio of components including: pump lasers, high power combiners, acousto-optic modulators, high power isolators, gratings and micro-optics.

Fiber Lasers Market CAGR ('17-'22): +8%  
Direct Diode Market CAGR ('17-'22): +7%  
Source: Strategies Unlimited



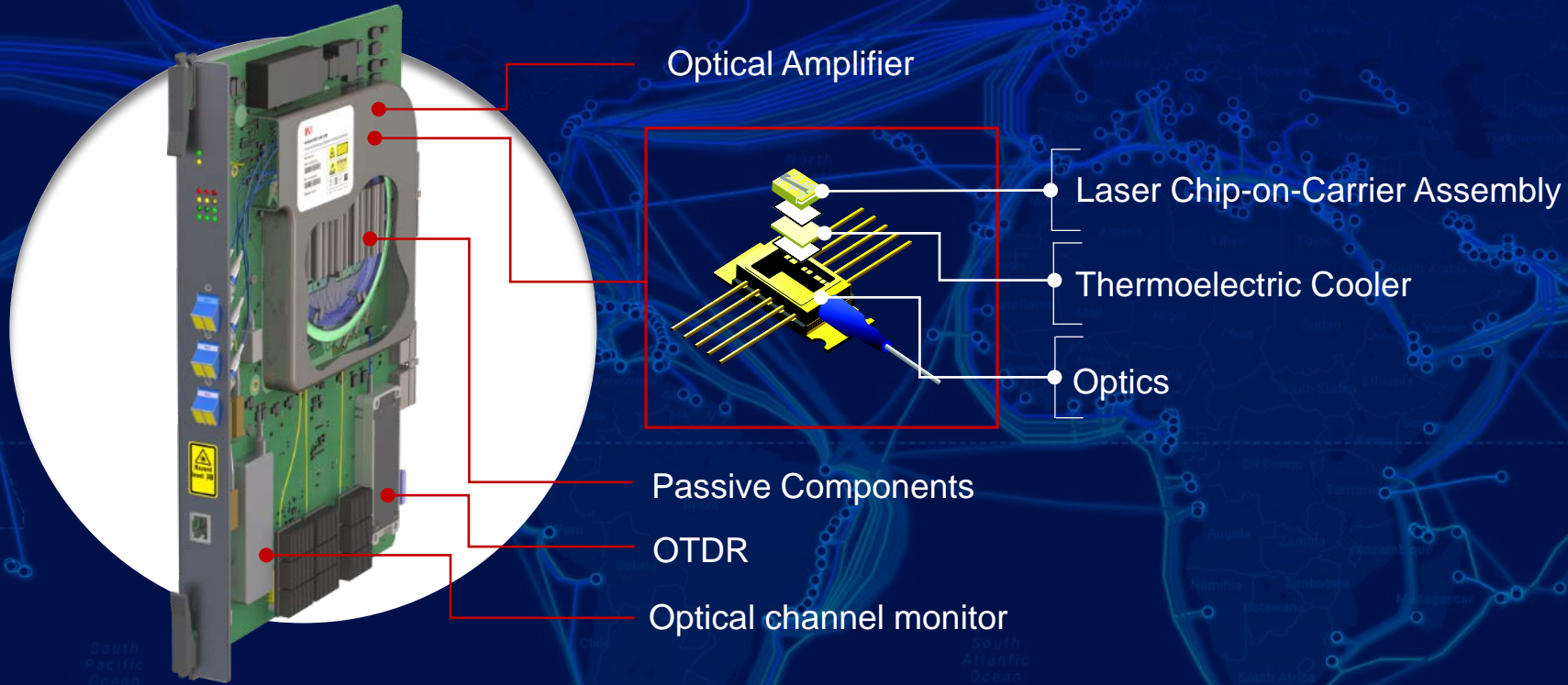
# Optics & Optoelectronics for Datacenters



Datacom Optical Components Market  
CAGR ('17-'22): +25%



# Leading Edge Subsystems for Intelligent Communications Networks

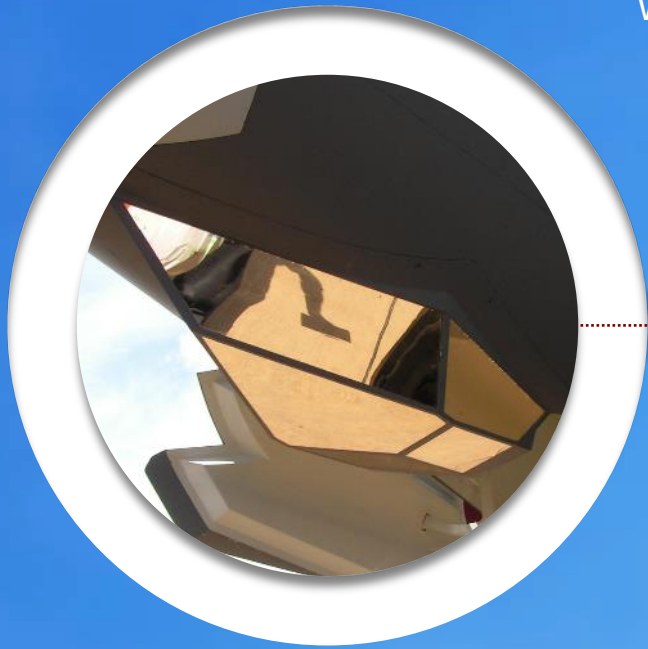


Optical Communications Market  
CAGR ('15-'21): +12%  
Source: Ovum



# Engineered Materials, High Energy Laser and Optics for Military & Aerospace

World leader in large sapphire panel output **24,000 sf** dedicated facility



F-35 Electro-Optical Targeting System (EOTS)



Infrared Countermeasure Systems Market  
CAGR ('17-'22): +8%  
Source: Strategies Unlimited

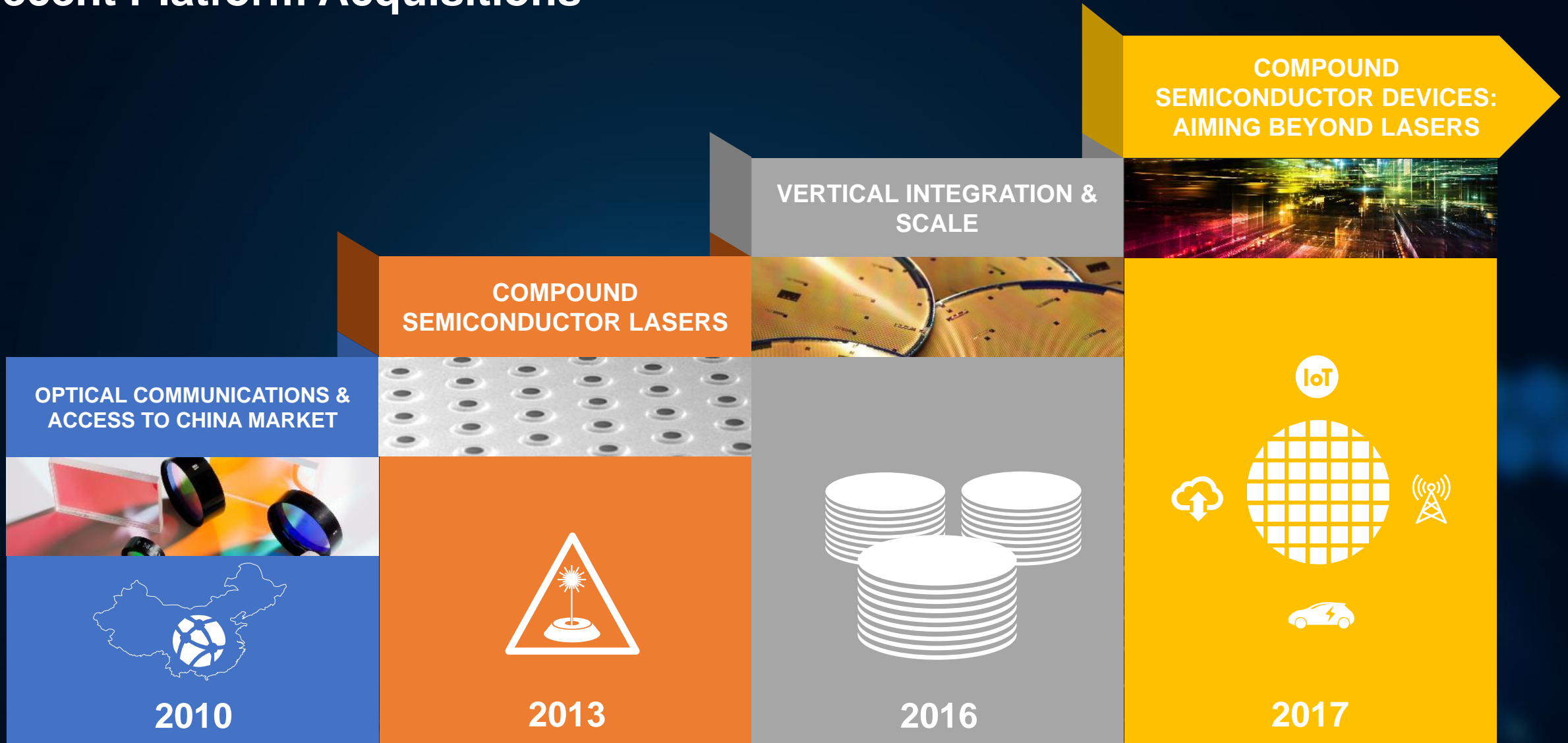




## **Strategy for Growth by Acquisition**

Dr. Chuck Mattera, President & Chief Executive Officer

# Recent Platform Acquisitions



# Optical Communications & Access to China Market



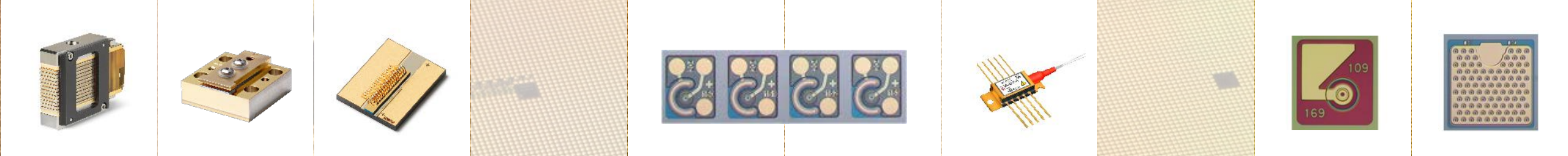
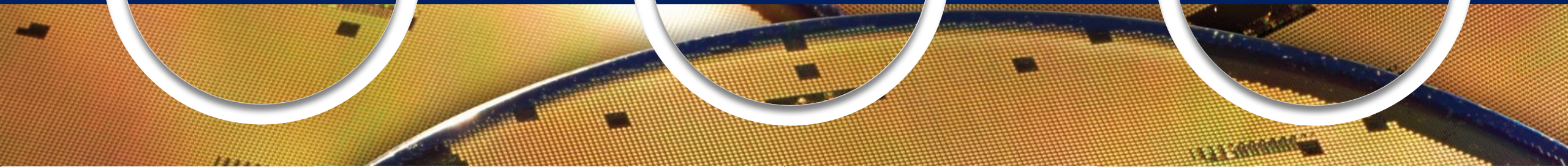
Jan. 2017: "China unveils \$170 billion telecoms investment"



Chinese government plans to lay 90,000km of fiber cables and deploy around two million 4G wireless base stations over the next three years

Source: Global Telecoms Business

# Compound Semiconductor Lasers



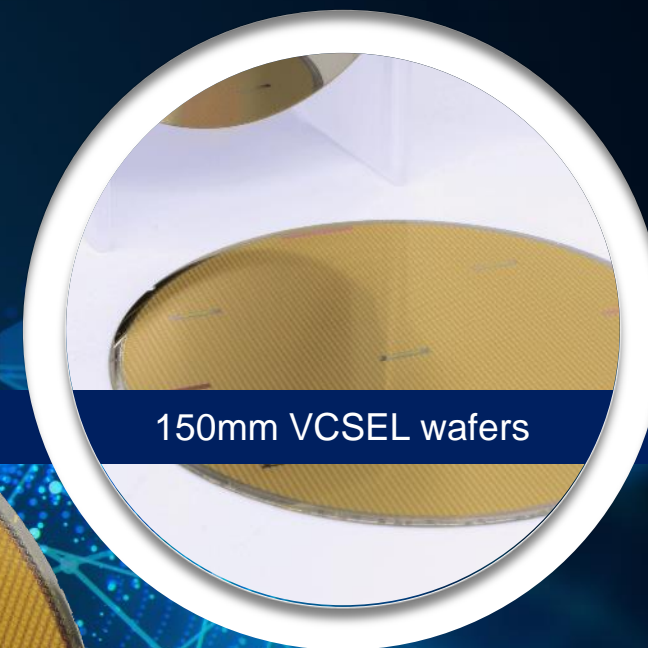
# Vertical Integration & Scale



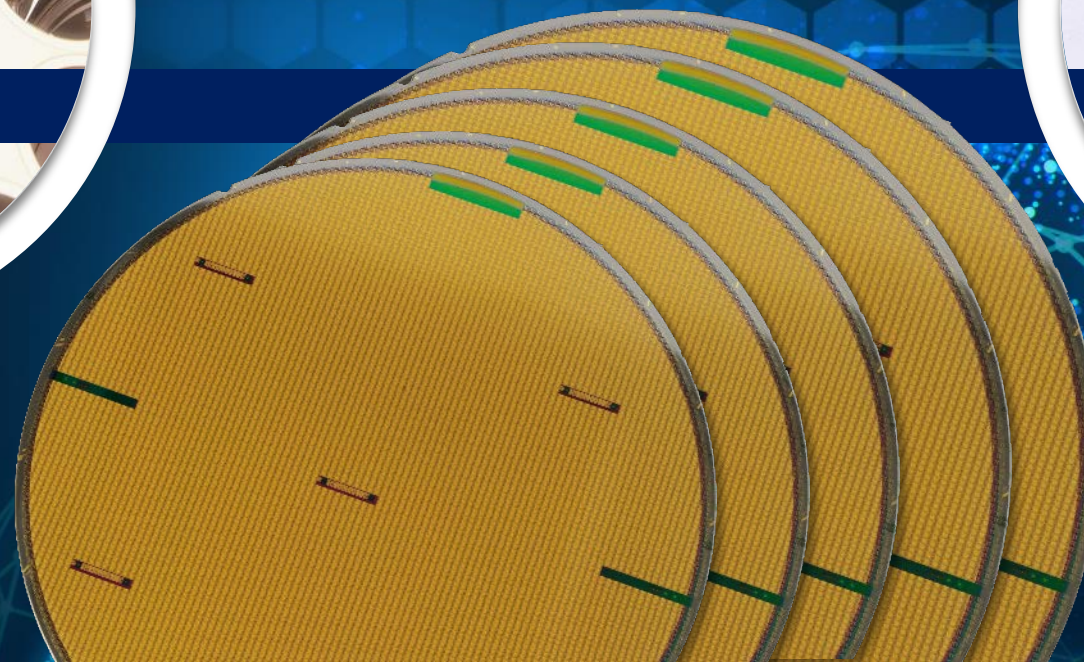
Scaling up to 6 Inch Wafers



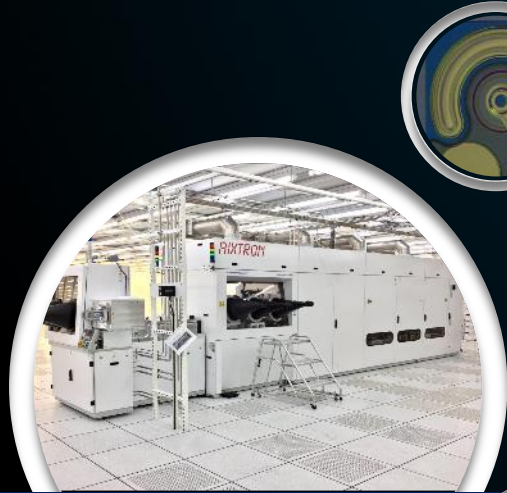
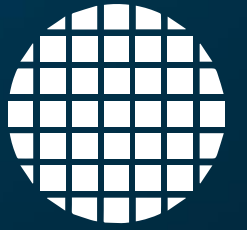
150mm epi wafers



150mm VCSEL wafers



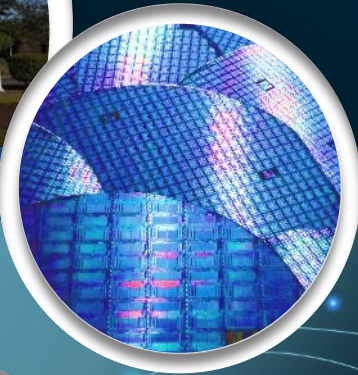
# Compound Semiconductors: Aiming Beyond Lasers



G4 MOCVD Reactor

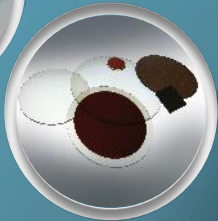
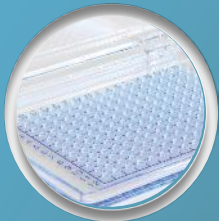


Newton Aycliffe, U.K.



*“I skate to where the puck is going,  
not where it has been”*

Wayne Gretzky



Part of a broader strategic move to provide a versatile 6” wafer fab for GaAs, SiC and InP-based devices.



## **Innovation**

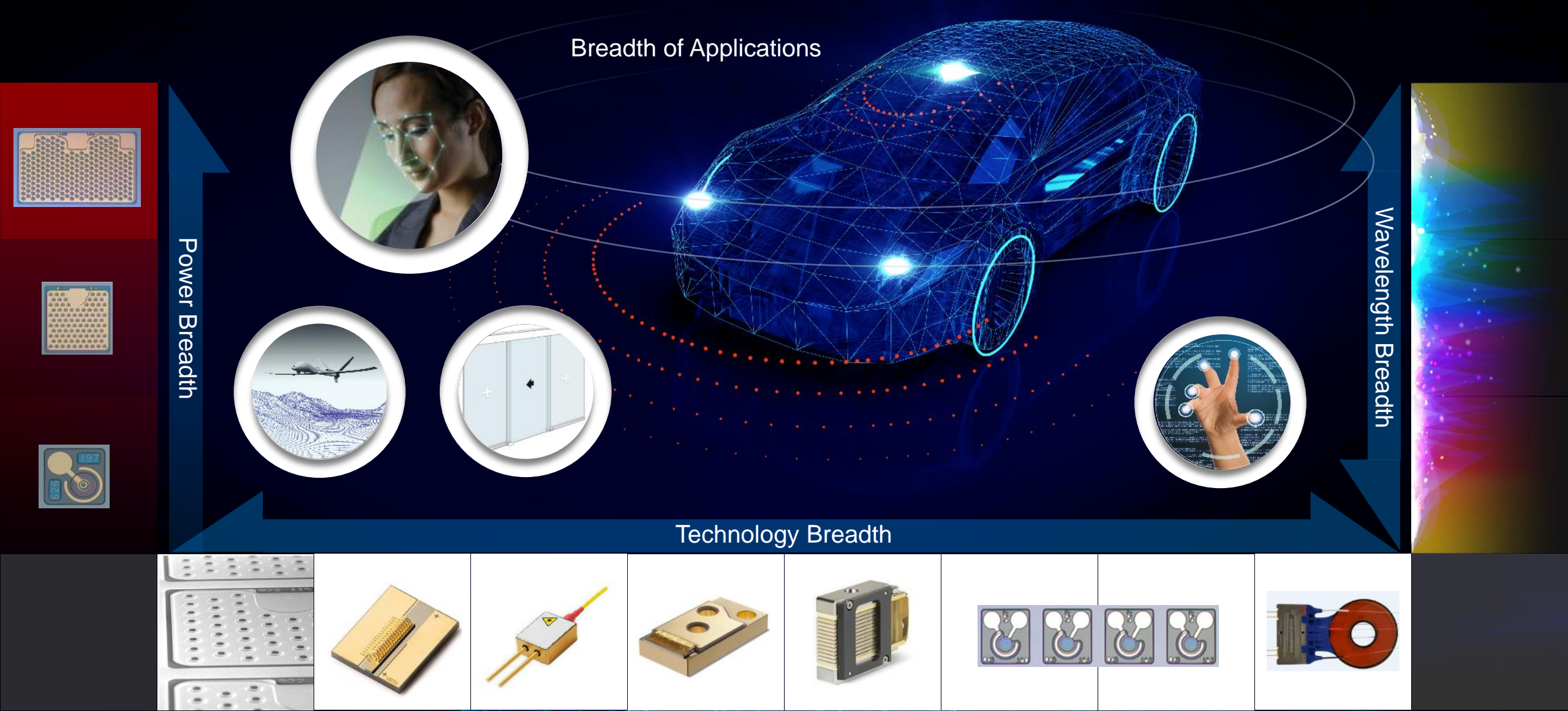
Dr. Giovanni Barbarossa, Chief Technology Officer and President, Laser Solutions Segment

# Innovation Strategy

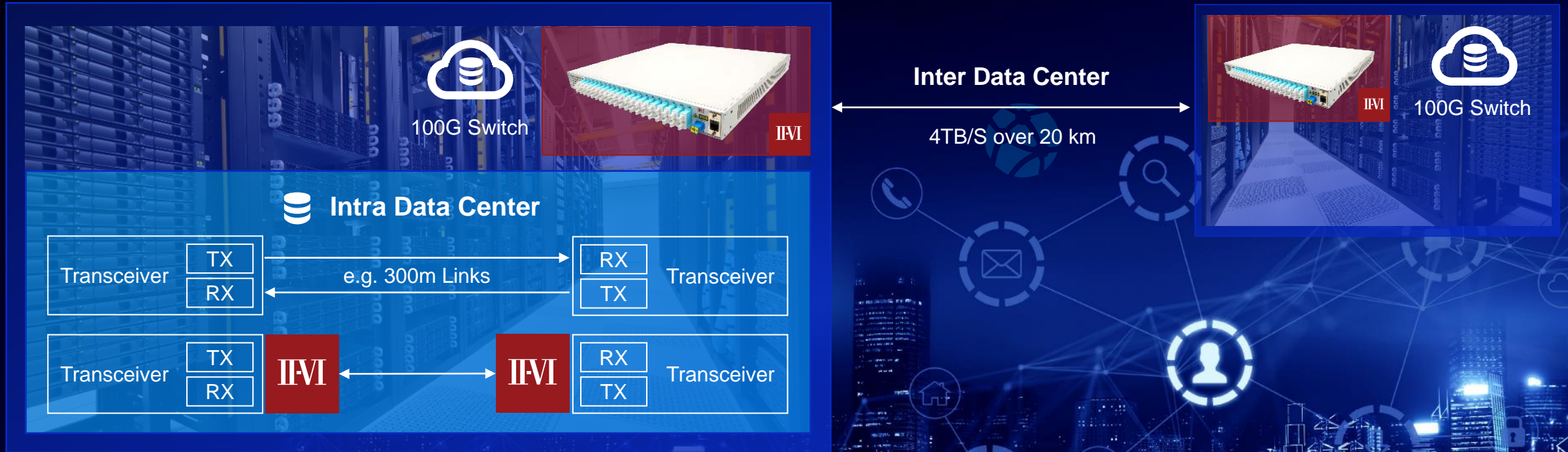




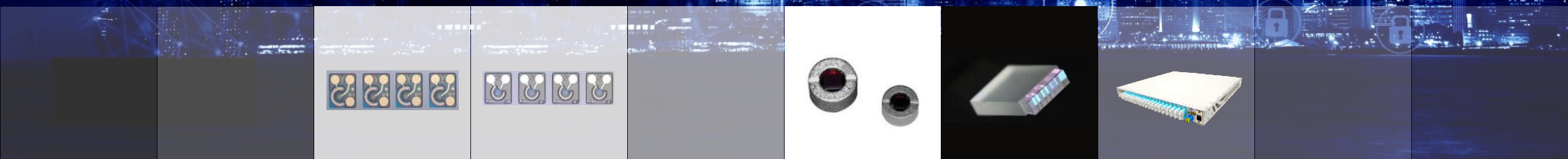
# 3D Sensing



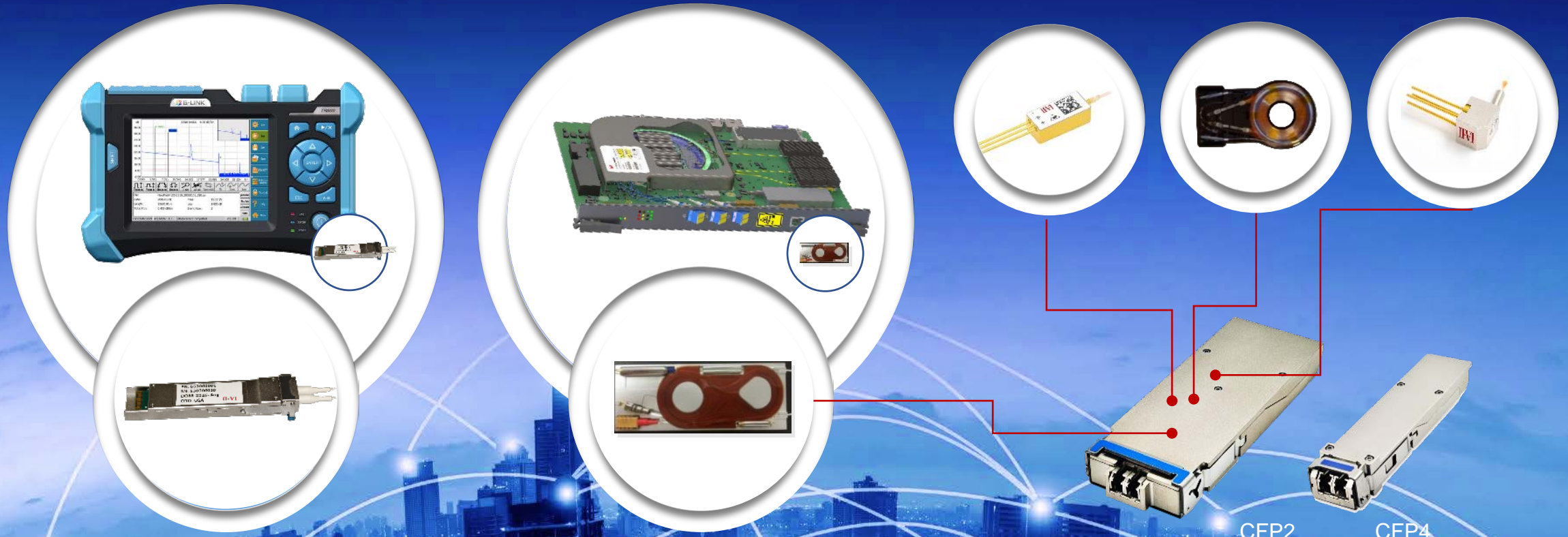
# Innovative Optical Connectivity



Mux/Demux



# Enabling Through Miniaturization

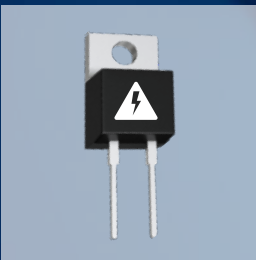
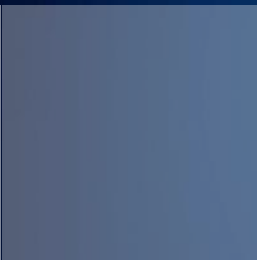
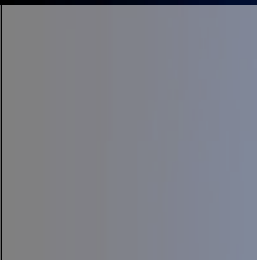
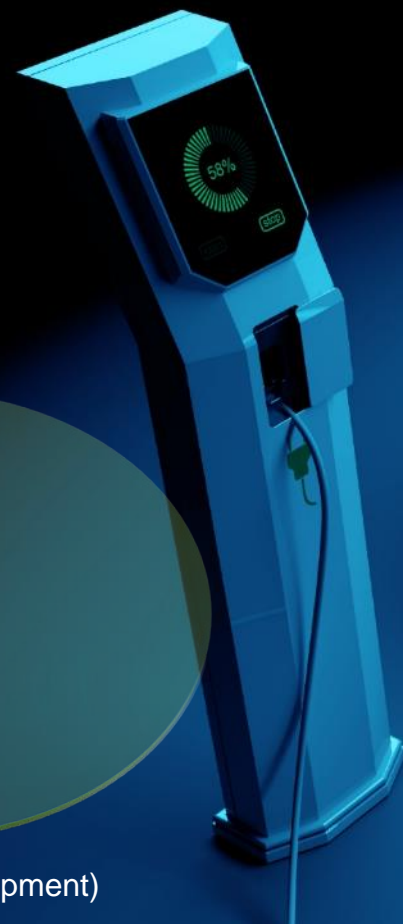
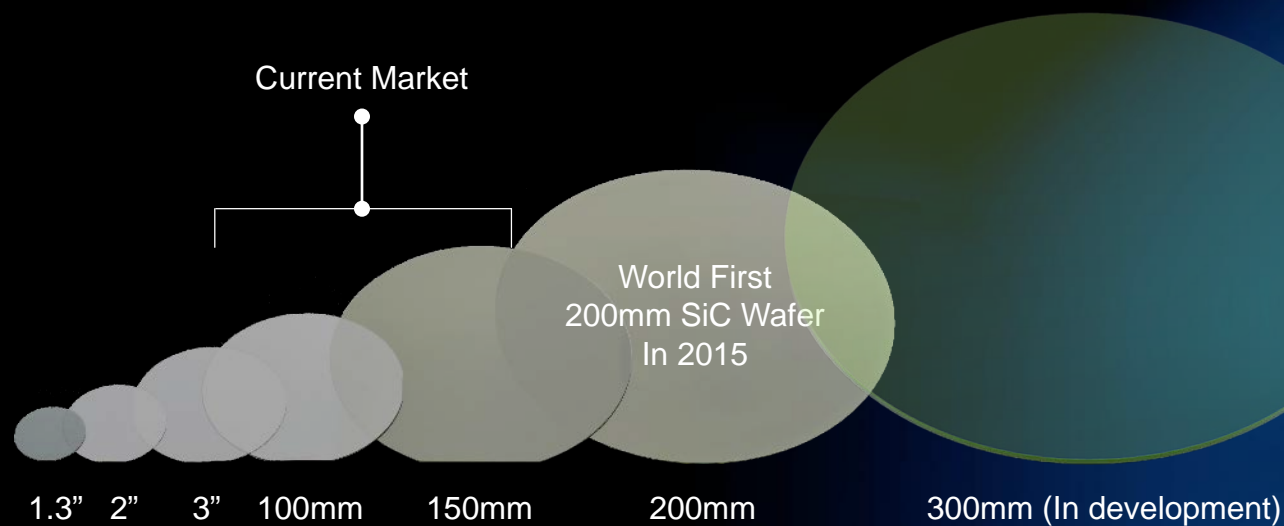


CFP2

CFP4

# Silicon Carbide Compound Semiconductor

Innovating in substrate and compound semiconductor epitaxial growth



## Financial Outlook

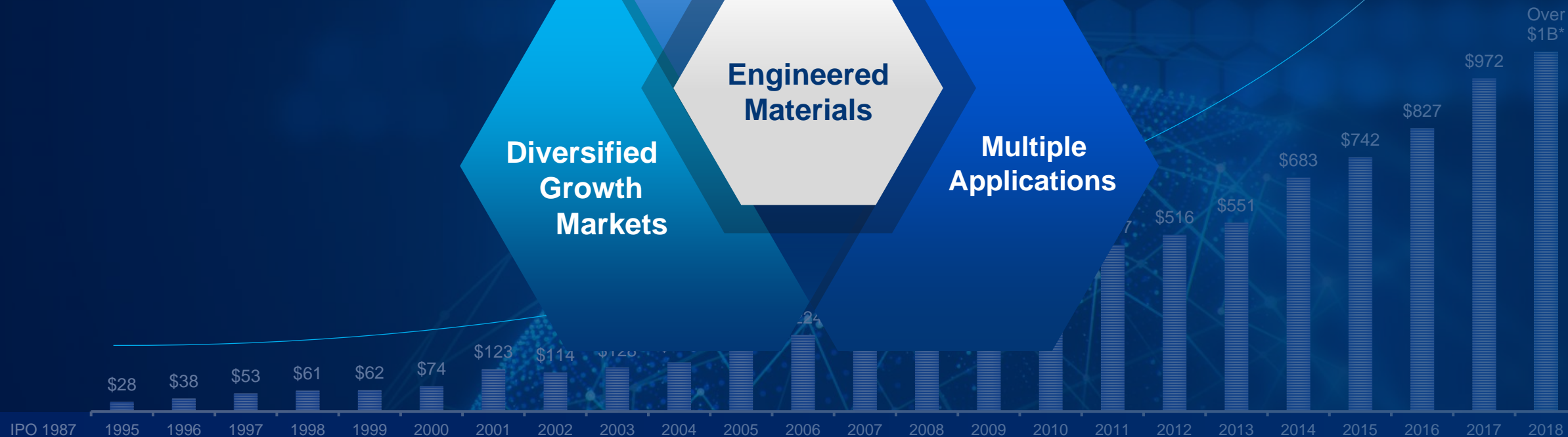
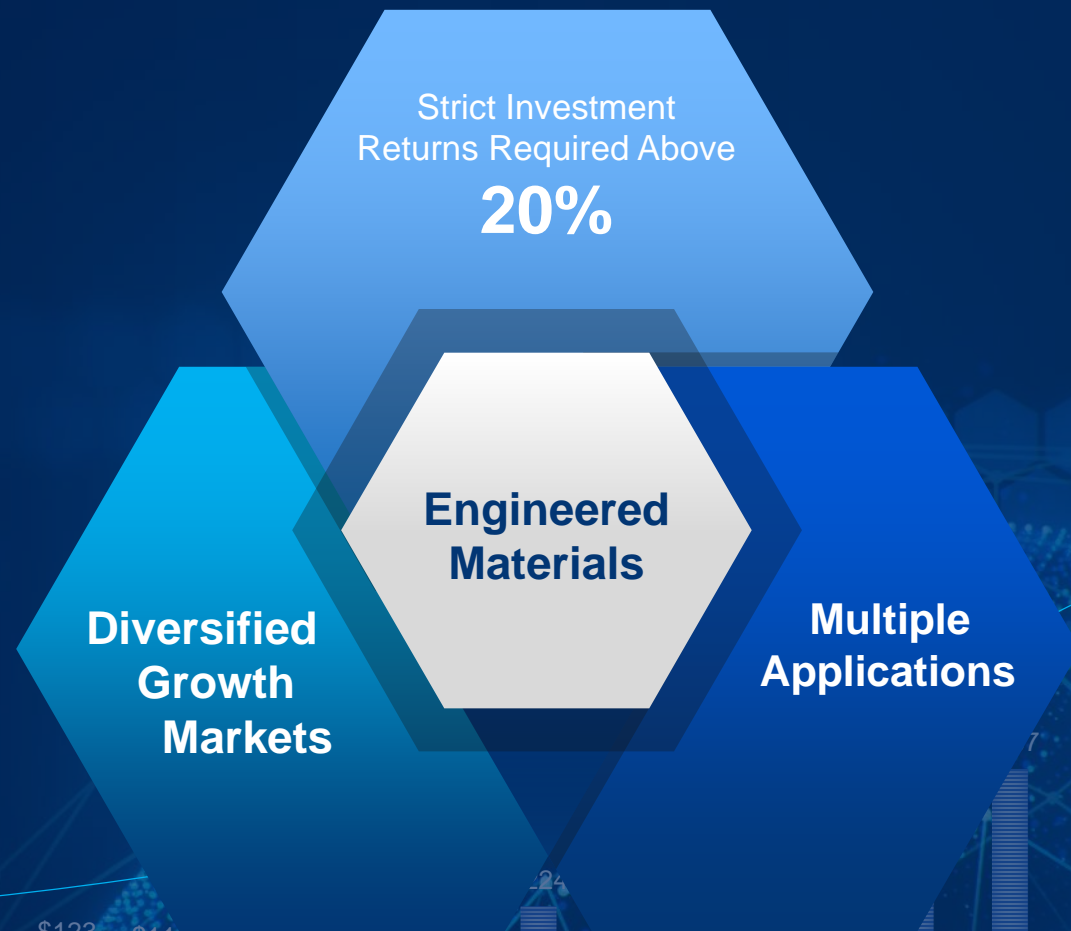
Mary Jane Raymond, Chief Financial Officer



# Capital Allocation Goals For II-VI



# Investment Parameters



# Our Capital Allocation Priorities Align to our Strategy Going Forward



\* Defined as trailing 12 months of net income divided by the sum of capital (common stock, APIC, treasury shares) and debt (current and long-term portion).





# Returns to the Shareholders



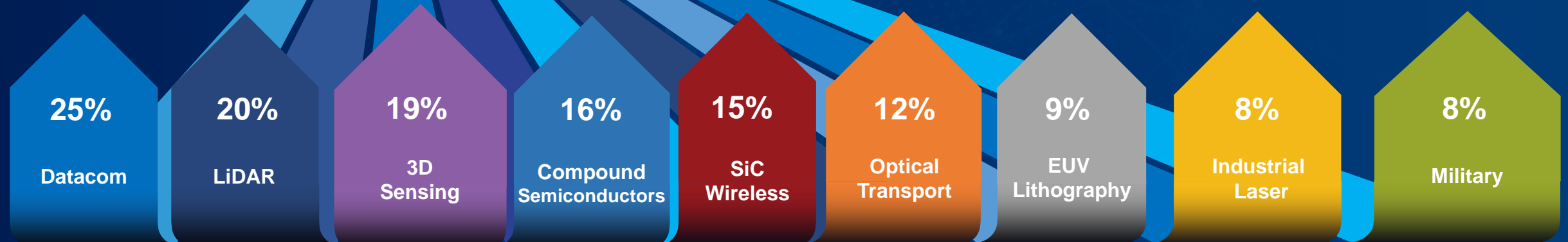
## Accelerating Growth

Targeting Revenue Growth  
2.5-4.0X GDP Across the Cycle

EPS Growth	1.5-2.0X Revenue Growth Rate Including Platform Investments
ROIC	18-25%
R&D	7-11% of Sales
CAP EX	10-15% of Sales

FY2016  
FY2017 **20%** of 30 Years Cum. Total

FY2018 Run Rate **12%** of 31 Years Cum. Total



\* Defined as trailing 12 months of net income divided by the sum of capital (common stock, APIC, treasury shares) and debt

# II-VI

MATERIALS THAT MATTER™

 Nasdaq II-VI | [www.ii-vi.com](http://www.ii-vi.com)

## Reconciliation Tables

	Three Months Ended			Year Ended	
	Sept 30, 2017	June 30, 2017	Sept 30, 2016	June 30, 2017	June 30, 2016
Adjusted operating income	\$ 31.8	\$ 35.7	\$ 23.7	\$ 115.5	\$ 91.8
Acquired business's one-time expenses	(2.0)	-	-	-	-
Operating income	\$ 29.8	\$ 35.7	\$ 23.7	\$ 115.5	\$ 91.8
Interest expense	3.6	2.3	1.2	6.8	3.1
Other expense (income), net	(0.7)	(0.4)	(1.4)	(10.1)	(1.3)
Income taxes	5.8	1.2	7.6	23.5	24.5
Net Earnings	<u>\$ 21.1</u>	<u>\$ 32.6</u>	<u>\$ 16.3</u>	<u>\$ 95.3</u>	<u>\$ 65.5</u>

	Three Months Ended			Year Ended	
	Sept 30, 2017	June 30, 2017	Sept 30, 2016	June 30, 2017	June 30, 2016
Adjusted EBITDA	\$ 50.4	\$ 55.0	\$ 40.0	\$ 189.2	\$ 149.8
<i>Adjusted EBITDA margin</i>	<i>19.3%</i>	<i>20.1%</i>	<i>18.1%</i>	<i>19.5%</i>	<i>18.1%</i>
Acquired business's one-time expenses	(2.0)	-	-	-	-
Acquired depreciation and amortization	1.0	-	-	-	-
EBITDA	\$ 49.4	\$ 55.0	\$ 40.0	\$ 189.2	\$ 149.8
<i>EBITDA margin</i>	<i>18.9%</i>	<i>20.1%</i>	<i>18.1%</i>	<i>19.5%</i>	<i>18.1%</i>
Interest expense	3.6	2.3	1.2	6.8	3.1
Depreciation and amortization	18.9	18.9	14.9	63.6	56.7
Income taxes	5.8	1.2	7.6	23.5	24.5
Net Earnings	<u>\$ 21.1</u>	<u>\$ 32.6</u>	<u>\$ 16.3</u>	<u>\$ 95.3</u>	<u>\$ 65.5</u>

## II-VI Reports GAAP EPS

**To calculate EPS comparable to some peers, below are the values of typical adjustments used by other companies**

<b>II-VI Consolidated</b>						
<b>Summary of Typical Industry Non-GAAP Adjustments</b>						
	<u>Q1 FY17</u>	<u>Q2 FY17</u>	<u>Q3 FY17</u>	<u>Q4 FY17</u>	<u>Q1 FY18</u>	<u>Q2 FY18</u>
Amoritzation	3.2	3.2	3.2	3.2	3.6	3.8
Share Based Comp	4.1	3.9	4.5	3.5	6.3	4.7
One Time Costs	-	-	-	0.4	1.2	-
Operation Dilution (Inv roll through)	-	-	-	0.2	2.0	1.0
	<b>7.3</b>	<b>7.1</b>	<b>7.7</b>	<b>7.3</b>	<b>13.1</b>	<b>9.5</b>
Tax	2.3	1.8	1.8	0.3	2.8	1.2
PAT	5.0	5.3	5.9	7.0	10.3	8.3
Outstanding Shares	65.3	65.3	65.3	65.3	65.3	65.3
<b>EPS Impact of Typical Industry Non-GAAP Adj.</b>	<b>0.08</b>	<b>0.08</b>	<b>0.09</b>	<b>0.11</b>	<b>0.16</b>	<b>0.13</b>

## Biographies

### Francis J. Kramer.

Mr. Kramer joined the Company in 1983 and served as its President from 1985 to 2014, its Chief Executive Officer from 2007, and its Chairman and CEO from 2014 to 2016. He now serves as the Company's Chairman of the Board of Directors. Mr. Kramer holds a B.S. degree in Industrial Engineering from the University of Pittsburgh and an M.S. degree in Industrial Administration from Purdue University. Mr. Kramer had served as director of Barnes Group Inc., a publicly traded aerospace and industrial manufacturing company (NYSE: B), from 2012 to 2016. Mr. Kramer provides our Board and the Company with guidance on our growth strategy, in particular on the profitable execution of the strategy to achieve sustainable competitive advantage. He contributes considerable business development experience. He also has significant operations experience that is relevant to the Company's strategy.

### Vincent D. Mattera, Jr.

Dr. Mattera initially served as a member of the II-VI Board of Directors from 2000-2002. Dr. Mattera joined the company as Vice President in 2004 and served as Executive Vice President from January of 2010 to November of 2013, when he became the Chief Operating Officer. In November of 2014, Dr. Mattera became the President and Chief Operating Officer, and was reappointed to the Board of Directors. In November of 2015, he became the President of II-VI. In September of 2016, Dr. Mattera became the Company's third President and Chief Executive Officer in 45 years. During his career at II-VI he has assumed successively broader management roles, including as a lead architect of the company's diversification strategy. He has provided vision, energy and dispatch to the company's growth initiatives including overseeing the acquisition-related integration activities in the US, Europe, and Asia- especially in China- thereby establishing additional platforms. These have contributed to a new positioning of the company into large and transformative global growth markets while increasing considerably the global reach of the company, deepening the technology and IP portfolio, broadening the product roadmap and customer base, and increasing the potential of II-VI.

Prior to joining II-VI as an executive, Dr. Mattera had a continuous 20 year career in the Optoelectronic Device Division of AT&T Bell Laboratories, Lucent Technologies and Agere Systems during which he led the development and manufacturing of semiconductor laser based materials and devices for optical and data communications networks. Dr. Mattera has 34 years of leadership experience in the compound semiconductor materials and device technology, operations and markets that are core to II-VI's business and strategy. Dr. Mattera holds a B.S. in chemistry from the University of Rhode Island (1979), and a Ph.D. degree in chemistry from Brown University (1984). He completed the Stanford University Executive Program (1996). His 14 year tenure at II-VI underpins a valuable historical knowledge about the Company's operational and strategic issues. We believe that Dr. Mattera's expertise and experience qualifies him to provide the board with continuity and a unique perspective about on the Company.

## Biographies

### Giovanni Barbarossa

Giovanni Barbarossa joined II-VI in 2012 and has been the President, Laser Solutions Segment, since 2014, and the Chief Technology Officer since 2012. Dr. Barbarossa was employed at Avanex Corporation from 2000 through 2009, serving in various executive positions in product development and general management, ultimately serving as President and Chief Executive Officer. When Avanex merged with Bookham Technology, forming Oclaro, Dr. Barbarossa became a member of the Board of Directors of Oclaro and served as such from 2009 to 2011. Previously, he had management responsibilities at British Telecom, AT&T Bell Labs, Lucent Technologies, and Hewlett-Packard. Dr. Barbarossa graduated from the University of Bari, Italy, with a B.S. in Electrical Engineering, and a Ph.D. in Photonics from the University of Glasgow, U.K.

### Mary Jane Raymond

Mary Jane Raymond has been Chief Financial Officer and Treasurer of the Company since March 2014. Previously, Ms. Raymond was Executive Vice President and Chief Financial Officer of Hudson Global, Inc. (NASDAQ: HSON) from 2005 to 2013. Ms. Raymond was the Chief Risk Officer and Vice President and Corporate Controller at Dun and Bradstreet, Inc., from 2002 to 2005.

Additionally, she was the Vice President, Merger Integration, at Lucent Technologies, Inc., from 1997 to 2002 and held several management positions at Cummins Engine Company from 1988 to 1997. Ms. Raymond holds a B.A. degree in Public Management from St. Joseph's University, and an MBA from Stanford University.