II-VI

2019 ANNUAL REPORT

MATERIALS THAT MATTER

About II-VI

II-VI Incorporated, a global leader in engineered materials and optoelectronic components, is a vertically integrated manufacturing company that develops innovative products for diversified applications in communications, materials processing, aerospace and defense, semiconductor capital equipment, life sciences, consumer electronics, and automotive markets. Headquartered in Saxonburg, Pennsylvania, the Company has research and development, manufacturing, sales, service, and distribution facilities worldwide. The Company produces a wide variety of application-specific photonic and electronic materials and components, and deploys them in various forms, including integrated with advanced software to support our customers. For more information, please visit us at **www.ii-vi.com**.

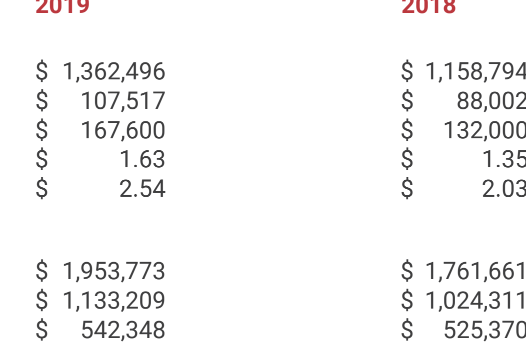
The potential for the number of connected machines to overtake the number of connected people is driving fifth-generation wireless networks (5G). A large fraction of connected machines, such as sensors in homes, factories, and farms, will require modest amounts of bandwidth. Emerging applications, though, such as augmented reality and autonomous driving, will require instant access to large amounts of cloud computing power to leverage artificial intelligence and machine learning in real time. Applications in telemedicine such as remote surgery will require highly reliable, low latency connectivity. 5G promises to be the common internet access infrastructure enabling these emerging and revolutionary use cases. II-VI offers a broad range of materials, devices, components, and subsystems to enable the optical network infrastructure of the cloud and the coming large-scale 5G rollout.

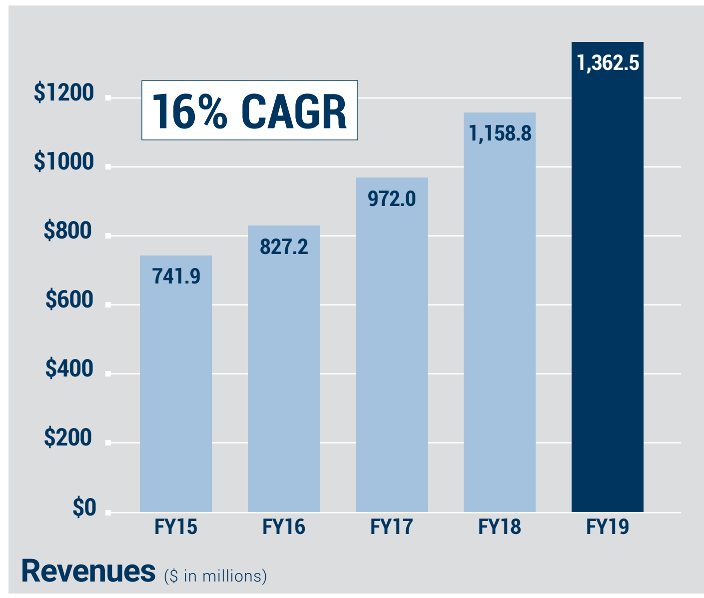
The images on the cover, starting from the top and rotating clockwise, represent:

- Connected factory (Industry 4.0)
- Telemedicine
- 5G wireless antenna
- Farming in the cloud
- Augmented reality
- Autonomous driving

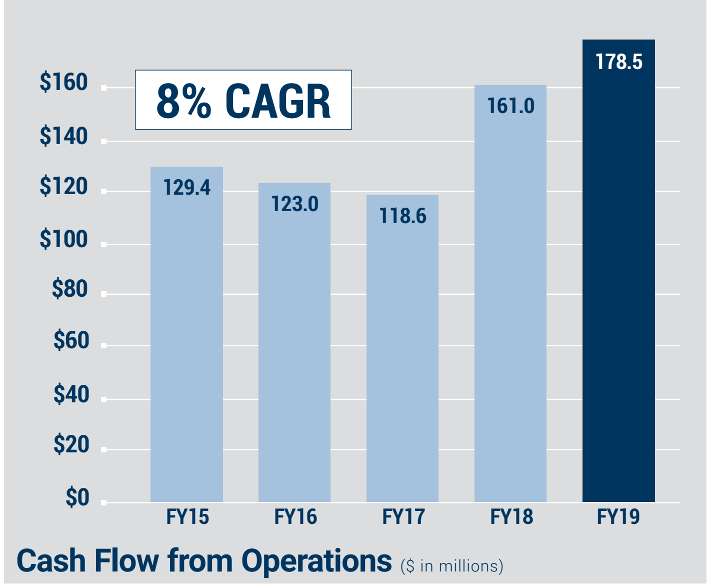
Financial Summary

For the year ended or as of June 30 ($000 except per share data)	2019	2018
Revenues	$ 1,362,496	$ 1,158,794
Net earnings	$ 107,517	$ 88,002
Adjusted net earnings	$ 167,600	$ 132,000
Diluted earnings per share	$ 1.63	$ 1.35
Adjusted diluted earnings per share	$ 2.54	$ 2.03
As of June 30		
Total assets	$ 1,953,773	$ 1,761,661
Total shareholders' equity	$ 1,133,209	$ 1,024,311
Working capital	$ 542,348	$ 525,370

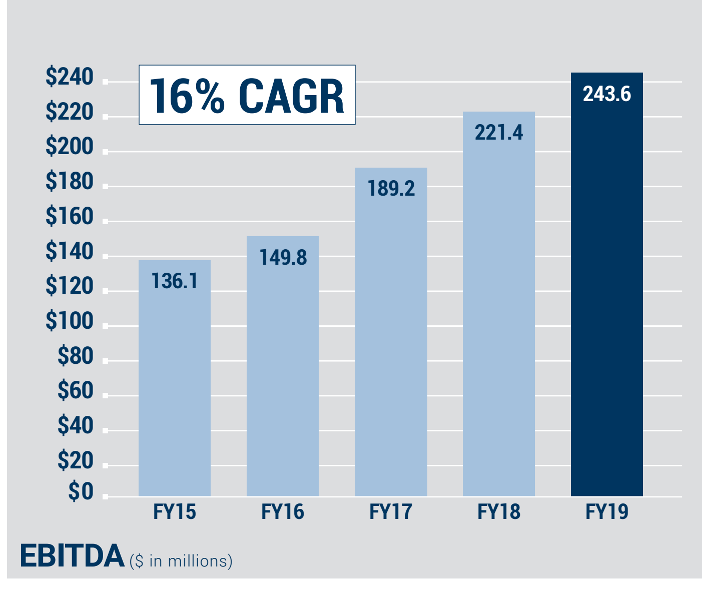




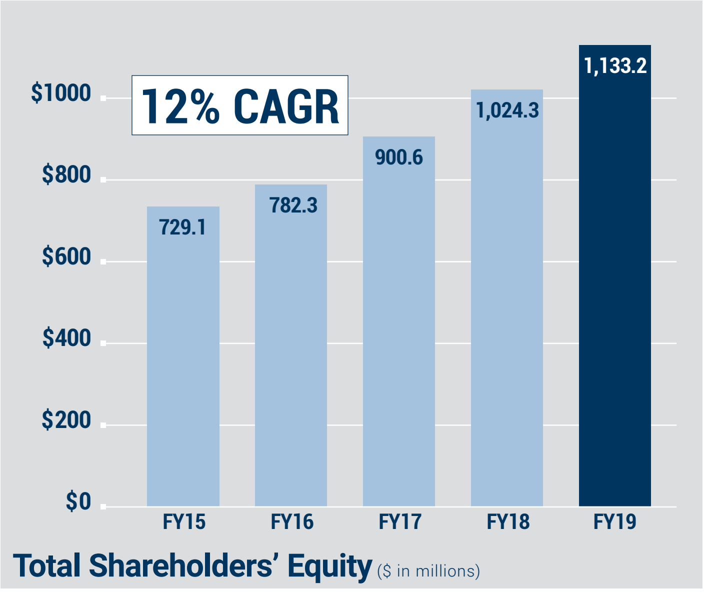
Revenues ($ in millions)



Cash Flow from Operations ($ in millions)



EBITDA ($ in millions)



Total Shareholders' Equity ($ in millions)

CAGR – *Compound Annual Growth Rate*

EBITDA – *Earnings before interest, income taxes, depreciation, and amortization*

Adjusted net earnings and adjusted diluted earnings per share excludes certain items. See Financial Reconciliation Tables on the inside back cover of this Annual Report for a reconciliation of Adjusted Net Earnings to Net Earnings and EBITDA to Net Earnings.

In Fiscal Year 2019, II-VI had another great year. Annual revenues reached a record of nearly $1.4 billion and we ended the year with record cash flows from operations. One of the major highlights this fiscal year was our announcement in November 2018 of our intent to acquire Finisar Corporation, a company about the size of II-VI in terms of revenue and number of employees and a leader in optical communications. Combined, we will be one of the leaders in photonic solutions and compound semiconductors.

The Communications Infrastructure in the Cloud

Our business in the communications end market had another phenomenal year in sales and great customer recognition, having received numerous supplier awards from communications equipment vendors in North America, Europe, and China. I am extremely proud of our global world-class team and excited about our prospects in this exciting market.

Optical communications provides connectivity from broadband wireless and wireline access points to the global cloud infrastructure across metropolitan, long-distance, and undersea networks. This year saw the first-ever deployment of multicore fiber technology in undersea cables, which was enabled by our new 800 mW undersea pump lasers. Other undersea deployments included our low-port-count wavelength selective switch (WSS) for the first time.

We also launched this year a new 400 mW version of our flagship uncooled micro-pump laser, the smallest on the market. This pump laser enables high-speed fiber-optic coherent transmission ranging from 100 gigabits per second (Gbps) to beyond 1 terabit per second (Tbps). Finisar will complement our portfolio with an impressive set of coherent transmission technologies based on their world-class indium phosphide (InP) optoelectronics platform, including monolithic wavelength-tunable lasers, high-speed modulators, and coherent receivers.

We remain fully committed to and are very confident in the secular growth of datacenters driven by the cloud and fifth-generation (5G) wireless communications. In support of this market, we introduced our 56 Gbps PAM4 VCSEL arrays for 200 and 400 Gigabit Ethernet short-reach transceivers. We look forward to adding Finisar's InP platform to our gallium arsenide (GaAs) portfolio of optoelectronics to serve the entire datacom transceiver market as it resumes growth.

We also look forward to leveraging Finisar's InP-based optoelectronics for the 5G optical infrastructure buildout. We believe that 5G deployments will spur the development of new economies based on innovative services, including telemedicine and autonomous driving, and will lift our entire communications

Shareholder Letter

business. To meet the initial demand in China, Korea, and Japan, we inaugurated in November 2018 our new 300,000 sq. ft. facilities in Fuzhou to expand manufacturing and host our new Asia Regional Headquarters.

Our silicon carbide (SiC) substrates played an important role in our Fiscal Year 2019 growth. In the wireless base station ecosystem, II-VI supplies 100 mm and 150 mm SiC substrates for RF electronics used in advanced gallium nitride (GaN) device technology. In 2018, II-VI entered into an agreement with Sumitomo Electric Device Innovations (SEDI) to manufacture RF electronics on our 150 mm GaN-on-SiC device manufacturing platform in Warren, NJ. SEDI is the market leader in these GaN RF devices for wireless applications, and we are on track to be qualified for production in the second half of 2020, in time for the global ramp-up of 5G.

Improving the Efficiency of Electric Vehicles

Consistent with our views of our addressable growing and transformative markets and the ability of engineered materials to offer sustainable differentiation for our customers, we are continuing to invest for the long-term. It has now been 20 years since we began working on SiC. Our innovations led to the introduction in 2015 of the world's first 200 mm substrates. This year, we began to ship these large area substrates for a program funded by the European Union tasked with developing an ecosystem for SiC-based power electronic devices produced on 200 mm wafers to serve various markets, including electric vehicles (EVs), which are expected to proliferate around the world during this decade. These power electronic devices based on SiC are more efficient than those based on silicon, enabling EVs to achieve a target driving range with a smaller and lighter-weight battery, which lowers cost and reduces CO_2 emissions.

Other II-VI products also help vehicle manufacturers make lighter and therefore more fuel-efficient vehicles. For example, our advanced laser processing heads produce welds with minimal excess materials in vehicle chassis, closures, and battery assemblies. We expect that ultrahigh-strength and lightweight parts will increasingly be produced by laser-based additive manufacturing, a growing market for our products.

3D Sensing and Augmented Reality

We remain committed to our investments around 3D sensing. We believe that this large and transformative market is in the early stages of its growth cycle and will continue to grow rapidly over multiple years. The convergence of computing, communications, and sensing is expected to enable consumers to experience high-quality, real-time augmented reality on smartphones, automotive heads-up displays, smart glasses, and other types of wearable electronics. These applications are driving the demand for vertical cavity surface emitting laser (VCSEL) arrays that enable depth sensing cameras. A typical design for 3D sensing requires on the order of a hundred VCSEL elements per chip in order to scale up the optical power required, for example, for facial biometrics applications. We have been in volume production of high-quality VCSEL arrays for 3D sensing for almost two years and intend to build on that momentum to achieve more efficient designs for new opportunities in the consumer electronics market.

We are eager to leverage Finisar's broad range of capabilities in InP-based optoelectronics, diffractive optics, liquid crystal on silicon (LCoS) technology, integrated circuit design, and high-volume automated assembly manufacturing to address all of these new exciting opportunities.

We have begun Fiscal Year 2020 with a streamlined company structure that will be able to substantially scale, commensurate with our opportunities and aspirations, and still enable us to react quickly to any changes in the global economy. II-VI continues to be an exciting place to work, learn, and grow with a sense of purpose. This, along with our shared values, pervades the company and underpins the fabric of our enterprise-wide culture. Our employees care deeply about the positive impact that they can have on many of the challenges that the world is confronting. We remain as committed as ever to our mission to enable the world to be safer, healthier, closer, and more efficient.

Dr. Vincent D. (Chuck) Mattera, Jr.
Chief Executive Officer

The New II-VI Organization in 2020

At the beginning of fiscal year 2020, we announced a new company structure and leadership team. II-VI is now organized around two operating segments, each with very large addressable markets. Within these two new segments, we constructed new business units around existing divisions, product lines, and technology platforms. With this new structure, we are consolidating the corporate activities of the company to achieve simplicity, efficiency, speed, and scalability.

Our new streamlined organization is a major leap forward for II-VI. We are confident that it will help fuel our long-term growth and allow us to take a longer-term view, clearly linking our innovation programs to large-market megatrends. Furthermore, it will ensure that our technology investments are strategically allocated at all levels of the value chain, from engineered materials to devices, components, and subsystems.

The Photonic Solutions Segment will include the following business units:

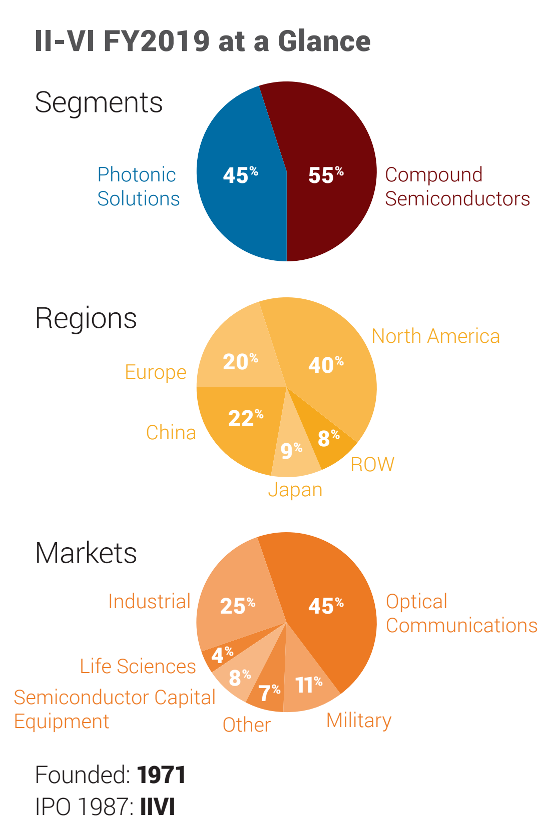
- ROADM Business Unit
- Advanced Optics Business Unit

The Compound Semiconductors Segment will include the following business units:

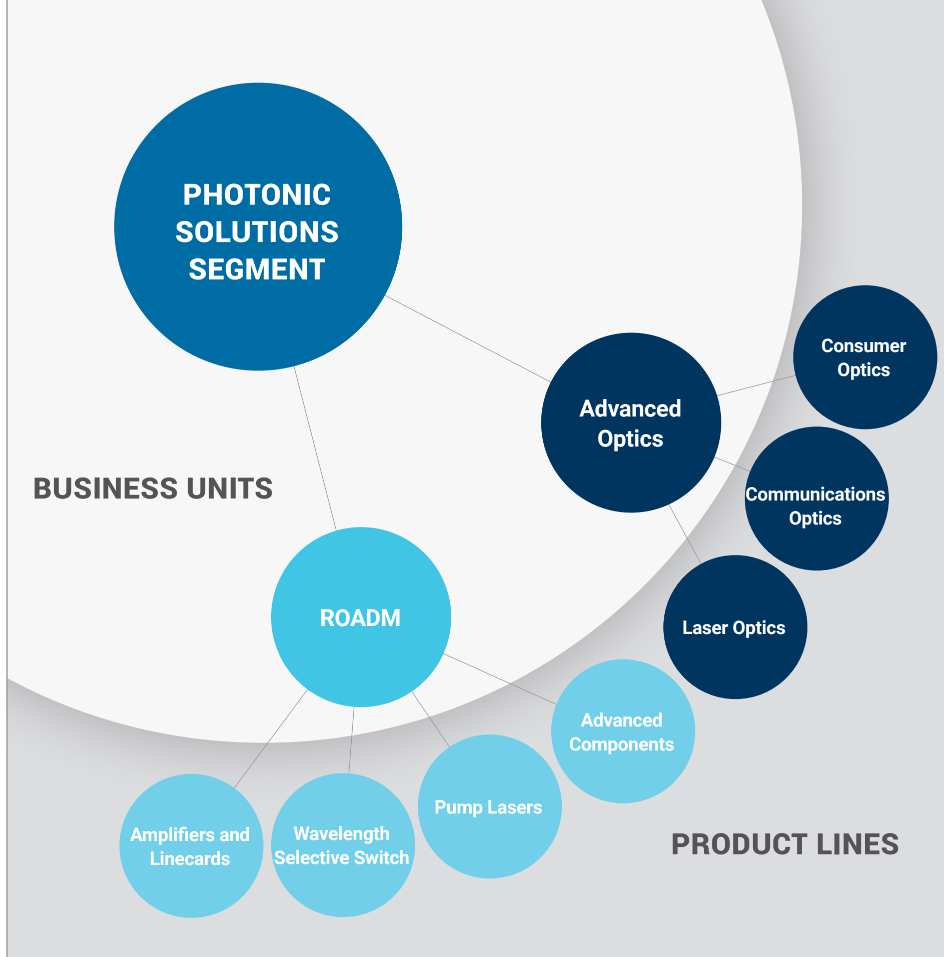
- Wide-Bandgap Semiconductors Business Unit
- Optoelectronic and RF Devices Business Unit
- Engineered Materials and Laser Optics Business Unit
- Laser Devices and Systems Business Unit
- Aerospace and Defense Business Unit

Based on the FY19 numbers, the revenue divides approximately equally between the two segments. Almost all the revenue in the Photonic Solutions Segment is for optical communications, whereas in the Compound Semiconductors Segment, the revenue is diversified across multiple end markets. II-VI remains strongly committed to all of our end markets, and we expect that over time our revenue will return to being more evenly distributed across those markets.

II-VI FY2019 at a Glance



Founded: **1971**
IPO 1987: **IIVI**
Worldwide Employees: **12,500+**
World Locations: **53**
Countries: **14**
FY2019 Revenue: **$1,362M**



COMPOUND SEMICONDUCTORS SEGMENT

BUSINESS UNITS

Wide-Bandgap Semiconductors

Aerospace and Defense

Laser Devices and Systems

Optoelectronic and RF Devices

Engineered Materials and Laser Optics

PRODUCT PLATFORMS

Silicon Carbide Substrates

Epitaxial Wafers

Magneto-optic Materials

GaAs Photonics

GaAs Electronics

GaN Electronics

Ceramics and Metal Matrix Composites

Performance Metals

Thermoelectrics

IR Optics and Materials

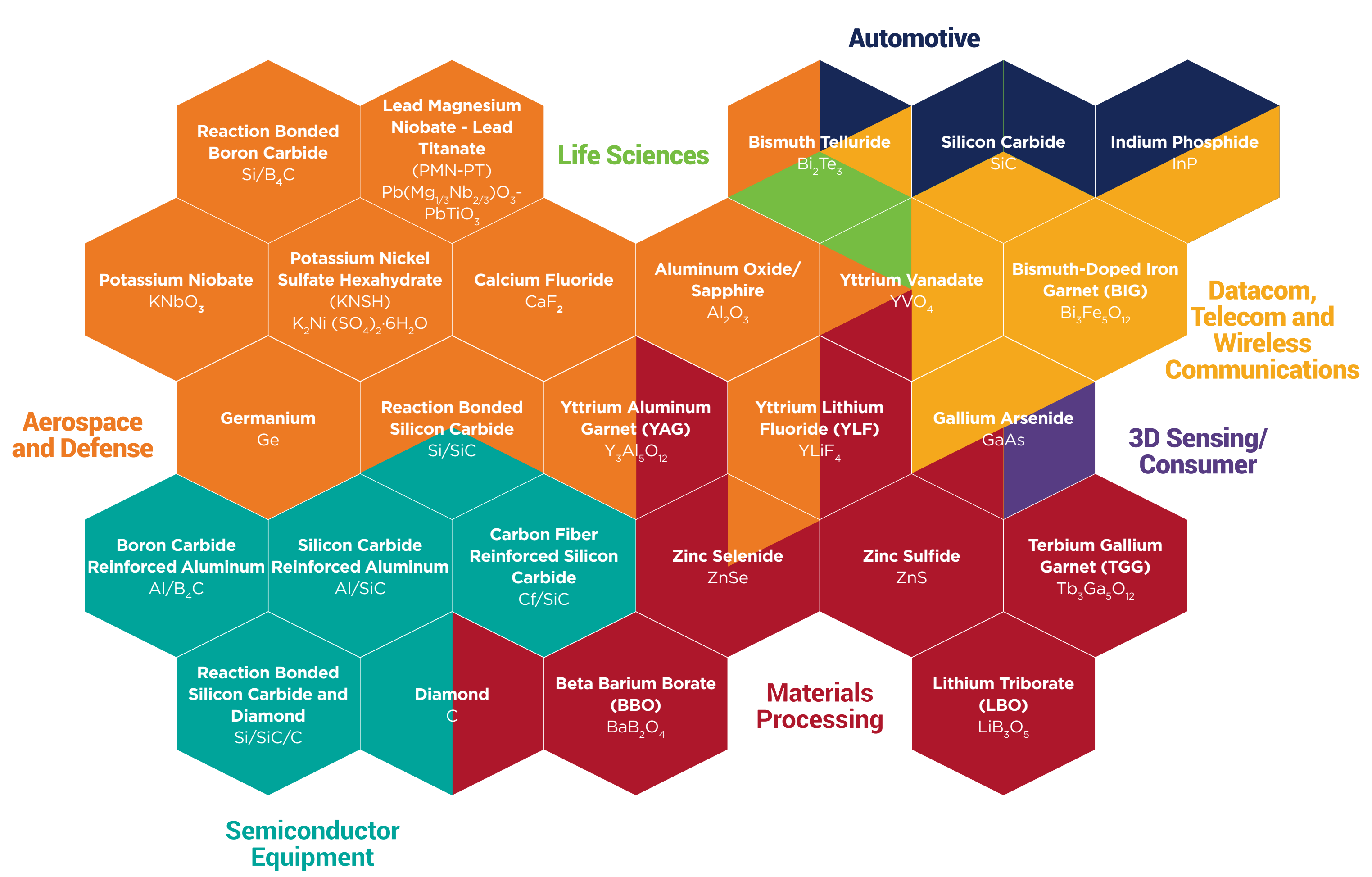
GaAs Optoelectronics

Laser Processing Heads

Laser Systems

Differentiated Materials for Growing End Markets

II-VI's core competency in engineered materials is foundational, as emphasized by our company tag line **MATERIALS THAT MATTER**. II-VI's broad portfolio of engineered materials are grown and fabricated in-house. They are differentiated by unique optical, electrical, thermal, and mechanical properties, which we leverage to successfully compete in our end markets. We build on these differentiated materials to develop market-leading devices, components, and subsystems.

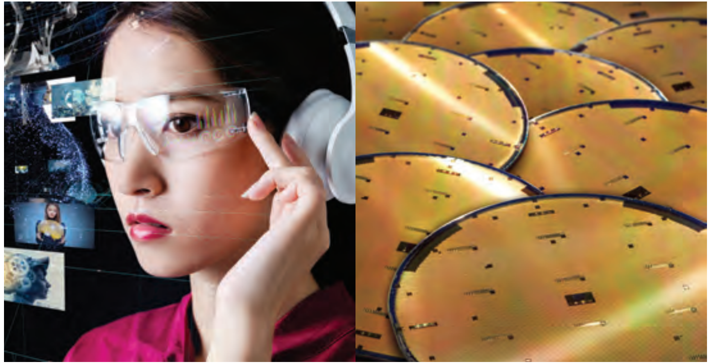


II-VI takes the long term view with respect to its investments in engineered materials and technology platforms. These investments are both for today's exciting market megatrends and for future opportunities that have yet to emerge. Early investments in technology platforms that we are convinced will be needed in the future have been, and will continue to be, at the core of II-VI's strategy.

Each business unit in II-VI's Compound Semiconductors Segment hosts a series of highly differentiated product, technology, and manufacturing platforms:

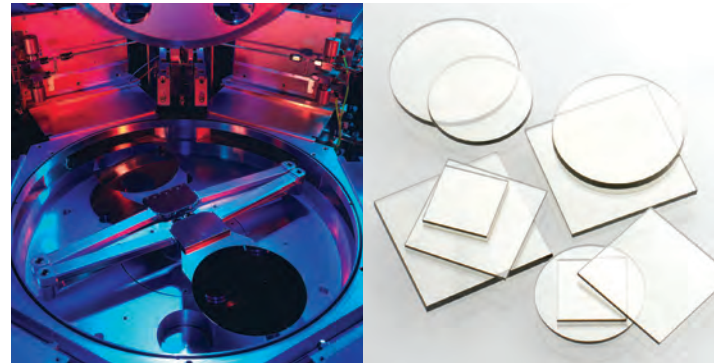
Wide-Bandgap Semiconductors Business Unit

- High quality single crystal silicon carbide (SiC) substrates
- GaAs- and InP-based epitaxial wafers
- Magneto-optic materials



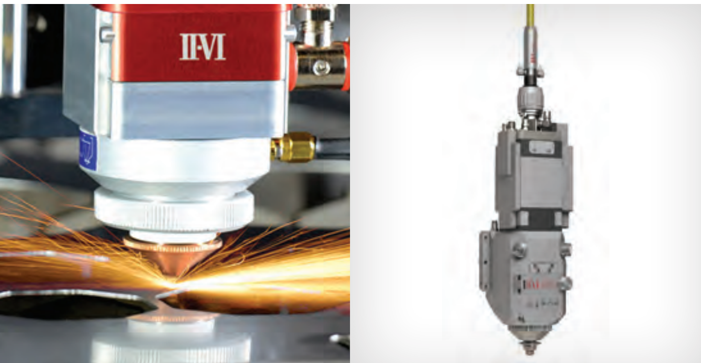
Optoelectronic and RF Devices Business Unit

- GaAs photonics, including the 150 mm VCSEL manufacturing line for 3D sensing
- GaAs electronics platform, including RF devices for consumer electronics
- GaN electronics platform, including RF devices for 5G wireless



Engineered Materials and Laser Optics Business Unit

- Laser optics for materials processing
- Engineered ceramics and metal matrix composites
- Thermoelectric coolers
- Rare specialty metals



Laser Devices and Systems Business Unit

- Semiconductor laser components and modules for high power and high speed applications
- Laser processing heads for materials processing
- Ultra-hard materials laser processing systems

Aerospace and Defense Business Unit

- Ultraviolet to long wavelength infrared materials and optics
- High energy lasers and optics

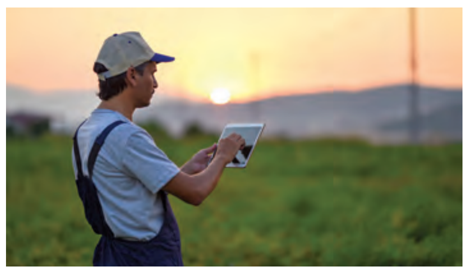
Cloud Computing Today

Cloud computing is driving the buildout of all segments of the optical network. Within datacenters, it is increasing the bandwidth requirements between servers, switches, and routers. Between megascale datacenters, cloud computing is also driving a massive buildout in metro, regional, long-haul, and submarine networks.

II-VI's products enable advances in many parts of the optical network:

Intra-datacenter communications: Inside the cloud operators' hyperscale datacenters, optical transceivers are expected to transition from 100 to 400 Gigabit Ethernet (GbE) to lower the cost per bit of transmission. At the March 2019 Optical Fiber Conference (OFC), II-VI introduced its new 4- and 8-channel VCSEL arrays that operate at 56 Gbps using 4-level pulsed amplitude modulation (PAM4) to enable 200 GbE and 400 GbE transceivers.

Datacenter interconnects: The demand for communications between datacenters has grown so rapidly that it has driven a new class of purpose-built equipment called datacenter interconnects (DCIs). These optical links can span thousands of kilometers to connect global datacenters. II-VI offers a complete portfolio of best-in-class amplifier components and subsystems, including the smallest pump lasers on the market, to enable amplification of coherent transceivers operating at 100 Gbps to beyond 1 Tbps. In submarine networks, II-VI's undersea pump lasers achieve the highest commercially available output power of 800 mW, with record-high electrical-to-optical conversion efficiency, enabling a significantly lower cost per bit of undersea transmission. Moreover, II-VI's liquid-crystal technology now enables low-port-count wavelength selective switch (WSS) modules to be deployed at branching points in undersea networks.



Farming in the Cloud

Farmers are increasing their yields with cloud technologies that enable them to merge a wide range of information, including soil data, satellite images, climate patterns, and precipitation levels. Farmers are increasingly relying on the processing power of the cloud for predictive analysis to allow them to take preventive action more quickly during the growing season to maximize crop output.

Manufacturing in the Cloud

Factories commonly utilize robotics to achieve a high level of uniformity in the manufacturing process. Factory robots are increasingly networked to leverage advanced computing processes in the cloud to improve efficiency and yield. These smart factories are part of what is referred to as the fourth industrial revolution, or Industry 4.0, where manufacturing lines have greater autonomy to improve processes on the fly. They also have greater visibility into the upstream and downstream supply chains to adapt to demand variations in real time.

5G Wireless Tomorrow

Fifth-generation wireless networks (5G) promise to provide consumers and machines on-demand access to cloud computing power, enabling computationally-intensive applications such as big data analytics, blockchain transactions, machine learning, and artificial intelligence.

In mobile wireless use cases, 5G will allow subscribers to instantly access information about their surroundings from data collected by sensors—such as those embedded in smartphones, wearables, and automobiles. This data is processed in real time in the cloud.

In fixed wireless use cases, 5G is expected to deliver internet access at speeds much higher than wired technologies for broadband cable or fiber-to-the-home. However, the number of machines on the network is expected to dwarf the number of consumers on the network, ushering in the era of the internet of things (IoT). 5G has the potential to cost-effectively network our homes, cities, energy grids, and factories to improve efficiencies.

Connecting consumers and machines to the cloud through 5G will require upgrading the radio and optical access networks that provide connectivity between the optical backbone network and the antennas.

5G radio access networks (RANs): Cell tower antenna technology is evolving to support the higher bandwidth requirements that industry analysts predict will reach full potential by mid-2020. In fiscal year 2019, II-VI announced its strategic partnership with Sumitomo Electric Device Innovations (SEDI), a market leader in radio-frequency (RF) devices based on gallium nitride (GaN), to produce GaN-on-silicon carbide RF devices on a vertically integrated 150 mm technology platform. II-VI is on track to be qualified by mid-2020, in time for the deployment ramp-up of the 5G RAN.

5G optical access networks (OANs): Fiber-optic links to 5G antennas will require 25 Gbps links, up from 10 Gbps links for 4G antennas. This increase in bandwidth, combined with the requirement for a higher density of 5G base stations, is driving for the first time the broad deployment of dense wavelength division multiplexing (DWDM) transmission in the optical access network. In fiscal year 2019, II-VI ramped up its production capacity of industry-leading wavelength management filters and modules for network buildouts in Japan and Korea. II-VI also introduced an edge wavelength selective switch (WSS) cost-optimized for access networks.

Connected to the Cloud with 5G

The demand for cloud-based services has been growing steadily with the rise in social media, online shopping, video streaming, and the migration of mission-critical enterprise functions to the cloud. Access to the internet through mobile consumer electronics with increasing screen size and computing power spurred the growth of datacenters and drove multiple generations of upgrades over the last 15 years. The potential for the number of connected machines to overtake the number of connected people is driving 5G. A large fraction of connected machines, such as street lamps in smart cities or sensors in homes and factories, will require modest amounts of bandwidth. Emerging applications, though, such as augmented reality and autonomous driving, will require instant access to large amounts of cloud computing power to leverage artificial intelligence and machine learning in real time. 5G promises to be the common internet access infrastructure enabling these emerging and revolutionary use cases.

A Broad Portfolio of Products for 5G Access Networks

5G, which is set to revolutionize global connectivity and enable landscape-changing innovations and applications, is in its early stages. Standards are continuing to evolve. Countries worldwide are still auctioning off 5G spectrum bands to wireless service providers. The 5G optical and radio access infrastructure is just beginning deployment in various countries worldwide. The first 5G phones are already on the market, and 5G services have been launched with great fanfare in countries such as Korea, the U.S., the U.K., and Finland, although coverage is often still limited.

II-VI offers a broad range of materials, devices, components, and subsystems to enable the coming large-scale 5G rollout. II-VI's Compound Semiconductors Segment enables the 5G radio access network with silicon carbide RF devices in base stations and gallium arsenide epitaxial wafers for RF devices in consumer electronics. II-VI's Photonic Solutions Segment, especially when combined with the product portfolio from the pending acquisition with Finisar, will offer a powerful array of wavelength management solutions and transceivers for the optical access infrastructure and the optical backbone network.

Photonic Solutions Segment

Backbone Network

II-VI
Line Cards

FINISAR
Coherent TRx

FINISAR
HPC WSS

II-VI
Amplifiers

II-VI
OCM/OTDR

WSS: Wavelength Selective Switch; HPC/LPC: High/Low Port Count

OCM: Optical Channel Monitor

OTDR: Optical Time Domain Reflectometer

TRx: Transceiver; FH: Fronthaul; BH: Backhaul; RF: Radio Frequency

BiDi: Bidirectional; DWDM: Dense Wavelength Division Multiplexing

	2017	2018	2019	2020
II-VI	Global backbone buildouts in anticipation of 5G traffic	II-VI signs agreement with SEDI to develop GaN/SiC on 150 mm	5G mmWave standard to drive GaN/SiC RF demand	II-VI to complete qualification and to begin production of GaN/SiC
5G		5G optical access deployments begin in Asia to support 5G New Radio	5G Smartphones and IoT to drive 5G GaAs RF demand, 5G Optical Access deployments continue	5G service to become broadly available

Enabling the world to be **safer**, **healthier**, **closer**, and more **efficient**.

United States
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

☒ **Annual Report pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934**

for the fiscal year ended June 30, 2019

☐ **Transition report pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934**

for the transition period from __________to__________ .

Commission File Number: 0-16195

II-VI INCORPORATED
(Exact name of registrant as specified in its charter)

PENNSYLVANIA	**25-1214948**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
375 Saxonburg Boulevard **Saxonburg, PA** ***(Address of principal executive offices)***	**16056** ***(Zip code)***

Registrant's telephone number, including area code: 724-352-4455

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, no par value	**IIVI**	**Nasdaq Global Select Market**

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Exchange Act. Yes ☐ No ☒

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically, every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company, or an emerging growth company. See definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act:

Large accelerated filer	☒	Accelerated filer	☐
Non-accelerated filer	☐	Smaller reporting company	☐
		Emerging growth company	☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

Aggregate market value of outstanding Common Stock, no par value, held by non-affiliates of the Registrant at December 31, 2018, was approximately $2,023,369,000 based on the closing sale price reported on the Nasdaq Global Select Market. For purposes of this calculation only, directors and executive officers of the Registrant and their spouses are deemed to be affiliates of the Registrant.

Number of outstanding shares of Common Stock, no par value, at August 12, 2019, was 63,610,824.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant’s definitive proxy statement, which will be issued in connection with the 2019 Annual Meeting of Shareholders of II-VI Incorporated, are incorporated by reference into Part III of this Annual Report on Form 10-K.

Forward-Looking Statements

This Annual Report on Form 10-K (including certain information incorporated herein by reference) contains forward-looking statements made pursuant to Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), and the safe harbor provisions of the Private Securities Litigation Reform Act of 1995 (the “PSLRA”). The statements in this Annual Report on Form 10-K that are not purely historical, but are forward-looking statements, including, without limitation, statements regarding our expectations, assumptions, beliefs, intentions or strategies regarding the future. In some cases, these forward-looking statements can be identified by terminology such as, “may,” “will,” “should,” “expects,” “plans,” “anticipates,” “believes,” “intends,” “estimates,” “predicts,” “projects,” “potential,” or “continue” or the negative of these terms or other comparable terminology. Forward-looking statements address, among other things, our assumptions, our expectations, our assessments of the size and growth rates of our markets, our growth strategies, our efforts to increase bookings, sales and revenues, projections of our future profitability, cash generation, success of our research, development and engineering investments, results of operations, capital expenditures, our financial condition, our ability to integrate acquired businesses or other “forward-looking” information and include statements about revenues, costs, investments, earnings, margins, or our projections, actions, plans or strategies.

The forward-looking statements in this Annual Report on Form 10-K involve risks and uncertainties, which could cause actual results, performance or trends to differ materially from those expressed in the forward-looking statements herein or in previous disclosures. We believe that all forward-looking statements made by us have a reasonable basis, but there can be no assurance that these expectations, beliefs or projections will actually occur or prove to be correct, at least on the timetable of our expectations. Actual results could differ materially. We claim the protection of the safe harbor for forward-looking statements contained in the PSLRA for our forward-looking statements.

The following factors, among others, in some cases have affected and in the future could affect our financial performance and actual results, and could cause actual results for fiscal 2020 and beyond to differ materially from those expressed or implied in any forward-looking statements included in this Annual Report on Form 10-K or otherwise made by our management:

- Investments in future markets of potential significant growth may not result in the expected return.
- Our competitive position depends on our ability to develop new products and processes.
- Global economic downturns may adversely affect our business, operating results and financial condition.
- Some systems that use our products are complex in design, and our products may contain defects that are not detected until deployed, which could increase our costs, reduce our revenues, cause us to lose key customers and may expose us to litigation arising from derivative lawsuits related to consumer products.
- Foreign currency risk may negatively affect our revenues, cost of sales and operating margins and could result in foreign exchange losses.
- To retain our competitive position may require significant investments.
- We may be unable to successfully implement our acquisitions strategy or integrate acquired companies and personnel with existing operations.
- Our future success depends on continued international sales, and our global operations are complex and present multiple challenges to manage.
- We are subject to complex and rapidly changing governmental import and export regulations.
- Changes in U.S. trade policies could impact our international operations and the cost of goods imported into the United States, which may narrow the size of our markets, materially impact our revenues or increase our operating costs and expose us to contract litigation.
- Any inability to access financial markets from time to time to raise required capital, finance our working capital requirements or our acquisition strategies, or otherwise to support our liquidity needs could negatively impact our ability to finance our operations, meet certain obligations or implement our growth strategy.
- We may not be able to settle conversions of our convertible senior notes in cash or to repurchase the notes in accordance with their terms.
- We may fail to accurately estimate the size and growth of our markets and our customers’ demands.
- We may encounter increased competition.

- There are limitations on the protection of our intellectual property, and we may from time to time be involved in costly intellectual property litigation or indemnification.
- A significant portion of our business is dependent on cyclical industries.
- Our global operations are subject to complex legal and regulatory requirements.
- Changes in laws and regulations governing data privacy and data protection could have a material adverse impact on our business.
- Data breach incidents and breakdown of information and communication technologies could disrupt our operations and impact our financial results.
- We have entered into supply agreements which commit us to supply products on specified terms.
- We depend on highly complex manufacturing processes that require feeder materials, components and products from limited sources of supply.
- Increases in commodity prices may adversely affect our results of operations and financial condition.
- We use and generate potentially hazardous substances that are subject to stringent environmental regulations.
- Unfavorable changes in tax rates, tax liabilities or tax accounting rules could negatively affect future results.
- Natural disasters or other global or regional catastrophic events could disrupt our operations, give rise to substantial environmental hazards and adversely affect our results.
- Our success depends on our ability to attract, retain and develop key personnel and requires continued good relations with our employees.
- Our stock price has been volatile in the past and may be volatile in the future.
- Some anti-takeover provisions contained in our articles of incorporation and by-laws, as well as provisions of Pennsylvania Law, could impair a takeover attempt, which could also reduce the market price of our common stock.
- Because we do not currently intend to pay dividends, holders of our common stock will benefit from an investment in our common stock only if it appreciates in value, and by the intended anti-dilution actions of our share-buyback program.
- We contract with a number of large end-user service providers and product companies that have considerable bargaining power, which may require us to agree to terms and conditions that could have an adverse effect on our business or ability to recognize revenues.
- We may be adversely affected by climate change regulations.
- We depend on large purchases from a few significant customers, and any loss, cancellation, reduction or delay in purchases by these customers could harm our business.
- The manufacturing of our products may be adversely affected if we are unable to manufacture certain products in our manufacturing facilities.
- Failure to accurately forecast our revenues could result in additional charges for obsolete or excess inventories or non-cancelable purchase commitments.
- If we fail to maintain an effective system of disclosure controls and internal control over financial reporting, our ability to produce timely and accurate financial statements or comply with applicable regulations could be impaired.

Risk Factors Relating to Our Pending Acquisition of Finisar Corporation (“Finisar”)

- Although we expect that our acquisition of Finisar will result in cost savings, synergies and other benefits, the combined company may not realize those benefits because of market conditions, trade and tariff changes, integration difficulties and other challenges.
- We will incur significant transaction-related costs in connection with our pending acquisition of Finisar.
- Our pending acquisition of Finisar is subject to conditions, including certain conditions that may not be satisfied, and may not be completed on a timely basis, or at all. Failure to complete our pending acquisition of Finisar could have material and adverse effects on us.
- Each of II-VI and Finisar is subject to business uncertainties and contractual restrictions while our acquisition of Finisar is pending, which could adversely affect each of Finisar’s and II-VI’s business and operations.
- The market price of our Common Stock may decline in the future as a result of the Merger.

The foregoing and additional risk factors are described in more detail herein under Item 1A. “Risk Factors”. All such factors, as well as factors described or referred to in other filings we make with the Securities and Exchange Commission (the “SEC”) from time to time, should be considered in evaluating our business and prospects. Many of these factors are beyond our reasonable control. In addition, we operate in a highly competitive and rapidly changing environment, and, therefore, new risk factors can arise and be present without market participants like us knowing until a substantial amount of time has passed. It is not possible for management to predict all such risk factors, assess the impact of all such risk factors on our business nor estimate the extent to which any individual risk factor, or combination of risk factors, nor to mitigate them all and therefore they may cause results to differ materially from those contained in any forward-looking statement. The forward-looking statements included in this Annual Report on Form 10-K speak only as of the date of this Annual Report on Form 10-K. We do not assume any obligation to update or revise any forward-looking statements, whether as a result of new information, future events or developments, or otherwise, except as may be required by the securities laws. We caution you not to rely on them unduly.

II-VI Incorporated does communicate with securities analysts from time to time and those communications are conducted in accordance with applicable securities laws. Investors should not assume that II-VI Incorporated agrees with any statement or report issued by any analyst, irrespective of the content of the statement or report.

PART I

Item 1. BUSINESS

Definitions

II-VI Incorporated ("II-VI," the "Company," "we," "us," or "our") was incorporated in Pennsylvania in 1971. Our headquarters are located at 375 Saxonburg Boulevard, Saxonburg, Pennsylvania 16056. Our telephone number is 724-352-4455. Reference to "II-VI," the "Company," "we," "us," or "our" in this Annual Report on Form 10-K, unless the context requires otherwise, refers to II-VI Incorporated and its wholly owned subsidiaries. The Company's name is pronounced "Two Six Incorporated." The name II-VI refers to Groups II and VI on the periodic table of elements from which II-VI originally designed and produced infrared optics for high-power CO_2 lasers used in materials processing. We address seven major markets. The majority of our revenues are attributable to the sale of engineered materials and optoelectronic components, devices, and subsystems for the industrial materials processing, optical communications, and aerospace and defense markets. Reference to "fiscal" or "fiscal year" means our fiscal year ended June 30 for the year referenced.

As of June 30, 2019, the Company's operations were organized into three reporting segments: (i) II-VI Laser Solutions, (ii) II-VI Photonics, and (iii) II-VI Performance Products. See below for a more detailed description of each of these segments. In connection with the refinement of our business strategy, the Company has, effective July 1, 2019 realigned its organizational structure into two reporting segments for the purpose of making operational decisions and assessing financial performance: (i) Compound Semiconductors and (ii) Photonic Solutions. The Company will report financial information for these new reporting segments in fiscal 2020 which should provide enhanced visibility and transparency into the operations, business drivers and the value of our enterprise. This change in reporting is to occur beginning with periods commencing July 1, 2019.

The following terms are defined for reference: bismuth telluride ("Bi_2Te_3"); cadmium telluride ("CdTe"); carbon dioxide ("CO_2"); carbon monoxide ("CO"); chemical vapor deposited ("CVD") materials including diamond; dense wavelength division multiplexing ("DWDM"); extreme-ultraviolet ("EUV") lithography; 5th-generation ("5G") wireless; 4th-generation ("4G") wireless; gallium arsenide ("GaAs"); gallium nitride ("GaN"); gigabit Ethernet ("GbE"); gigabit per second ("Gb/s"); high-definition multimedia interface ("HDMI"); indium phosphide ("InP"); infrared ("IR"); intellectual property ("IP"); light detection and ranging ("LiDAR"); liquid crystal ("LC"); liquid crystal on silicon ("LCOS"); nanometers ("nm"); near-infrared ("NIR"); organic light-emitting diode ("OLED"); original equipment manufacturer ("OEM"); optical time domain reflectometer ("OTDR"); radio frequency ("RF"); reconfigurable optical add/drop multiplexer ("ROADM"); research, development, and engineering ("RD&E"); silicon carbide ("SiC"); three-dimensional ("3D"); ultraviolet ("UV"); vertical cavity surface-emitting laser ("VCSEL"); wavelength division multiplexing ("WDM"); wavelength selective switching ("WSS"); zinc selenide ("ZnSe"); and zinc sulfide ("ZnS").

Pending Acquisition of Finisar Corporation

II-VI and Finisar have entered into an Agreement and Plan of Merger, dated as of November 8, 2018 (the "Merger Agreement"). Pursuant to the terms of the Merger Agreement, Mutation Merger Sub Inc., a Delaware corporation and wholly owned subsidiary of II-VI, will be merged with and into Finisar, and Finisar will continue as the surviving corporation in the merger and a wholly owned subsidiary of II-VI (the "Merger").

If the Merger is consummated, Finisar stockholders will be entitled to receive, at their election, consideration per share of common stock of Finisar (the "Finisar Common Stock") consisting of (i) $26.00 in cash, without interest (the "Cash Consideration"), (ii) 0.5546 shares of II-VI common stock (the shares, the "II-VI Common Stock," and the consideration, the "Stock Consideration"), or (iii) a combination of $15.60 in cash, without interest, and 0.2218 shares of II-VI Common Stock (the "Mixed Consideration," and, together with the Cash Consideration and the Stock Consideration, the "Merger Consideration"). The Cash Consideration and the Stock Consideration are subject to proration adjustment pursuant to the terms of the Merger Agreement such that the aggregate Merger Consideration will consist of approximately 60% cash and approximately 40% II-VI Common Stock assuming a per share price of II-VI common stock equal to the price when the Merger Agreement was signed on November 8, 2018, which was $46.88 per share.

At the effective time of the Merger (the "Effective Time"), each option granted pursuant to Finisar's 2005 Stock Incentive Plan, as such plan has been further amended and restated (each, a "Finisar Stock Option"), or portion thereof, that is outstanding and unexercised as of immediately prior to the Effective Time (whether vested or unvested) will be cancelled, terminated and converted into the right to receive an amount of Mixed Consideration that would be payable to a holder of such number of shares of Finisar Common Stock equal to the quotient of (i) the product of (a) the excess, if any, of $26.00 over the exercise price per share of such Finisar Stock Option *multiplied by* (b) the number of shares of Finisar Common Stock subject to such Finisar Stock Option, *divided by* (ii) $26.00.

At the Effective Time, each restricted stock unit granted pursuant to Finisar's 2005 Stock Incentive Plan, as such plan has been further amended and restated (each, a "Finisar Restricted Stock Unit"), or portion thereof , that is outstanding and subject to a performance-based vesting condition that relates solely to the value of Finisar Common Stock will, to the extent such Finisar Restricted Stock Unit vests in accordance with its terms in connection with the Merger (the "Participating RSUs"), be cancelled and extinguished and converted into the right to receive the Cash Consideration, the Stock Consideration or the Mixed Consideration at the election of the holder of such Participating RSUs, subject to proration adjustment.

At the Effective Time, each Finisar Restricted Stock Unit (or portion thereof) that is outstanding and unvested, does not vest in accordance with its terms in connection with the Merger and is either (x) subject to time-based vesting requirements only or (y) subject to a performance-based vesting condition other than the value of Finisar Common Stock will be assumed by II-VI (each, an "Assumed RSU"). Each Assumed RSU will be subject to substantially the same terms and conditions as applied to the related Finisar Restricted Stock Unit immediately prior to the Effective Time, including the vesting schedule (and the applicable performance-vesting conditions in the case of a grant contemplated by clause (y) of the preceding sentence) and any provisions for accelerated vesting applicable thereto, except that the number of shares of II-VI Common Stock subject to each Assumed RSU will be equal to the product of (i) the number of shares of Finisar Common Stock underlying such unvested Finisar Restricted Stock Unit award as of immediately prior to the Effective Time multiplied by (ii) the sum of (a) 0.2218 plus (b) the quotient obtained by dividing (1) $15.60 by (2) the volume weighted average price per share of II-VI Common Stock (rounded to the nearest cent) on the Nasdaq Global Select Market for the ten consecutive trading days ending on (and including) the third trading day immediately prior to the Effective Time (with the resulting number rounded down to the nearest whole share).

II-VI filed with the SEC a registration statement on Form S-4 relating to the Merger, and that registration statement became effective in accordance with the provisions of Section 8(a) of the Securities Act of 1933, as amended, on February 7, 2019. Shareholders of II-VI and stockholders of Finisar voted to approve proposals related to the Merger at special meetings held on March 26, 2019 by the respective companies.

The waiting period under the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended, with respect to the Merger has expired without a request for additional information. Other regulatory approvals applicable to the Merger have been obtained in Germany, Mexico and Romania.

The completion of the Merger is subject to the satisfaction or waiver of certain additional customary closing conditions, including review and approval of the Merger by the State Administration for Market Regulation in China. The Company is planning to refile with the State Administration for Market Regulation in China, extending the approval period. Subject to the satisfaction or waiver of each of the closing conditions, II-VI and Finisar expect that the Merger will be completed in the second half of calendar 2019. However, it is possible that factors outside the control of both companies could result in the Merger being completed at a different time or not at all.

On November 8, 2018, in connection with its entry into the Merger Agreement, II-VI entered into a commitment letter (together with a related fee letter) with Bank of America, N.A., which was subsequently amended and restated on December 7, 2018 and on December 14, 2018 (together with one or more related fee letters, the "Commitment Letter"). Subject to the terms and conditions set forth in the Commitment Letter, the lender parties thereto severally committed to provide 100% of up to $2.425 billion in aggregate principal amount of senior secured credit facilities of II-VI.

On March 4, 2019, II-VI entered into a Credit Agreement, dated as of March 4, 2019 (as amended, the "New Credit Agreement"), by and among the Company, Bank of America, N.A., as Administrative Agent, Swing Line Lender and an L/C Issuer, and the other lenders party thereto. II-VI also entered into Amendment No. 1 to Credit Agreement, dated as of May 24, 2019, by and among the Company, Bank of America, N.A., as Administrative Agent, and the other lenders party thereto, which includes the final results of the syndication of the Term A Facility (as defined below). Pursuant to the terms and subject to the conditions therein, the New Credit Agreement provides for senior secured financing of $1.705 billion in the aggregate, consisting of (i) a five-year senior secured first-lien term A loan facility in an aggregate principal amount of $1.255 billion (the "Term A Facility") and (ii) a five-year senior secured first-lien revolving credit facility in an aggregate principal amount of $450.0 million (the "Revolving Credit Facility" and together with the Term A Facility, the "New Senior Credit Facilities"). The New Credit Agreement also provides for a letter of credit sub-facility not to exceed $25.0 million and a swing loan sub-facility initially not to exceed $20.0 million, subject to adjustment in accordance with the terms of the New Credit Agreement. II-VI anticipates using the proceeds from the Term A Facility, together with a separately committed term B loan facility in an aggregate principal amount of up to $720.0 million (the "Term B Facility") and cash and short-term investments of II-VI and Finisar, to pay the cash portion of the merger consideration payable in connection with the Merger and related fees and expenses. II-VI currently does not intend to draw on the Revolving Credit Facility in order to fund the cash portion of the merger consideration payable in connection with the Merger.

The funding obligations of the lenders under the New Senior Credit Facilities are subject to certain currently unsatisfied conditions, including the consummation of the Merger. Accordingly, no borrowings are currently outstanding under the New Senior Credit Facilities, and II-VI currently is not able to borrow under the New Senior Credit Facilities. Further, II-VI expects that the New Credit Agreement will be amended prior to the consummation of the Merger to reflect syndication of the Term B Facility and to finalize certain other terms in the New Credit Agreement. Upon the consummation of the Merger, the New Senior Credit Facilities, governed by the New Credit Agreement as it may be amended as of such time, will be used (i) to refinance in full the Amended Credit Facility (as defined in Note 9 to the Company's Consolidated Financial Statements included in Item 8 of this Annual Report on Form 10-K) and (ii) on or after the date of the consummation of the Merger, to repay amounts owed in connection with Finisar's outstanding convertible notes, currently in an aggregate principal amount outstanding of $575.0 million, including with the proceeds of a portion of the Term A Facility which will be available to II-VI for a certain period after the initial funding under the New Senior Credit Facilities.

Unless and until the Merger is consummated and the other currently unsatisfied conditions to the funding obligations of the lenders under the New Senior Credit Facilities are satisfied or waived, the Amended Credit Facility remains in effect in accordance with its terms.

General Description of Business

We develop, manufacture, and market engineered materials, optoelectronic components, and devices for precision use in industrial materials processing, optical communications, aerospace and defense, consumer electronics, semiconductor capital equipment, life sciences, and automotive applications and markets. We use advanced engineered materials growth technologies coupled with proprietary high-precision fabrication, microassembly, optical thin-film coating, and electronic integration to manufacture complex optoelectronic devices and modules. Our products are deployed in a variety of applications, including (i) laser cutting, welding, and marking operations; (ii) 3D sensing consumer applications; (iii) optical, data, and wireless communications products; (iv) strategic aerospace and defense applications including intelligence, surveillance, and reconnaissance; (v) semiconductor processing and tooling; and (vi) thermoelectric cooling and power-generation solutions.

Through RD&E and acquisitions, II-VI has expanded its portfolio of materials. We believe that the materials we grow and fabricate are differentiated by one or a combination of unique optical, electrical, thermal, and mechanical properties. II-VI's optics are shaped by precision surfacing techniques to meet the most stringent requirements for flat or curved geometries, functionalized with smooth or structured surfaces, or with patterned metallization. Proprietary processes developed at our global optical coating centers differentiate our products' durability against high-energy lasers and extreme operating environments. Optical coatings also provide the desired spectral characteristics ranging from the ultraviolet to the far-infrared. II-VI leverages these capabilities to deliver miniature- to large-scale precision optical assemblies, including those in combination with thermal management components, integrated electronics, and/or software.

II-VI also offers a broad portfolio of compound semiconductor lasers that are used in a variety of applications in most of our end markets. These compound semiconductor lasers enable high-power lasers for materials processing; optical signal amplification in terrestrial and submarine communications networks; high-bit-rate server connectivity between and within datacenters; and fast and accurate measurements in biomedical instruments, consumer electronics, and optical communications network monitoring.

II-VI continues to work to perfect its operational capabilities, develop next-generation products, and invest in new technology platforms. With a strategic focus on fast-growing and sustainable markets, II-VI pursues its vision of enabling the world to be safer, healthier, closer, and more efficient.

Information Regarding Market Segments and Foreign Operations

Financial data regarding our revenues, results of operations, industry segments, and international sales for the three years ended June 30, 2019, are set forth in the Consolidated Statements of Earnings and in Note 14 to the Company's Consolidated Financial Statements included in Item 8 of this Annual Report on Form 10-K and are incorporated herein by reference. We also discuss certain Risk Factors set forth in Item 1A – Risk Factors of this Annual Report on Form 10-K related to our foreign operations, which are incorporated herein by reference.

Bookings and Backlog

We define our bookings as customer orders received that are expected to be converted to revenues over the next 12 months. The Company records only those orders which are expected to be converted into revenues within 12 months from the end of the reporting period. Bookings are adjusted if changes in customer demands or production schedules cause the expected time of a delivery to extend beyond 12 months. For the fiscal year ended June 30, 2019, our bookings were approximately $1.4 billion, compared with bookings of approximately $1.2 billion for the fiscal year ended June 30, 2018.

We define our backlog as bookings that have not been converted to revenues by the end of the reporting period. As of June 30, 2019, our backlog was approximately $500 million, compared with approximately $450 million as of June 30, 2018.

Global Operations

II-VI is headquartered in Saxonburg, PA, with RD&E, manufacturing, and sales facilities worldwide. Our U.S. production and research and development operations are located in Pennsylvania, California, New Jersey, Texas, Mississippi, Massachusetts, Connecticut, Delaware, New York, Florida, Ohio, Arizona, Colorado, and Illinois, and our non-U.S. production operations are based in China, Singapore, Vietnam, the Philippines, Germany, Switzerland, and the United Kingdom. We also utilize contract manufacturers and strategic suppliers. In addition to sales offices at most of our manufacturing sites, we have sales and marketing subsidiaries in Hong Kong, Japan, Germany, China, Switzerland, Belgium, the United Kingdom, Italy, South Korea, and Taiwan. Approximately 70% of our revenues for the fiscal year ended June 30, 2019, were generated from sales to customers outside of the United States.

Employees

The table below summarizes the number of our employees as of June 30, 2019, in the main functions. We have a long-standing practice of encouraging active employee participation in areas of operations and quality management. We believe our relations with our employees are good. We reward substantially all our employees with some form of variable compensation based on achievement of performance goals. There are approximately 236 employees located in the United States and the Philippines who are covered under collective bargaining agreements. The Company's collective bargaining agreement in the Philippines expired in June 2019, and the Company is in the process of negotiating a new collective bargaining agreement. The collective bargaining agreement covering certain U.S.-based employees expires in January 2021. There are 735 employees of II-VI Photop in China who work under contract manufacturing arrangements for customers of the Company.

	Number of employees	**Percent of total**
Direct production	9,778	78%
Research, development, and engineering	1,707	14%
Sales, marketing, administration, finance, and supporting services	1,002	8%
Total:	**12,487**	**100%**

Manufacturing Processes

Our success in developing and manufacturing many of our products depends on our ability to manufacture and to tailor the optical and physical properties of technically challenging materials and components. The ability to produce, process, and refine these complex materials and to control their quality and in-process yields is an expertise of the Company that is critical to the performance of our customers' subsystems and systems. In the markets we serve, there are a limited number of high-quality suppliers of many of the components we manufacture, and there are very few industry-standard products.

Our network of worldwide manufacturing sites allows us to manufacture our products in regions that provide cost-effective and risk management advantages. We employ numerous advanced manufacturing technologies and systems at our manufacturing facilities. These include metal–organic chemical vapor deposition and molecular beam epitaxy reactors, automated computer numeric control optical fabrication, high-throughput thin-film coaters, nanoprecision metrology, and custom-engineered automated furnace controls for crystal growth processes. Manufacturing products for use across the electromagnetic spectrum requires the capability to repeatedly produce products with high yields to atomic tolerances. II-VI continuously updates its comprehensive quality management systems that feature manufacturing quality best practices. II-VI is committed to delivering products within specification, on time, and with high quality, with a goal of fully satisfying customers and continually improving.

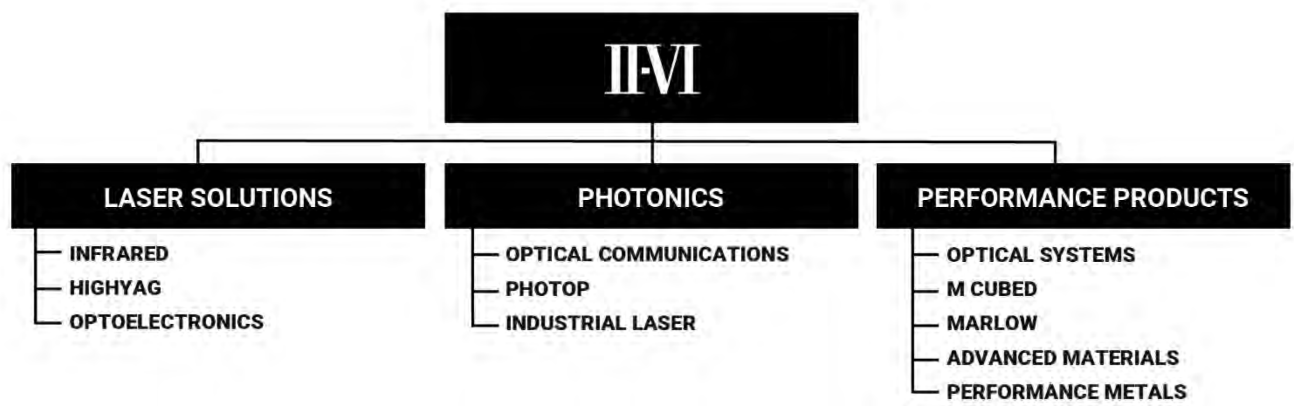
Sources of Supply

Among the major feed stock and raw materials we use are zinc, selenium, ZnSe, ZnS, hydrogen selenide, hydrogen sulfide, arsine, phosphine, hydrogen, silon, tellurium, yttrium oxide, aluminum oxide, iridium, platinum, bismuth, silicon, thorium fluoride, antimony, carbon, graphite, GaAs, InP, copper, germanium, molybdenum, quartz, optical glass, and diamond.

The continued high quality of and access to these materials is critical to the stability and predictability of our manufacturing yields. We test materials at the onset and throughout the production process. Additional research and capital investment may be needed to better define future material specifications. We have not experienced significant production delays due to shortages of materials. However, we do occasionally experience problems associated with vendor-supplied materials not meeting contract specifications for quality or purity. As discussed in greater detail in Item 1A – Risk Factors of this Annual Report on Form 10-K, significant failure of our suppliers to deliver sufficient quantities of necessary high-quality materials to our specifications on a timely basis could have a materially adverse effect on our results of our operations.

Business Units

As of June 30, 2019, the Company's organizational structure is divided into three reporting segments for the purpose of making operational decisions and assessing financial performance: (i) II-VI Laser Solutions, (ii) II-VI Photonics, and (iii) II-VI Performance Products. These segments, and the business units within the segments, are reflected in the organizational chart below:



II-VI Laser Solutions designs, manufactures, and markets optical and electro-optical components and materials sold under the II-VI Infrared brand name that are used primarily in high-power CO_2 lasers, fiber-delivered beam delivery systems, and processing tools; direct-diode lasers for industrial use sold under the II-VI HIGHYAG brand name. II-VI Laser Solutions also manufactures compound semiconductor epitaxial wafers under the II-VI EpiWorks brand name for applications in optical components, wireless devices, and high-speed communications systems; and 6-inch gallium arsenide wafers allowing for the production of high-performance lasers, optoelectronics, and integrated circuits in high volume under the II-VI Laser Enterprise, II-VI EpiWorks, II-VI Compound Semiconductor Ltd., and II-VI OptoElectronic Devices brand names.

II-VI Photonics manufactures crystal materials, optics, microchip lasers, and optoelectronic modules for use in optical communications networks and other diverse consumer, life sciences, and commercial applications. In addition, the segment also manufactures pump lasers, optical isolators, optical amplifiers, and micro-optics for optical amplifiers for both terrestrial and submarine applications within the optical communications market; direct-diode laser modules, subsystems, and systems sold under the II-VI Suwtech and II-VI DIRECTPHOTONICS brand names; and super-hard materials processing laser systems sold under the II-VI LASERTECH brand name.

II-VI Performance Products designs, manufactures, and markets infrared optical components and high-precision optical assemblies for aerospace and defense, medical, and commercial laser imaging applications. In addition, the segment designs, manufactures, and markets unique silicon carbide engineered materials for thermoelectric devices and subsystems for SiC applications servicing the semiconductor equipment, aerospace and defense, communications, automotive, and life science markets.

II-VI's segments are organized by business unit at the group or division level. Each of these business units develops and markets products as described below.

	Group/Division:	Our Products:
II-VI Laser Solutions	II-VI Infrared	• Laser optics and accessories for CO_2 lasers used in materials processing, semiconductor, and life sciences • High-power fiber and direct-diode laser optics • Infrared thermal imaging optics and assemblies • II-VI compound crystalline materials production including ZnSe, ZnS, ZnS multispectral, and CVD diamond • 1 µm laser optics and consumables • Anti-reflection diamond overcoat
	II-VI HIGHYAG	• Laser processing heads and beam delivery systems for laser materials processing with fiber lasers, disk lasers, and diode lasers
	II-VI OptoElectronics	• High-power semiconductor lasers and laser bars enabling fiber and direct-diode lasers for materials processing, medical, defense, consumer, and printing applications • VCSELs for optical interconnects and sensing • VCSELs for 3D sensing in consumer electronics and automotive applications • RF devices for communications • GaAs-based RF electronic devices • III-V epitaxial wafers to enable higher-performance photonic and RF components for consumer, communications, network, and mobile applications

Segment:	Group/Division:	Our Products:
II-VI Photonics	II-VI Optical Communications	• Products and solutions that enable high-bit-rate interconnects for datacenters and communications service providers, datacenter interconnects, ROADM systems, and subsea fiberoptic transmission
	II-VI Photop	• Fiber optics and precision optics used in projection and displays; crystal materials and components for optical communications; high-power UV, visible, and NIR optics for industrial lasers; filters and assemblies for life sciences as well as for sensors, instrumentation, and semiconductor equipment
	II-VI Industrial Laser	• Laser heads and modules; Q-switched laser modules; high-power, uncooled pump laser modules; laser solutions for super-hard materials processing; high-brightness direct-diode laser engines
II-VI Performance Products	II-VI Optical Systems	• Precision optical assemblies, objectives, infrared optics, thin-film coatings, and optical materials • Optical solutions to critical and complex design, engineering, and production challenges in defense, aerospace, and commercial industries
	II-VI M Cubed	• Advanced ceramic and metal-matrix composite products for semiconductor capital equipment, flat-panel displays, industrial and optical equipment, and defense applications
	II-VI Marlow	• Thermoelectric components, subassemblies, and systems for heating, cooling, temperature tuning, thermal cycling, and power generation in aerospace, defense, medical, industrial, automotive, consumer, telecommunications, and energy-production markets
	II-VI Advanced Materials	• SiC and advanced semiconductor materials for high-frequency and high-power electronic device applications in defense, telecommunications, automotive, and industrial markets
	II-VI Performance Metals	• Specialty refining, recycling, and materials-recovery services for high-purity rare metals such as selenium and tellurium, as well as related chemical products such as tellurium dioxide, for optics, photovoltaics, semiconductors, thermoelectric coolers, metallurgy, agriculture, and industrial applications

Our Markets

Our market-focused businesses are organized by technology and products. Our businesses are composed of the following primary markets: communications, materials processing, aerospace and defense, semiconductor capital equipment, life sciences, consumer electronics, and automotive.

Communications Market

II-VI's optical communications products and technologies enable the next generation of high-speed optical transmission systems, networks, and datacenter solutions necessary to meet the accelerating global bandwidth demand. At the core of both terrestrial and undersea optical networks, our market-leading 980 nm pump lasers boost the power of the optical signal in the fiber optic cable at intervals along the way to enable a larger number of high-speed signals to be transmitted over longer distances. Our latest generation of 980 nm pump lasers along with miniature tunable filters and hybrid passives is part of our ultracompact family of components critical to a new generation of small-size, long-reach DWDM transmission modules operating at 100, 200, and 400 Gb/s.

Customers continue to rely on us for our industry-leading optical amplification and embedded monitoring solutions for their next-generation ROADM systems to compensate for inherent signal loss and to monitor signal integrity. Our proprietary OTDR modules allow systems to automatically detect and pinpoint issues along the transmission path in real time. The accelerating adoption of applications such as cloud computing is driving the rapid growth of datacenter buildouts. Our high-speed 25 Gb/s VCSELs enable intra-datacenter transceivers to transmit and receive signals. Our miniature WDM thin-film filter assemblies are used to increase the bandwidth within 100 GbE transceivers by combining wavelengths at the transmitter end and separating them out at the receiver end.

In mobile wireless applications, II-VI supplies base SiC substrates to customers who manufacture RF power amplifier devices that are embedded in remote radio heads in 4G wireless base stations to boost the power of the RF signal before it reaches the antenna. These devices are also widely expected to be embedded in next-generation active antennas for 5G wireless, where multiple devices per antenna will be required to enable higher bandwidth. SiC has a high number of intrinsic physical and electronic advantages, such as high thermal conductivity, that enables it to operate at high power levels and still dissipate the excess heat generated.

Materials Processing Market

Our industrial laser optics and solutions for the materials processing market remain in strong demand. There continues to be a steady global demand to support existing installations and new deployments of CO_2 and fiber laser systems. Our vertically integrated and market-leading ZnSe optics and components, due to their inherent low loss at around 10-micron wavelength, have enabled high-power CO_2 laser systems for many decades and remain critical to the steady stream of new deployments as well as to continued operation, serving as replacement optics for the installed base of CO_2 lasers. II-VI continues to introduce products that address new and growing applications for low-power CO_2 lasers, such as cutting textiles, leather, wood, and other organic materials, for which the CO_2 laser's 10-micron wavelength is ideally suited. CO_2 lasers are also at the core of EUV lithography systems, which are now emerging on the market to enable a new generation of smaller and more powerful personal integrated circuits for internet of things computing devices.

Over the past several years, fiber laser-based systems operating at 1-micron wavelength in pulsed or continuous mode have taken a central role in nearly all materials processing segments, especially for precision machining such as marking and micro-drilling. From the laser chips that generate the input optical power to the beam delivery systems that direct the output optical power to the target, II-VI supplies a broad set of laser optics and fused fiber products that enable many functions within these systems. The same set of II-VI products is also at the core of existing and emerging direct-diode laser systems. II-VI is also driving innovation with a direct-diode laser engine small enough to be mounted on a robotic arm so that the end user can apply square beams directly to the workpiece at wavelengths optimized for aluminum processing.

II-VI's broad portfolio of coated optics and crystal materials serve all of these growing laser markets.

Aerospace and Defense Market

II-VI aerospace and defense optical products and technologies enable targeting, night vision, and navigation as well as intelligence, surveillance, and reconnaissance systems. Moreover, our recently acquired optical beam combining and directing technologies, along with our fiber laser components, are enabling High Energy Laser (HEL) systems and applications.

Multiple fighter jets are equipped with our large-area sapphire windows that surround advanced electro-optical targeting and imaging systems. Infrared domes are used on missiles with infrared guidance systems ranging from small human-portable designs to larger designs mounted on helicopters, fixed-wing aircraft, and ground vehicles. High-precision domes are an integral component of a missile's targeting system, providing efficient tactical capability while serving as a multi-functional protective cover for its internal components.

Rotary and fixed-wing aircraft also use missile warning systems to protect against the threat of shoulder-fired human-portable missiles. Our competencies in materials growth for UV crystals and our optical assembly capabilities provide significant support to these common missile warning systems. A key attribute of several of these systems is the ability to filter electromagnetic interference using microfine conductive mesh patterns. This technology is also applied to non-optical applications for absorbing and transmitting energy from the surfaces of aircraft and missiles.

Many aerospace and defense systems employ laser designation and range-finding capabilities supported by our semiconductor laser bars and solid state laser host crystals and laser optics, all manufactured in-house, and benefit from our competency in short-wave infrared and visible optics. Our thermoelectric coolers are used to increase thermal imaging sensitivity or to maintain a constant window temperature in various visible and infrared applications for night vision and sighting applications.

We provide a range of battlefield-ready technologies for soldier equipment and specifically designed variants for law enforcement. Our precision patterned reticles can be embedded in rifle scopes. Our reaction-bonded boron carbide materials are shaped into torso plates and employed as in-aircraft cabin and protective body armor. Our thermoelectric coolers are used to regulate the soldier's body heat. They are also used to convert heat produced by battlefield fuel burners into electrical power, for example, to extend battery life on the battlefield.

We maintain engineering and manufacturing facilities in the United States with strictly controlled access that are dedicated to our U.S. government supported contracts.

Semiconductor Capital Equipment Market

Semiconductor capital equipment requires advanced materials to meet the need for tighter tolerances, enhanced thermal stability, faster wafer transfer speeds, and reduced stage settling times. Our metal-matrix composites and reaction-bonded ceramics enable these applications, thanks to their optimum combination of light weight, strength, hardness, and coefficient of thermal expansion. Our reaction-bonded SiC materials are used to manufacture wafer chucks, lightweight scanning stages, and high-temperature corrosion-resistant wafer support systems. Our cooled SiC mirrors and precision patterned reticles are used in the illumination systems of lithography tools.

In the emerging market of EUV lithography systems, CO_2 lasers are used to generate extreme-ultraviolet light. These CO_2 lasers and beam delivery systems leverage our broad portfolio of CO_2 laser optics, CdTe modulators, and high-power damage-resistant polycrystalline CVD diamond windows to route the powerful laser beam to a tin droplet from which EUV light will emanate. Due to its very high mechanical and thermal performance characteristics, our reaction-bonded SiC is used in structural support systems that are integral to EUV lithography optics to meet critical requirements for optical system stability.

Life Sciences Market

The majority of our business in the life sciences end market is in analytical tools. Many analytical tools found in modern biotech laboratories are based on some form of interaction with light. This applies to flow cytometry, cell sorting, confocal microscopy, DNA genome sequencing, Raman spectroscopy, fluorescence spectroscopy, and particle sizing, to name a few. Our multicolored laser engines along with our broad portfolio of application-specific optics, filters, and gratings are embedded in these analytical tools. We also supply objective lenses, precision patterned reticles, and assemblies for microscopes.

Genome sequencing involves temperature-cycling DNA in flow cells with a high degree of temperature uniformity and precision. We believe that our thermal engines are the state of the art in chiller technology, and they achieve what we believe to be industry-leading temperature control and uniformity across large areas. Our green lasers are used to excite the fluorescence of DNA to reveal its structure. Our flow cells are micromachined with a high degree of precision to ensure the smooth flow of sample fluids undergoing analysis. Our thermal engines are also used in a multitude of other biomedical applications, for example, to measure substance concentration in complex mixtures, protect blood supplies, and perform heating- and cooling-based physical therapy.

Clinical procedures are increasingly performed with tools that embed our lasers and optics. For example, our semiconductor laser bars are used in hair and wrinkle removal procedures, and our custom-designed lens assemblies are used for laser eye surgery. We continue to leverage our core laser, optics, and temperature-control expertise into new applications to grow our business in the life sciences.

Consumer Electronics Market

II-VI manufactures low-cost VCSELs, VCSEL arrays, and filters for the consumer electronics market. Our VCSEL products leverage our world-class 6-inch GaAs platform, combining our epitaxial wafer growth and wafer fabrication capabilities.

Our VCSELs, unlike many on the market, have already been designed into consumer products such as the computer mouse as well as for menu navigation in smart phones and vehicle steering wheels. Our VCSELs are also widely deployed in datacenters and in the emerging market for HDMI optical cables. This expertise in VCSEL technology is being leveraged for the emerging 3D sensing market. With our acquisitions of 6-inch epitaxy and wafer capabilities, we have invested significantly to round out our capacity expansion.

Automotive Market

Power-conversion electronics for high-efficiency electric vehicles need a combination of high power density, high efficiency, and high-temperature operation that is only afforded by advanced materials systems based on SiC substrates. Our SiC substrates are available in large diameters and have what we believe to be best-in-class quality and low defect levels.

Our thermoelectric modules are used to cool batteries to extend their operating life. They are also more efficient than resistive heaters when used in heated car seats and extend an electric vehicle's range of travel in cold environments.

To operate safely, self-driving cars will rely on control systems that are informed by a comprehensive number of sensors. One such sensor is based on LiDAR, which employs semiconductor lasers to properly identify and measure the distance to obstacles ahead. Our GaAs-based semiconductor laser platform, which already enables a broad portfolio of products in communications and materials processing, is now being scaled further for consumer electronics and will be leveraged to deliver a highly reliable and cost-effective laser product for this emerging market.

Marketing and Sales

We market our products through a direct sales force and through representatives and distributors around the world. Our market strategy is focused on understanding our customers' requirements and building market awareness and acceptance of our products. New products are continually being developed and introduced to our new and established customers in all markets.

The Company has centralized its worldwide marketing and sales functions across the Company's business units. Sales offices have been strategically established to best serve and distribute products to our worldwide customer base. There are significant cooperation, coordination, and synergies among our business units, which capitalize on the most efficient and appropriate marketing channels to address diverse applications within our markets.

Our sales force develops effective communications with our OEM and end-user customers worldwide. Products are actively marketed through targeted mailings, telemarketing, select advertising, attendance at trade shows, and customer partnerships. Our sales force includes a highly trained team of applications engineers to assist customers in designing, testing, and qualifying our products as key components of our customers' systems. As of June 30, 2019, we employed approximately 273 individuals in sales, marketing, and support.

We do business with a number of customers in the defense industry, who in turn generally contract with a governmental entity, typically a U.S. government agency. Most governmental programs are subject to funding approval and can be modified or terminated without warning by a legislative or administrative body.

Customers

The representative groups of customers by segments are as follows:

Segment:	Group/Division:	Our Customers Are:	Representative Customers:
II-VI Laser Solutions	II-VI Infrared	OEM and system integrators of industrial, medical, and aerospace and defense laser systems; laser end users who require replacement optics for their existing laser systems.	• TRUMPF GmbH + Co. KG • Bystronic Laser AG • Coherent Inc.
	II-VI HIGHYAG	Automotive manufacturers, laser manufacturers, and system integrators.	• Ford Motor Company • Laserline GmbH
	II-VI OptoElectronics	Manufacturers of industrial laser components, optical communications equipment, and consumer technology applications.	• Laserline GmbH • Wuhan Raycus Fiber Laser Technologies Co. Ltd.
II-VI Photonics	II-VI Optical Communications	Worldwide network system and subsystem providers of telecommunications, data communications, and CATV.	• Ciena Corporation • Cisco Systems Inc. • Fujitsu Network Communications • Acacia Communications Inc. • Nokia Solutions and Networks
	II-VI Photop	Global manufacturers of industrial and medical laser optics and crystals including commercial and consumer products used in a wide array of instruments, sensors, fiber lasers, displays, and projection devices.	• Corning Incorporated • Coherent Inc • Han's Laser Technology Industry Group Co. Ltd. • Finisar Corp.
	II-VI Laser Systems	OEM and subsystem integrators of aiming, machine vision, biomedical instruments, and fiber lasers; laser cutting machines for super-hard materials.	• BGI Complete Genomics, Shenzhen Co. Ltd. • TRUMPF GmbH + Co. KG
II-VI Performance Products	II-VI Optical Systems	Manufacturers of equipment and devices for aerospace, defense, and commercial markets.	• Lockheed Martin Corporation
	II-VI M Cubed	Manufacturers and developers of integrated-circuit capital equipment for the semiconductor capital equipment industry.	• ASML Holding NV • Carl Zeiss AG • Nikon Corporation • KLA-Tencor Corporation
		Manufacturers and developers of products and components for various defense and industrial markets.	• Corning Incorporated
	II-VI Marlow	Manufacturers and developers of equipment and devices for defense, space, telecommunications, medical, industrial, automotive, personal comfort, and commercial markets.	• Lumentum Operations LLC • Finisar Corp.
	II-VI Advanced Materials	Manufacturers and developers of equipment and devices for high-power RF electronics and high-power, voltage-switching, and power-conversion systems for both commercial and aerospace and defense applications.	• Sumitomo Electric Device Innovations Inc. • Showa Denko KK • STMicroelectronics • IQE PLC • Infineon Technologies AG
	II-VI Performance Metals	Primary mineral processors, refiners, and providers of specialized materials used in laser optics, photovoltaics, semiconductors, thermoelectric coolers, metallurgy, and industrial products.	• Aurubis AG

Competition

II-VI is a global leader in many of its product families. We compete partly on the basis of our reputation for offering highly engineered products, product and technology roadmaps, intellectual property, ability to scale, quality, on-time delivery, technical support, and pricing. We believe that we compete favorably with respect to these factors and that our vertical integration, manufacturing facilities and equipment, experienced technical and manufacturing employees, and worldwide marketing and distribution channels provide us with competitive advantages. The representative groups of our competitors by segment are as follows:

Segment:	Areas of Competition:	Competitors:
II-VI Laser Solutions	Infrared laser optics	• Sumitomo Electric Industries Ltd. • MKS Instruments Inc. • Wavelength Opto-Electronic Pte. Ltd. • Sigma Koki Co. Ltd.
	Automated equipment and laser materials processing tools to deliver high-power 1-micron laser systems	• Optoskand AB • Precitec GmbH & Co. KG • Mitsubishi Cable Industries Ltd.
	Biomedical instruments for flow cytometry, DNA sequencing, and fluorescence microscopy	• Coherent Inc. • Pavilion Integration Corporation • Shimadzu Corporation
	Semiconductor laser diodes for the industrial and consumer markets	• Lumentum Operations LLC • Finisar Corporation • Broadcom Ltd. • ams AG • Jenoptik AG • OSRAM Licht AG • Sony Corporation • Hamamatsu Photonics KK
II-VI Photonics	Optics, optical components, modules, and subsystems for optical communications	• Molex LLC • Lumentum Operations LLC
	Optical and crystal components, thin-film coatings, and subassemblies for lasers and metrology instruments	• Casix Inc. • CASTECH Inc. • Hellma GmbH & Co. KG • Research Electro-Optics Inc. • IDEX Corporation
II-VI Performance Products	Infrared optics for aerospace and defense applications	• In-house fabrication and thin-film coating capabilities of major aerospace and defense customers
	Thermoelectric components, subassemblies, and systems	• Komatsu Ltd. • Laird PLC • Ferrotec Corporation
	Metal-matrix composites and reaction-bonded ceramic products	• Berliner Glas KGaA Herbert Kubatz GmbH & Co. • CoorsTek Inc. • Japan Fine Ceramics Co. Ltd.
	Single-crystal SiC substrates	• Cree Inc. • Dow Corning Corporation • SICC Co. Ltd. • TankeBlue Semiconductor Co. Ltd. • ROHM Co. Ltd.
	Refining and materials-recovery services for high-purity rare metals	• Vital Materials Co. Ltd. • 5N Plus Inc. • RETORTE GmbH Selenium Chemicals & Metals

In addition to competitors who manufacture products similar to those we produce, there are other technologies and products available that may compete with our technologies and products.

Our Strategy

Our strategy is to grow businesses with world-class engineered materials capabilities to advance our current customers' strategies, penetrate new markets through innovative technologies and platforms, and enable new applications in large and growing markets. A key strategy of ours is to develop and manufacture high-performance materials and, in certain cases, components from those materials that are differentiated from those produced by our competitors. We focus on providing components that are critical to the heart of our customers' products serving the applications mentioned above.

We have grown the number and size of our key accounts substantially. Now, a significant portion of our business is based on sales orders with market leaders, which enable our forward planning and production efficiencies. We intend to continue capitalizing and executing on this proven model, participating effectively in the growth of the markets discussed above, and continuing our focus on operational excellence as we execute our primary business strategies:

Key Business Strategies:	Our Plan to Execute:
Identify New Products and Markets	Identify new technologies, products, and markets to meet evolving customer requirements for high-performance engineered materials through our dedicated RD&E programs to increase new product revenue and maximize return on investment.
Balanced Approach to Research and Development	Internally and externally funded RD&E expenditures, targeting an overall investment of between 10–15% of revenues depending on the nature of the investment in terms of technology platforms or products.
Leverage Vertical Integration	Combine RD&E and manufacturing expertise, operating with a bias toward components and production machines, reducing cost and lead time to enhance competitiveness, time to market, profitability, and quality, and enabling our customers to offer competitive products.
Investment in Scalable Manufacturing	Strategically invest in, evaluate, and identify opportunities to consolidate and automate manufacturing operations worldwide to increase production capacity, capabilities, and cost-effectiveness.
Enhance Our Performance and Reputation as a Quality and Customer Service Leader	Continue to improve upon our established reputation as a consistent, high-quality supplier of engineered materials and optoelectrical components that are built into our customers' products.
	Execute our global quality transformation process, eliminating costs of nonconforming materials and processes.
Identify and Complete Strategic Acquisitions and Alliances	Identify acquisition opportunities that accelerate our access to emerging, high-growth segments of the markets we serve and further leverage our competencies and economies of scale.

Research, Development, and Engineering

During the fiscal year ended June 30, 2019, the Company continued to identify, invest in, and focus our research and development on new products and platform technologies in an effort to accelerate our organic growth. This approach is managed under a disciplined innovation program that we refer to as the "II-VI Phase Gate Process."

From time to time, the ratio of externally funded contract activity to internally funded contract activity varies due to the unevenness of government-funded research programs and changes in the focus of our internally funded research programs. We are committed to having the right mix of internally and externally funded research that ties closely to our long-term strategic objectives.

We devote significant resources to RD&E programs directed at the continuous improvement of our existing products and processes and to the timely development of new materials, technologies, and products. We believe that our RD&E activities are essential to establishing and maintaining a leadership position in each of the markets we serve. As of June 30, 2019, we employed 1,707 people in RD&E functions. In addition, certain manufacturing personnel support or participate in our research and development efforts on an ongoing basis. We believe this interaction between the development and manufacturing functions enhances the direction of our projects, reducing costs and accelerating technology transfers.

During the fiscal year ended June 30, 2019, we focused our RD&E investments in the following areas:

Segment:	Area of Development:	Our RD&E Investments:
II-VI Laser Solutions	High-power laser diodes and high-volume manufacturing	Focusing on increasing fiber coupled optical output power of multi-emitter modules.
		Developing high-power VCSELs for consumer devices and next-generation, high-speed VCSELs for 3D sensing and datacom applications.
	High power beam delivery	Developing multi-kW beam delivery systems and cables for welding and cutting
	CVD diamond technology	Developing CVD diamond for EUV applications.
		Broadening our portfolio beyond infrared window applications.
II-VI Photonics	Photonics design	Continuing to develop and improve crystal materials, precision optical parts, and laser device components for photonics applications.
	Pump lasers	Continuing to invest in our next-generation GaAs pump laser portfolio and flexible manufacturing footprint to address evolving terrestrial and undersea markets.
		Developing InP growth and processing capability together with associated packaging technology.
	Optical amplifiers and subsystems	Investing and broadening the range of amplifiers and integrated subsystems including ROADMs.
	Wavelength selective switching	Developing LC and LCOS technologies and associated module designs for WSS; investing in manufacturing equipment and the automation platform.
	Optical monitoring	Continuing optical channel monitoring investment.
		Developing OTDRs to monitor the health of the fiber plant.
	Micro-optics manufacturing	Shifting toward smaller, more compact optics and automated assembly platforms and packages.
		Investing in manufacturing equipment for computerized processes.
II-VI Performance Products	SiC technology	Developing advanced SiC substrate growth technologies to support emerging markets in GaN RF and SiC power electronics.
		Continuous improvement to maintain world-class, high-quality, large-diameter substrates and epitaxial wafers.
	Thermoelectric materials and devices	Continuing to develop leading Bi_2Te_3 materials for thermoelectric cooling/heating.
		Focusing on thermoelectric power-generation capability in order to introduce new products to the market.
	Metal-matrix composites and reaction-bonded ceramics	Support industrial customers in developing application-specific wear and thermal-management solutions.
	Fiber laser technologies	Developing high-power fiber laser technologies for aerospace and defense and commercial applications.

The development of our products and manufacturing processes is largely based on proprietary technical know-how and expertise. We rely on a combination of contract provisions, trade secret laws, invention disclosures, and patents to protect our proprietary rights. We

have entered into selective intellectual property licensing agreements. We have asserted in the past, and expect that we will continue to assert, as well as vigorously protect, our intellectual property rights. We have a total of approximately 800 patents globally.

Internally funded research and development expenditures were $139.2 million, $116.9 million, and $96.8 million for the fiscal years 2019, 2018, and 2017, respectively. For these same periods, externally funded research and development expenditures were $14.7 million, $12.7 million, and $8.7 million, respectively, and were included in cost of goods sold in the Consolidated Statements of Earnings.

Export and Import Compliance

We are required to comply with various export/import control and economic sanction laws, including:

- The International Traffic in Arms Regulations administered by the U.S. Department of State, Directorate of Defense Trade Controls, which among other things impose licensing requirements on the export from the United States of certain defense articles and defense services, generally including items that are specially designed or adapted for a military application and/or listed on the United States Munitions List;
- The Export Administration Regulations administered by the U.S. Department of Commerce, Bureau of Industry and Security, which among other things impose licensing requirements on certain dual-use goods, technology, and software, i.e., items that potentially have both commercial and military applications;
- The regulations administered by the U.S. Department of the Treasury, Office of Foreign Assets Control, which implement economic sanctions imposed against designated countries, governments, and persons based on U.S. foreign policy and national security considerations; and
- The import regulations administered by U.S. Customs and Border Protection.

Foreign governments have also implemented similar export and import control regulations, which may affect our operations or transactions subject to their jurisdiction. For additional discussions regarding our import and export compliance, see the discussion set forth in Item 1A – Risk Factors of this Annual Report Form on Form 10-K.

Trade Secrets, Patents, and Trademarks

Our use of trade secrets, proprietary know-how, trademarks, copyrights, patents, contractual confidentiality, and IP ownership provisions help us develop and maintain our competitive position with respect to our products and manufacturing processes. We aggressively pursue process and product patents in certain areas of our businesses, and in certain jurisdictions across the globe. We have entered into selective intellectual property licensing agreements. We have confidentiality and noncompetition agreements with certain personnel. We require that our U.S. employees sign a confidentiality and noncompetition agreement upon commencement of their employment with us.

The design, processes, and specialized equipment utilized in our engineered materials, advanced components, and subsystems are innovative, complex, and difficult to duplicate. However, there can be no assurance that others will not develop or patent similar technology, or that all aspects of our proprietary technology will be protected. Others have obtained patents covering a variety of materials, devices, equipment, configurations, and processes, and others could obtain patents covering technology similar to ours. We may be required to obtain licenses under such patents, and there can be no assurance that we would be able to obtain such licenses, if required, on commercially reasonable terms, or that claims regarding rights to technology will not be asserted that may adversely affect our results of operations. In addition, our research and development contracts with agencies of the U.S. government present a risk that project-specific technology could be disclosed to competitors as contract reporting requirements are fulfilled.

Executive Officers of the Registrant

The executive officers of the Company and their respective ages and positions as of June 30, 2019, are set forth below. Each executive officer listed has been appointed by the Board of Directors to serve until removed or until such person's successor is appointed and qualified.

Name	Age	Position
Vincent D. Mattera, Jr.	63	President and Chief Executive Officer; Director
Mary Jane Raymond	58	Chief Financial Officer and Treasurer and Assistant Secretary
Giovanni Barbarossa	57	Chief Technology Officer and President, II-VI Laser Solutions
Gary A. Kapusta	59	Chief Operating Officer
Jo Anne Schwendinger	63	Chief Legal and Compliance Officer and Secretary
David G. Wagner	56	Vice President, Human Resources

Vincent D. Mattera, Jr. Dr. Mattera initially served as a member of the II-VI Board of Directors from 2000 to 2002. Dr. Mattera joined the Company as a Vice President in 2004 and served as Executive Vice President from January 2010 to November 2013, when he became the Chief Operating Officer. In November 2014, Dr. Mattera became the President and Chief Operating Officer and was reappointed to the Board of Directors. In November 2015, he became the President of II-VI. In September 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 United States, 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, device technology, operations, and markets that are core to II-VI's business and strategy. Dr. Mattera holds a B.S. degree in chemistry from the University of Rhode Island (1979) and a Ph.D. in chemistry from Brown University (1984). He completed the Stanford University Executive Program (1996).

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 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.

Giovanni Barbarossa joined II-VI in 2012 and has been the President, II-VI Laser Solutions, since 2014 and served as the Chief Technology Officer from 2012 through June 30, 2019. Dr. Barbarossa was employed at Avanex Corporation from 2000 through 2009, serving in various executive positions in product development and general management, and 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. degree in Electrical Engineering and holds a Ph.D. in Photonics from the University of Glasgow, U.K.

Gary A. Kapusta joined II-VI in February 2016 and served from then through June 30, 2019 as the Company's Chief Operating Officer. Prior to his employment with the Company, Mr. Kapusta served in various roles at Coca-Cola, including as President and Chief Executive Officer, Coca-Cola Bottlers' Sales & Services LLC; President, Customer Business Solutions; and Vice President, Procurement Transformation, Coca-Cola Refreshments. He joined Coca-Cola following a 19-year career at Agere Systems, Lucent Technologies, and AT&T. Mr. Kapusta graduated from the University of Pittsburgh with B.S. and M.S. degrees in Industrial Engineering and holds an MBA from Lehigh University.

Jo Anne Schwendinger has served as the Company's Chief Legal and Compliance Officer and Secretary since March 2017. Ms. Schwendinger also served as the Company's General Counsel and Secretary from when she joined the Company in March 2017 until November 2017. Prior to her employment with the Company, Ms. Schwendinger practiced law with the firm Blank Rome LLP from August 2016 until February 2017. Previously, Ms. Schwendinger served in various legal roles at Deere & Company from February 2000 until August 2016, including Regional General Counsel–Asia-Pacific and Sub-Saharan Africa and Assistant General Counsel. Ms. Schwendinger holds a bachelor's degree from the Université d'Avignon et des Pays de Vaucluse, a master's degree from the Université de Strasbourg, and a Juris Doctor degree from the University of Pittsburgh Law School.

David G. Wagner has been employed by the Company since 2008 and has been Vice President, Human Resources, since 2011. Prior to his employment with the Company, Mr. Wagner was employed with Owens Corning (NYSE:OC) from 1985 through 2008, serving in various human resource management positions, ultimately becoming Vice President, Human Resources, for Owen Corning's global sales force. Mr. Wagner graduated with a B.S. degree in Human Resources Management from Juniata College in 1985. Mr. Wagner has announced his intention to retire from the Company, to be effective in 2019, at a date to be determined.

Appointment of Walter R. Bashaw II as President Effective July 1, 2019

On June 27, 2019, the Board of Directors of the Company appointed Walter R. Bashaw II as the Company's President, effective July 1, 2019. Dr. Mattera remains the Company's Chief Executive Officer and a member of the Company's Board of Directors.

Mr. Bashaw, 54, has served as the Company's Senior Vice President, Corporate Strategy and Development, Administration since October 2018 and previously served as the Company's Interim General Counsel and Secretary from December 2015 until March 2017. Mr. Bashaw also previously was the Managing Shareholder and a Director of the law firm of Sherrard, German & Kelly, P.C. ("SGK") in Pittsburgh, Pennsylvania, until October 2018 and has been Of Counsel at SGK since October 2018. Mr. Bashaw graduated from The Pennsylvania State University with a B.S. degree in Logistics and also holds a J.D. degree from the University of Pittsburgh School of Law.

Changes in Management Roles Effective July 1, 2019

The Company's Board of Directors also determined on June 27, 2019 that Dr. Barbarossa would be reassigned to the position of Chief Strategy Officer and President of the Compound Semiconductor segment, effective July 1, 2019. The Company's Board of Directors appointed Christopher Koeppen, who most recently served as the Company's Vice President, Laser Systems Group, as the Company's Chief Technology Officer, effective July 1, 2019. Mr. Kapusta, who most recently served as the Company's Chief Operating Officer, was reassigned by the Company's Board of Directors to the position of Chief Procurement Officer, effective July 1, 2019.

Availability of Information

Our internet address is www.ii-vi.com. Information contained on our website is not part of, and should not be construed as being incorporated by reference into, this Annual Report on Form 10-K. We post the following reports on our website as soon as reasonably practical after they are electronically filed with or furnished to the Securities and Exchange Commission ("SEC"): our Annual Reports on Form 10-K, our Quarterly Reports on Form 10-Q, our Current Reports on Form 8-K, and any amendments to those reports or statements filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act. In addition, we post our proxy statements on Schedule 14A related to our annual shareholders' meetings as well as reports filed by our directors, officers, and 10% beneficial owners pursuant to Section 16 of the Exchange Act. In addition, all filings are available via the SEC's website (www.sec.gov). We also make our corporate governance documents available on our website, including the Company's Code of Business Conduct and Ethics, governance guidelines, and the charters for our Board committees. All such documents are located on the Investors page of our website and are available free of charge.

Item 1A. RISK FACTORS

We caution our investors that our performance is subject to risks and uncertainties. The following material risk factors may cause our future results to differ materially from those projected in any forward-looking statement. You should carefully consider these factors, as well as the other information contained in this Annual Report on Form 10-K when evaluating an investment in our securities.

Investments in future markets of potential significant growth may not result in the expected return.

We continue to make investments in programs with the goal of gaining a greater share of end markets using semiconductor lasers and other components including those used for 3D sensing and emerging 5G technology. We cannot guarantee that our investments in capital and capabilities will be sufficient. The potential end markets, as well as our ability to gain market share in such markets, may not materialize on the timeline anticipated or at all. We cannot be sure of the end market price, specification or yield for products

incorporating our technologies. Our technologies could fail to fulfill, partially or completely, our target customers' specifications. We cannot guarantee the end market customers' acceptance of our technologies. Further, we may be unable to fulfill the terms of our contracts with our target customers, which could result in penalties of a material nature, including damages, loss of market share and loss of reputation.

Our competitive position depends on our ability to develop new products and processes.

To meet our strategic objectives, we must develop, manufacture and market new products and continue to update our existing products and processes to keep pace with market developments to address increasingly sophisticated customer requirements. Our success in developing and selling new and enhanced products and processes depends upon a variety of factors including strategic product selection, efficient completion of product design and development, timely implementation of manufacturing and assembly processes, effective sales and marketing, and high-quality and successful product performance in the market.

The introduction by our competitors of products or processes using new developments better or faster than ours could render our products or processes obsolete or unmarketable. We intend to continue to make significant investments in RD&E to achieve our goals. There can be no assurance that we will be able to develop and introduce new products or enhancements to our existing products and processes in a manner which satisfies customer needs or achieves market acceptance. The failure to do so could have a material adverse effect on our ability to grow our business and maintain our competitive position and on our results of operations and/or financial condition.

Global economic downturns may adversely affect our business, operating results and financial condition.

Current and future conditions in the global economy have an inherent degree of uncertainty. As a result, it is difficult to estimate the level of growth or contraction of the global economy as a whole. It is even more difficult to estimate growth or contraction in various parts, sectors and regions of the economy, including the industrial, aerospace and defense, optical communications, telecommunications, semiconductor, and medical and life science markets in which we participate. All aspects of our company forecast depend on estimates of growth or contraction in the markets we serve. Thus, prevailing global economic uncertainties render estimates of future income and expenditures very difficult to make.

Global economic downturns may affect industries in which our customers operate. These changes could include decreases in the rate of consumption or use of our customers' products. Such conditions could have a material adverse effect on demand for our customers' products, and in turn, on demand for our products.

Adverse changes may occur in the future as a result of declining or flat global or regional economic conditions, fluctuations in currency and commodity prices, wavering confidence, capital expenditure reductions, unemployment, decline in stock markets, contraction of credit availability or other factors affecting economic conditions. For example, factors that may affect our operating results include disruption in the credit and financial markets in the United States, Europe and elsewhere, adverse effects of slowdowns in the U.S., European or Chinese economies, reductions or limited growth in consumer spending or consumer credit, global trade tariffs, and other adverse economic conditions that may be specific to the Internet, e-commerce and payments industries.

Adverse changes could also occur as a result of economic upswings, such as increased wages and scarce labor pools, and increased interest rates.

These changes may negatively affect sales of products and increase exposure to losses from bad debt and commodity prices, the cost and availability of financing, and costs associated with manufacturing and distributing products. Any economic downturn, or surge, could have a material adverse effect on our business, results of operations or financial condition.

Some systems that use our products are complex in design, and our products may contain defects that are not detected until deployed, which could increase our costs, reduce our revenues, cause us to lose key customers and may expose us to litigation arising from lawsuits related to our products.

Some systems that use our products are inherently complex in design and require ongoing maintenance. Our customers may discover defects in our products after the products have been fully deployed and operated under peak stress conditions. In addition, some of our products are combined with products from other vendors which may contain defects. Should problems occur, it may be difficult to identify the source of the problem. If we are unable to correct defects or other problems, we could experience, among other things, loss of customers, increased costs of product returns and warranty expenses, damage to our brand reputation, failure to attract new customers or achieve market acceptance, diversion of development and engineering resources, or legal action by our customers.

The occurrence of any one or more of the foregoing factors could have a material adverse effect on our business, results of operations or financial condition.

Foreign currency risk may negatively affect our revenues, cost of sales and operating margins and could result in foreign exchange losses.

We conduct our business and incur costs in the local currency of most countries in which we operate. Our net sales outside the United States represented a majority of our total sales in each of the last three fiscal years. We incur currency transaction risk whenever one of our operating subsidiaries enters into either a purchase or a sales transaction using a different currency from the currency in which it operates or holds assets or liabilities in a currency different than its functional currency. Changes in exchange rates can also affect our results of operations when the value of sales and expenses of foreign subsidiaries are translated to U.S. dollars. We cannot accurately predict the impact of future exchange rate fluctuations on our results of operations. Further, given the volatility of exchange rates, we may not be able to effectively manage our currency risks, and any volatility in currency exchange rates may increase the price of our products in local currency to our foreign customers or increase the manufacturing cost of our products, either of which may have an adverse effect on our financial condition, cash flows and profitability.

Our competitive position may still require significant investments.

We continuously monitor the marketplace for strategic opportunities, and our business strategy includes expanding our product lines and markets through both internal product development and acquisitions. Consequently, we expect to continue to consider strategic acquisition of businesses, products or technologies complementary to our business. This may require significant investments of management time and financial resources. If market demand is outside our organic capabilities, if a strategic acquisition is required and we cannot identify one or execute on it, and/or if financial investments that we undertake distract management, do not result in the expected return on investment, expose us to unforeseen liabilities or jeopardize our ability to comply with our credit facility covenants due to any inability to integrate the business, adjust to operating a larger and more complex organization, adapt to additional political and other requirements associated with the acquired business, retain staff, or work with customers, we could suffer a material adverse effect on our business, results of operations or financial condition.

We may be unable to successfully implement our acquisitions strategy or integrate acquired companies and personnel with existing operations.

We have in the past acquired several companies, and our announced acquisition of Finisar is pending. We may continue to expand and diversify our operations with additional acquisitions. We may be unable to identify or complete prospective acquisitions for many reasons, including increasing competition from other potential acquirers, the effects of consolidation in our industries, and potentially high valuations of acquisition candidates. In addition, applicable antitrust laws and other regulations may limit our ability to acquire targets or force us to divest an acquired business line. If we are unable to identify suitable targets or complete acquisitions, our growth prospects may suffer, and we may not be able to realize sufficient scale and technological advantages to compete effectively in all markets.

To the extent we are successful in making acquisitions, we may be unsuccessful in integrating acquired companies or product lines with existing operations, or the integration may be more difficult or more costly than anticipated. Some of the risks that may affect our ability to integrate or realize anticipated benefits from acquired companies, businesses or assets include those associated with:

- unexpected losses of key employees of the acquired company;
- conforming the acquired company’s standards, processes, procedures and controls with our operations, including integrating Enterprise Resource Planning (“ERP”) systems and other key business applications;
- coordinating new product and process development;
- increasing complexity from combining operations;
- increasing the scope, geographic diversity and complexity of our operations;
- difficulties in consolidating facilities and transferring processes and know-how; and
- diversion of management’s attention from other business concerns.

In connection with acquisitions, we may:

- use a signification portion of our available cash;
- issue equity securities, which would dilute current shareholders’ percentage ownership;
- incur significant debt;
- incur or assume contingent liabilities, known or unknown, including potential lawsuits, infringement actions or similar liabilities;
- incur impairment charges related to goodwill or other intangibles; and
- face antitrust or other regulatory inquiries or actions.

In addition, the market price of our common stock could be adversely affected if the effect of any acquisitions on our consolidated financial results is dilutive or is below the market's or financial analysts' expectations, or if there are unanticipated changes in the business or financial performance of the target company or the combined company. Any failure to successfully integrate acquired businesses may disrupt our business and adversely impact our business, financial condition and results of operations.

Our future success depends on continued international sales, and our global operations are complex, and present multiple challenges to manage.

Sales to customers in countries other than the United States accounted for approximately 70%, 68% and 69% of revenues during the years ended June 30, 2019, 2018 and 2017, respectively. We anticipate that international sales will continue to account for a significant portion of our revenues for the foreseeable future. If we do not maintain our current volume of international sales, we could suffer a material adverse effect on our business, results of operations and/or financial condition.

We manufacture products in the United States, China, Singapore, Vietnam, the Philippines, Germany, Switzerland, and the United Kingdom, and through a contract manufacturer in Thailand. We also maintain direct sales offices in Hong Kong, Japan, Germany, China, Switzerland, Belgium, the United Kingdom, Italy, South Korea, and Taiwan. Our operations vary by location and are influenced on a location-by-location basis by local customs, languages and work practices, as well as different local weather conditions, management styles and education systems. In addition, multiple complex issues may arise concurrently in different countries, potentially hampering our management's ability to respond in an effective and timely manner. Any inability to respond in an effective and timely manner to issues in our global operations could have a material adverse effect on our business, results of operations or financial condition.

We are subject to complex and rapidly changing import and export regulations.

We are subject to the passage of and changes in the interpretation of regulation by U.S. government entities at the federal, state and local levels and non-U.S. agencies, including, but not limited to, the following:

- We are required to comply with import laws and export control and economic sanctions laws, which may affect our ability to enter into or complete transactions with certain customers, business partners and other persons. In certain circumstances, export control and economic sanctions regulations may prohibit the export of certain products, services and technologies. We may be required to obtain an export license before exporting a controlled item, and granting of a required license cannot be assured. Compliance with the import laws that apply to our businesses may restrict our access to, and may increase the cost of obtaining, certain products and could interrupt our supply of imported inventory.
- Exported technologies necessary to develop and manufacture certain products are subject to U.S. export control laws and similar laws of other jurisdictions. We may be subject to adverse regulatory consequences, including government oversight of facilities and export transactions, monetary penalties and other sanctions for violations of these laws. In certain instances, these regulations may prohibit the Company from developing or manufacturing certain of its products for specific applications outside the United States. Failure to comply with any of these laws and regulations could result in civil and criminal, monetary and non-monetary penalties, disruptions to our business, limitations on our ability to import and export products and services and damage to our reputation.

Changes in U.S. trade policies could impact the Company's international operations and the cost of goods imported into the United States, which may narrow the size of our markets, materially impact our revenues or increase our operating costs and expose us to contract litigation.

In March 2018, President Trump announced new steel and aluminum tariffs, in April 2018, the U.S. Department of Commerce issued a denial order against two companies in the telecommunications market, and in May 2019, the U.S. Department of Commerce placed Huawei and its affiliates on the U.S. Entity List. Other international trade actions and initiatives also have been implemented, notably the imposition by the U.S. of additional tariffs on products of Chinese origin, and China's imposition of additional tariffs on U.S.-origin goods. If we cannot obtain relief from, or if we cannot take other action to mitigate the impact of, these additional restrictions and duties, our business and profits may be materially and adversely affected. Further changes in the trade policy of the United States or of other countries with which we do cross-border business, or additional sanctions, could result in retaliatory actions by other countries that could materially and negatively impact the volume of economic activity in the United States or globally, which, in turn, may decrease our access to customers and markets, reduce our revenues, and increase our operating costs.

Exports of certain of our products are subject to export controls imposed by the U.S. Government and administered by the U.S. Departments of State and Commerce. In certain instances, these regulations may require pre-shipment authorization from the administering department. For products subject to the Export Administration Regulations, or EAR, administered by the Department of Commerce's Bureau of Industry and Security, the requirement for a license is dependent on the type and end use of the product, the final destination, the identity of the end user and whether a license exception might apply. Virtually all exports of products subject to the International Traffic in Arms Regulations, or ITAR, administered by the Department of State's Directorate of Defense Trade Controls, require a license. Certain of our fiber optics products are subject to EAR controls and we historically have sold some

products, including certain products developed with government funding, subject to ITAR. Products developed and manufactured in our foreign locations are subject to export controls of the applicable foreign nation. Given the current global political climate, obtaining export licenses can be difficult and time-consuming. Failure to obtain export licenses for these shipments, or having one or more of our customers be restricted from receiving exports from us, could significantly reduce our revenue and materially adversely affect our business, financial condition and results of operations. Compliance with regulations of the United States and other governments also subjects us to additional fees and costs. The absence of comparable restrictions on competitors in other countries may adversely affect our competitive position. We have previously been the subject of inquiries from the Department of State and the Department of Justice regarding compliance with ITAR. Although these inquiries were closed with no action being taken, we expended significant time and resources to resolve them, and future inquiries of this type could also be costly to resolve.

Any inability to access financial markets from time to time to raise required capital, finance our working capital requirements or our acquisition strategies, or otherwise to support our liquidity needs could negatively impact our ability to finance our operations, meet certain obligations or implement our growth strategy.

We borrow under our existing credit facilities to fund operations, including working capital investments, and to finance our acquisition strategies. In the past, market disruptions experienced in the United States and abroad have materially impacted liquidity in the credit and debt markets, making financing terms for borrowers less attractive, and, in certain cases, have resulted in the unavailability of certain types of financing. Uncertainty in the financial markets may negatively impact our ability to access additional financing or to refinance our existing credit facilities or existing debt arrangements on favorable terms or at all, which could negatively affect our ability to fund current and future expansion as well as future acquisitions and development. These disruptions may include turmoil in the financial services industry, volatility in the markets where our outstanding securities trade, and changes in general economic conditions in the areas where we do business. If we are unable to access funds at competitive rates, or if our short-term or long-term borrowing costs increase, our ability to finance our operations, meet our short-term obligations and implement our operating strategies could be adversely affected.

In the future we may be required to raise additional capital through public or private financing or other arrangements. Such financing may not be available on acceptable terms, or at all, and our failure to raise capital when needed could harm our business and prospects. Additional equity financing may be dilutive to the holders of our common stock, and debt financing, if available, may involve restrictive covenants that may limit our ability to undertake certain activities that we otherwise would find to be desirable. Further, debt service obligations associated with any debt financing could reduce our profitability. If we cannot raise funds on acceptable terms, we may not be able to grow our business or respond to competitive pressures.

We may not be able to settle conversions of our convertible senior notes in cash or repurchase the notes in accordance with their terms.

Holders of our outstanding convertible senior notes have the right to require us to repurchase all or a portion of their notes upon the occurrence of a fundamental change (as defined in the indenture governing the notes) at a repurchase price equal to 100% of the principal amount of the notes to be repurchased, plus accrued and unpaid interest. In addition, upon conversion of the notes, unless we elect to deliver solely shares of our common stock to settle such conversions (other than paying cash in lieu of delivering any fractional share), we will be required to make cash payments in respect of the notes being converted. However, we may not have enough available cash or be able to obtain financing at the time we are required to make repurchases of surrendered notes, or pay cash with respect to notes being converted.

In addition, our ability to repurchase or to pay cash upon conversion of the notes may be limited by law, regulatory authority or agreements governing our future indebtedness. Our failure to repurchase notes at a time when the repurchase is required by the governing indenture, or to pay any cash upon conversion of the notes as required would constitute a default under the indenture. A default under the indenture or the fundamental change itself also could lead to a default under agreements governing our credit facility and any of our future indebtedness. If the payment of the related indebtedness were to be accelerated after any applicable notice or grace periods, we may not have sufficient funds to repay the indebtedness and repurchase the notes or to pay cash upon conversion of the notes.

We may fail to accurately estimate the size and growth of our markets and our customers' demands.

We make significant decisions based on our estimates of customer requirements. We use our estimates to determine the levels of business we seek and accept, production schedules, personnel needs and other resource requirements.

Customers may require rapid increases in production on short notice. We may not be able to purchase sufficient supplies or allocate sufficient manufacturing capacity to meet such increases in demand. Rapid customer ramp-up and significant increases in demand may strain our resources or negatively affect our margins. Inability to satisfy customer demand in a timely manner may harm our reputation, reduce our other opportunities, damage our relationships with customers, reduce revenue growth, and/or incur contractual penalties.

Alternatively, downturns in the industries in which we compete may cause our customers to significantly reduce their demand. With respect to orders we initiate with our suppliers to address anticipated demand from our customers, certain suppliers may have required non-cancelable purchase commitments or advance payments from us, and those obligations and commitments could reduce our ability to adjust our inventory or expense levels to reflect declining market demands. Unexpected declines in customer demands can result in excess or obsolete inventory and additional charges. Because certain of our sales, research and development, and internal manufacturing overhead expenses are relatively fixed, a reduction in customer demand likely would decrease our gross margins and operating income.

We may encounter increased competition.

We may encounter substantial competition from other companies in the same market, including established companies with significant resources. Some of our competitors may have financial, technical, marketing or other capabilities that are more extensive than ours. They may be able to respond more quickly than we can to new or emerging technologies and other competitive pressures. We may not be able to compete successfully against our present or future competitors. Our failure to compete effectively could have a material adverse effect on our business, results of operations or financial condition.

There are limitations on the protection of our intellectual property and we may from time to time be involved in costly intellectual property litigation or indemnification.

We rely on a combination of trade secret, patent, copyright and trademark laws, combined with employee confidentiality, noncompetition and nondisclosure agreements to protect our intellectual property rights. There can be no assurance that the steps we take will be adequate to prevent misappropriation of our technology or intellectual property. Furthermore, there can be no assurance that third parties will not assert infringement claims against us in the future.

Asserting our intellectual property rights or defending against third-party claims could involve substantial expense. In the event a third-party were successful in a claim that one of our processes infringed its proprietary rights, we could be required to pay substantial damages or royalties, or spend substantial amounts in order to obtain a license or modify processes so that they no longer infringe such proprietary rights. Any such event could have a material adverse effect on our business, results of operations or financial condition.

A significant portion of our business is dependent on cyclical industries.

Our business is dependent on the demand for products produced by end-users of industrial lasers, optical communication products, components for semiconductor capital equipment, and components for 3D sensing. Many of these end-users are in industries that have historically experienced a highly cyclical demand for their products. As a result, demand for our products is subject to these cyclical fluctuations. Fluctuations in demand could have a material adverse effect on our business, results of operations or financial condition.

Our global operations are subject to complex legal and regulatory requirements.

We manufacture products in the United States, China, Singapore, Vietnam, the Philippines, Germany, Switzerland, and the United Kingdom, and through a contract manufacturer in Thailand. We also maintain direct sales offices in Hong Kong, Japan, Germany, China, Switzerland, Belgium, the United Kingdom, Italy, South Korea and Taiwan. Operations inside and outside of the United States are subject to many legal and regulatory requirements, some of which are not aligned with others. These include tariffs, quotas, taxes and other market barriers, restrictions on the export or import of technology, potentially limited intellectual property protection, import and export requirements and restrictions, anti-corruption and anti-bribery laws, foreign exchange controls and cash repatriation restrictions, foreign investment rules and regulations, data privacy requirements, competition laws, employment and labor laws, pensions and social insurance, and environmental health and safety laws and regulations.

Compliance with these laws and regulations can be onerous and expensive, and requirements differ among jurisdictions. New laws, changes in existing laws, and abrogation of local regulations by national laws may result in significant uncertainties in how they will be interpreted and enforced. Failure to comply with any of these foreign laws and regulations could have a material adverse effect on our business, results of operations or financial condition.

Changes in laws and regulations governing data privacy and data protection could have a material adverse impact on our business.

We are subject to many data privacy, data protection, and data breach notification laws, including the European Union General Data Protection Regulation ("GDPR"), which became effective in May of 2018. While we have taken measures to assess the requirements of, and to comply with, the GDPR, as well as new and existing data-related laws and regulations of other jurisdictions, these measures may be challenged, including by authorities that regulate data-related compliance. We could incur significant expense in facilitating and responding to investigations, and if the measures we have taken prove to be inadequate, we could face fines, penalties or damages, and incur reputational harm, which could have a material adverse impact on our business.

Data breach incidents and breakdown of information and communication technologies could disrupt our operations and impact our financial results.

In the course of our business, we collect and store sensitive data, including intellectual property (both our own and that of our customers), as well as proprietary business information. We could be subject to service outages or breaches of security systems which may result in disruption, unauthorized access, misappropriation, or corruption of this information. Security breaches of our network or data, including physical or electronic break-ins, vendor service outages, computer viruses, attacks by hackers or similar breaches can create system disruptions, shutdowns, and unauthorized disclosure of confidential information. If we are unable to prevent or contain such security or privacy breaches, our operations could be disrupted or we could suffer legal claims, loss of reputation, financial loss, property damage, or regulatory penalties.

We have entered into supply agreements which commit us to supply products on specified terms.

We have supply agreements with some customers which require us to supply products and to allocate sufficient capacity to make these products. We have also agreed to pricing schedules and methodologies which could result in penalties if we fail to meet development, supply, capacity and quality commitments. Failure to do so may cause us to be unable to generate the amount of revenue or the level of profitability we expect from these arrangements. Our ability to realize a profit under some of these agreements will be subject to the level of customer demand, the cost of maintaining facilities and manufacturing capacity, and supply chain capability.

If we fail to fulfill our commitments under these supply agreements, our business, after using all remedies available, financial conditions and results of operations may suffer a material adverse effect.

We depend on highly complex manufacturing processes that require feeder materials, components and products from limited sources of supply.

Our operations are dependent upon a supply chain of difficult-to-make or difficult-to-refine products and materials. Some of our product inflow is subject to yield reductions from growth or fabrication losses, and thus the quantities we may receive are not consistently predictable. Customers may also change the specification for a product that our suppliers cannot meet.

We also make products for which the Company is one of the world's largest suppliers. We use high-quality, optical grade ZnSe in the production of many of our IR optical products. We are a leading producer of zinc selenide ("ZnSe") for our internal use and for external sale. The production of ZnSe is a complex process requiring a highly controlled environment. A number of factors, including defective or contaminated materials, could adversely affect our ability to achieve acceptable manufacturing yields of high quality ZnSe. Lack of adequate availability of high quality ZnSe could have a material adverse effect upon our business. There can be no assurance that we will not experience manufacturing yield inefficiencies which could have a material adverse effect on our business, results of operations or financial condition.

We produce hydrogen selenide gas which is used in our production of ZnSe. There are risks inherent in the production and handling of such material. Our lack of proper handling of hydrogen selenide could require us to curtail our production of hydrogen selenide. Our potential inability to internally produce hydrogen selenide could have a material adverse effect on our business, results of operations or financial condition.

In addition, we produce and use other high purity and relatively uncommon materials and compounds to manufacture our products including, but not limited to, zinc sulfide (“ZnS”), gallium arsenide (“GaAs”), Yttrium Aluminum Garnet (“YAG”), Yttrium Lithium Fluoride (“YLF”), Calcium Fluoride, Germanium, Selenium, Telluride, Bismuth Telluride (“Bi_2Te_3”) and silicon carbide (“SiC”). A significant failure of our internal production processes or our suppliers to deliver sufficient quantities of these necessary materials on a timely basis could have a material adverse effect on our business, results of operations or financial condition.

Increases in commodity prices may adversely affect our results of operations and financial condition.

We are exposed to a variety of market risks, including the effects of increases in commodity prices. Our businesses purchase, produce and sell high-purity selenium and other raw materials based upon quoted market prices from minor metal exchanges. The negative impact from increases in commodity prices might not be recovered through our product sales which could have a material adverse effect on our net earnings and financial condition.

We use and generate potentially hazardous substances that are subject to stringent environmental regulations.

Hazardous substances used or generated in some of our research and manufacturing facilities are subject to stringent environmental regulation. We believe that our handling of such substances is in material compliance with applicable local, state and federal environmental, safety and health regulations at each operating location. We invest substantially in proper personal protective equipment, process controls, including monitoring and specialized training to minimize risks to employees, surrounding communities and the environment that could result from the presence and handling of such hazardous substances. When exposure problems or potential exposure problems have been uncovered, corrective actions have been implemented and re-occurrence has been minimal or non-existent.

We have in place an emergency response plan with respect to our generation and use of the hazardous substances Hydrogen Selenide, Hydrogen Sulfide, Arsine and Phosphine. Special attention has been given to all procedures pertaining to these gaseous materials to minimize the chances of its accidental release into the atmosphere.

With respect to the manufacturing, use, storage and disposal of the low-level radioactive material Thorium Fluoride, our facilities and procedures have been inspected and licensed by the Nuclear Regulatory Commission. Thorium-bearing by-products are collected and shipped as solid waste to a government-approved low-level radioactive waste disposal site in Clive, Utah.

The generation, use, collection, storage and disposal of all other hazardous by-products, such as suspended solids containing heavy metals or airborne particulates, are believed by us to be in material compliance with regulations. We believe that we have obtained all of the permits and licenses required for operation of our business.

Although we do not know of any material environmental, safety or health problems in our properties or processes or products, there can be no assurance that problems will not develop in the future which could have a material adverse effect on our business, results of operations or financial condition.

Unfavorable changes in tax rates, tax liabilities or tax accounting rules could negatively affect future results.

As a global company, we are subject to taxation in the United States and various other countries and jurisdictions. As such, we must exercise a level of judgment in determining our worldwide tax liabilities. Our future tax rates could be affected by changes in the composition of earnings in countries with differing tax rates or changes in tax laws. Changes in tax laws or tax rulings may have a significantly adverse impact on our effective tax rate.

The enactment of the Tax Cuts and Jobs Act (the “Tax Act”) in December 2017 significantly affected U.S. tax law by changing how the U.S. imposes tax on multinational corporations. The U.S. Department of Treasury has broad authority under the Tax Act to issue regulations and interpretive guidance. We have applied available guidance to estimate our tax obligations, but new guidance issued by the U.S. Treasury Department may cause us to make adjustments to our tax estimates in future periods.

In addition, we are subject to regular examination of our income tax returns by the Internal Revenue Service and other tax authorities. We regularly assess the likelihood of favorable or unfavorable outcomes resulting from these examinations to determine the adequacy of our provision for income taxes. Although we believe our tax estimates are reasonable, there can be no assurance that any final determination will not be materially different than the treatment reflected in our historical income tax provision and accruals, which could materially and adversely affect our business, results of operation or financial condition.

Natural disasters or other global or regional catastrophic events could disrupt our operations, give rise to substantial environmental hazards and adversely affect our results.

We may be exposed to business interruptions due to catastrophe, natural disaster, pandemic, terrorism or acts of war that are beyond our control. Disruptions to our facilities or systems, or to those of our key suppliers, could also interrupt operational processes and adversely impact our ability to manufacture our products and provide services and support to our customers. As a result, our business, results of operations or financial condition could be materially adversely affected.

Our success depends on our ability to attract, retain and develop key personnel and requires continued good relations with our employees.

We are highly dependent upon the experience and continuing services of certain scientists, engineers, production and management personnel. Competition for the services of these personnel is intense. There can be no assurance that we will be able to retain or attract the personnel necessary for our success. The loss of the services of our key personnel could have a material adverse effect on our business, results of operations or financial condition.

Our stock price has been volatile in the past and may be volatile in the future.

The market price for our common stock on The Nasdaq Global Select Market varied between a high of $50.75 and a low of $29.31 in the fiscal year ended June 30, 2019. We expect that this volatility will continue. Factors that could cause fluctuation in our stock price include, among other things, general economic and market conditions, actual or anticipated variations in operating results, changes in financial estimates by securities analysts, our inability to meet or exceed securities analysts' estimates or expectations, conditions or trends in the industries in which our products are purchased, announcements by us or our competitors of significant acquisitions, strategic partnerships, divestitures, joint ventures or other strategic initiatives, capital commitments, additions or departures of key personnel, sales of our common stock or equity-linked securities and issuance of shares of our common stock in connection with conversions of our outstanding convertible senior notes.

Many of these factors are beyond our control. However, these factors could cause the market price of our common stock to decline, regardless of our actual operating performance. In addition, in recent years, the stock market in general, and The Nasdaq Stock Market and the securities of technology companies in particular, have experienced extreme price and volume fluctuations. These fluctuations have often been unrelated or disproportionate to the operating performance of individual companies. These broad market fluctuations have in the past, and may in the future, materially and adversely affect our stock price, regardless of our operating results. This volatility may affect the price at which our shareholders can sell our common stock.

Some anti-takeover provisions contained in our articles of incorporation and by-laws, as well as provisions of Pennsylvania law, could impair a takeover attempt, which could also reduce the market price of our common stock.

Our articles of incorporation and by-laws contain provisions that could make us a less attractive target for a hostile takeover and could make more difficult or discourage a merger proposal, a tender offer or a proxy contest. Such provisions include:

- A requirement that shareholder-nominated director nominees be nominated in advance of the meeting at which directors are elected and that specific information be provided in connection with such nomination;
- The ability of our board of directors to issue additional shares of common stock or preferred stock without shareholder approval; and
- Certain provisions requiring supermajority approval (at least two-thirds of the votes cast by all shareholders entitled to vote thereon, voting together as a single class).

In addition, the Pennsylvania Business Corporation Law (the "BCL") contains provisions that may have the effect of delaying or preventing a change in control of us or changes in our management. Many of these provisions are triggered if any person or group acquires, or discloses the intent to acquire, 20% or more of a corporation's voting power, subject to certain exceptions. These provisions:

- provide the other shareholders of the corporation with certain rights against the acquiring group or person;
- prohibit the corporation from engaging in a broad range of business combinations with the acquiring group or person;
- restrict the voting and other rights of the acquiring group or person; and
- provide that certain profits realized by the acquiring group or person from the sale of our equity securities belong to and are recoverable by us.

Regardless of the amount of a person's holdings, if a shareholder or shareholder group (including affiliated persons) would be a party to certain proposed transactions with us or would be treated differently from other shareholders of ours in certain proposed transactions, the BCL requires approval by a majority of votes entitled to be cast by all shareholders other than the interested shareholder or affiliate group, unless the transaction is approved by independent directors or other criteria are satisfied. Furthermore, under the BCL, a "short-form" merger of II-VI cannot be implemented without the consent of our board of directors.

In addition, as permitted by Pennsylvania law, an amendment to our articles of incorporation or other corporate action that is approved by shareholders may provide mandatory special treatment for specified groups of non-consenting shareholders of the same class. For example, an amendment to our articles of incorporation or other corporate action may provide that shares of common stock held by designated shareholders of record must be cashed out at a price determined by the corporation, subject to applicable dissenters' rights.

Furthermore, the BCL provides that directors may, in discharging their duties, consider, to the extent they deem appropriate, the effects of any action upon shareholders, employees, suppliers, customers and the communities in which its offices are located. Directors are not required to consider the interests of shareholders to a greater degree than other constituencies' interests. The BCL expressly provides that directors do not violate their fiduciary duties solely by relying on "poison pills" or the anti-takeover provisions of the BCL. We do not currently have a "poison pill."

All of these provisions may limit the price that investors may be willing to pay for shares of our common stock.

Because we do not currently intend to pay dividends, holders of our common stock will benefit from an investment in our common stock only if it appreciates in value, and by the intended anti-dilution actions of our share-buyback program.

We have never declared or paid dividends on our common stock, and do not expect to pay cash dividends in the foreseeable future. We currently anticipate that we will retain any future earnings to support operations and to finance the development of our business. As a result, the success of an investment in our common stock will depend entirely upon future appreciation in its value. There is no guarantee that our common stock will maintain its value or appreciate in value.

We contract with a number of large end-user service providers and product companies that have considerable bargaining power, which may require us to agree to terms and conditions that could have an adverse effect on our business or ability to recognize revenues.

Large end-user service providers and product companies comprise a significant portion of our customer base. These customers generally have greater purchasing power than smaller entities and, accordingly, often request and receive more favorable terms from suppliers, including us. As we seek to expand our sales to existing customers and acquire new customers, we may be required to agree to terms and conditions that are favorable to our customers and that may affect the timing of our ability to recognize revenue, increase our costs and have an adverse effect on our business, financial condition, and results of operations. Furthermore, large customers have increased buying power and ability to require onerous terms in our contracts with them, including pricing, warranties, and indemnification terms. If we are unable to satisfy the terms of these contracts, it could result in liabilities of a material nature, including litigation, damages, additional costs, loss of market share and loss of reputation. Additionally, the terms these large customers require, such as most-favored customer or exclusivity provisions, may impact our ability to do business with other customers and generate revenues from such customers.

We may be adversely affected by climate change regulations.

In many of the countries in which we operate, government bodies are increasingly enacting legislation and regulations in response to potential impacts of climate change. These laws and regulations may be mandatory. They have the potential to impact our operations directly or indirectly as a result of required compliance by our customers or our supply chain. Inconsistency of regulations may also affect the costs of compliance with such laws and regulations. Assessments of the potential impact of future climate change legislation, regulation and international treaties and accords are uncertain, given the wide scope of potential regulatory change in countries in which we operate.

We may incur increased capital expenditures resulting from required compliance with revised or new legislation or regulations, added costs to purchase or lower profits from sales of our products, allowances or credits under a "cap and trade" system, increased insurance premiums and deductibles as new actuarial tables are developed to reshape coverage, a change in competitive position relative to industry peers, and changes to profit or loss arising from increased or decreased demand for goods produced by us and indirectly, from changes in costs of goods sold.

We depend on large purchases from a few significant customers, and any loss, cancellation, reduction or delay in purchases by these customers could harm our business.

A small number of customers have consistently accounted for a significant portion of our revenues, although none individually greater than 10% of total revenues. Our success will depend on our continued ability to develop and manage relationships with our major customers. Although we are attempting to expand our customer base, we expect that significant customer concentration will continue for the foreseeable future. We may not be able to offset any decline in revenues from our existing major customers with revenues from new customers, and our quarterly results may be volatile because we are dependent on large orders from these customers that may be reduced, delayed, or cancelled. The markets in which we have historically sold our optical subsystems and components products are dominated by a relatively small number of systems manufacturers, thereby limiting the number of our potential customers.

Our dependence on large orders from a relatively small number of customers makes our relationship with each customer critically important to our business. We cannot ensure that we will be able to retain our major customers, attract additional customers, or that our customers will be successful in selling their products that incorporate our products. We have in the past experienced delays and reductions in orders from some of our major customers. In addition, our customers have in the past sought price concessions from us, and we expect that they will continue to do so in the future. Expense reduction measures that we have implemented over the past several years, and additional action we are taking to reduce costs, may adversely affect our ability to introduce new and improved products which may, in turn, adversely affect our relationships with some of our key customers. Further, some of our customers may in the future shift their purchases of products from us to our competitors or to joint ventures between these customers and our competitors, or may in certain circumstances produce competitive products themselves. The loss of one or more of our major customers, any reduction or delay in sales to these customers, our inability to successfully develop relationships with additional customers, or future price concessions that we may make could significantly harm our business.

The manufacturing of our products may be adversely affected if we are unable to manufacture certain products in our manufacturing facilities.

We manufacture some of the components that we provide to our contract manufacturer, along with our own finished goods. For some of the components and finished goods we are the sole manufacturer. Our manufacturing processes are highly complex, and issues are often difficult to detect and correct. From time to time we have experienced problems achieving acceptable yields in our manufacturing facilities, resulting in delays in the availability of our products. In addition, if we experience problems with our manufacturing facilities, it would be costly and require a long period of time to move the manufacture of these components and finished good products to a different facility or contract manufacturer, which could result in interruptions in supply, and would likely materially impact our financial condition and results of operations. In addition, for a variety of reasons, including changes in circumstances at our contract manufacturers or our own business strategies, we may be required to, or voluntarily may, transfer the manufacturing of certain products to other manufacturing sites.

Changes in manufacturing processes are often required due to changes in product specifications, changing customer needs and the introduction of new products. These changes may reduce manufacturing yields at our contract manufacturers and at our own manufacturing facilities, resulting in reduced margins on those products. In addition, many of our products are sourced from suppliers based outside of the United States, primarily in Asia. Uncertainty with respect to tax and trade policies, tariffs and government regulations affecting trade between the United States and other countries has recently increased. Major developments in tax policy or trade relations, such as the imposition of tariffs on imported products, could increase our product and product-related costs or require us to seek alternative suppliers, either of which could result in decreased sales or increases product and product-related costs.

Failure to accurately forecast our revenues could result in additional charges for obsolete or excess inventories or non-cancelable purchase commitments.

We base many of our operating decisions, and enter into purchase commitments, on the basis of anticipated revenue trends which are highly unpredictable. Some of our purchase commitments are not cancelable, and in some cases we are required to recognize a charge representing the amount of material or capital equipment purchased or ordered, which exceeds our actual requirements. Should revenues in future periods fall substantially below our expectations, or should we fail to accurately forecast changes in demand mix, we could be required to record substantial charges for obsolete or excess inventories or non-cancelable purchase commitments

If we fail to maintain an effective system of disclosure controls and internal control over financial reporting, our ability to produce timely and accurate financial statements or comply with applicable regulations could be impaired.

As a public company, we are subject to the reporting requirements of the Securities Exchange Act of 1934, as amended, or the Exchange Act, the Sarbanes-Oxley Act of 2002, as amended, or the Sarbanes-Oxley Act, and Nasdaq listing requirements. The Sarbanes-Oxley Act requires, among other things, that we maintain effective disclosure controls and procedures and internal control over financial reporting. In order to maintain and improve the effectiveness of our disclosure controls and procedures and internal control over financial reporting, we have expended, and anticipate that we will continue to expend, significant resources, including accounting-related costs and significant management oversight.

Any failure to develop or maintain effective controls, or any difficulties encountered in their implementation or improvement, could cause us to delay reporting of our financial results, be subject to one or more investigations or enforcement actions by state or federal regulatory agencies, stockholder lawsuits or other adverse actions requiring us to incur defense costs, pay fines, settlements or judgments. Any such failures could also cause investors to lose confidence in our reported financial and other information, which would likely have a negative effect on the trading price of our common stock. In addition, if we are unable to continue to meet these requirements, we may not be able to remain listed on the Nasdaq stock market.

Risks Relating to the Merger

Although II-VI expects that its acquisition of Finisar will result in cost savings, synergies and other benefits, the combined company may not realize those benefits because of integration difficulties and other challenges.

The success of II-VI's acquisition of Finisar will depend in large part on the success of the management of the combined company in integrating the operations, strategies, technologies and personnel of the two companies following the completion of the Merger. The combined company may fail to realize some or all of the anticipated benefits of the Merger if the integration process takes longer than expected or is more costly than expected. The failure of the combined company to meet the challenges involved in successfully integrating the operations of the two companies or to otherwise realize any of the anticipated benefits of the Merger, including additional cost savings and synergies, could impair the operations of the combined company. In addition, II-VI anticipates that the overall integration of Finisar will be a time-consuming and expensive process that, without proper planning and effective and timely implementation, could significantly disrupt the combined company's business.

Potential difficulties the combined company may encounter in the integration process include the following:

- the integration of management teams, strategies, technologies and operations, products and services;
- the disruption of ongoing businesses and distraction of their respective management teams from ongoing business concerns;
- the retention of and possible decrease in business from the existing customers of both companies;
- the creation of uniform standards, controls, procedures, policies and information systems;
- the reduction of the costs associated with each company's operations;
- the integration of corporate cultures and maintenance of employee morale;
- the retention of key employees; and
- potential unknown liabilities associated with the Merger.

The anticipated cost savings, synergies and other benefits of the Merger assume a successful integration of the companies and are based on projections and other assumptions, which are inherently uncertain. Even if integration is successful, anticipated cost savings, synergies and other benefits may not be achieved.

II-VI and Finisar will incur significant transaction-related costs in connection with the Merger.

II-VI and Finisar expect to incur a number of non-recurring transaction-related costs associated with completing the Merger, combining the operations of the two companies and achieving desired synergies. These fees and costs will be significant. Non-recurring transaction costs include, but are not limited to, fees paid to legal, financial and accounting advisors, filing fees and printing costs. II-VI will incur significant costs with respect to the financing for the cash consideration to be paid in connection with the Merger. Additional unanticipated costs may be incurred in the integration of the businesses of II-VI and Finisar. There can be no assurance that the elimination of certain duplicative costs, as well as the realization of other efficiencies related to the integration of the two businesses, will offset the incremental transaction-related costs over time. Thus, any net benefit may not be achieved in the near term, the long term or at all.

Our pending acquisition of Finisar is subject to conditions, including certain conditions that may not be satisfied, and may not be completed on a timely basis, or at all. Failure to complete the Merger could have material and adverse effects on us.

The completion of the Merger is subject to a number of conditions, which make the completion and timing of the completion of the Merger uncertain. Also, either Finisar or II-VI may terminate the Merger Agreement if the Merger has not been completed by November 8, 2019, although this termination right is not available if failure to comply with the Merger Agreement is a principal cause of or results in the failure of the Merger to occur before November 8, 2019.

If the Merger is not completed on a timely basis, or at all, II-VI's and Finisar's respective ongoing businesses may be adversely affected and, without realizing any of the benefits of having completed the Merger, II-VI and Finisar will be subject to a number of risks, including the following:

- II-VI and Finisar will be required to pay certain costs relating to the Merger, whether or not the Merger is completed, such as legal, accounting, financial advisor and printing fees;
- under the Merger Agreement, each of II-VI and Finisar is subject to certain restrictions on the conduct of its business prior to completing the Merger, which may adversely affect its ability to execute certain of its business strategies;
- time and resources committed by II-VI's and Finisar's respective management to matters relating to the Merger could otherwise have been devoted to pursuing other beneficial opportunities; and
- the market price of II-VI Common Stock could decline below current market prices to the extent that such current market prices reflect a market assumption that the Merger will be completed.

In addition, if the Merger is not completed, II-VI may experience negative reactions from the financial markets and from its customers and employees. II-VI could also be subject to litigation related to any failure to complete the Merger or to enforcement proceedings commenced against II-VI to perform its obligations under the Merger Agreement. If the Merger is not completed, II-VI cannot assure its shareholders that the risks described above will not materialize and will not adversely affect the business, financial results and stock prices of II-VI.

Each of II-VI and Finisar is subject to business uncertainties and contractual restrictions while the Merger is pending, which could adversely affect each of Finisar's and II-VI's business and operations.

Under the terms of the Merger Agreement, Finisar and II-VI are subject to certain restrictions on the conduct of their respective business prior to completing the Merger, which may adversely affect each party's ability to execute certain of its business strategies. Such limitations could negatively affect each party's businesses and operations prior to the completion of the Merger. Furthermore, the process of planning to integrate two businesses and organizations for the post-Merger period can divert management attention and resources and could ultimately have an adverse effect on each of Finisar and II-VI.

In connection with the Merger, parties with which Finisar or II-VI does business may experience uncertainty associated with the Merger, including with respect to current or future business relationships with Finisar, II-VI or the combined business. It is possible that some customers, suppliers and other persons with whom Finisar or II-VI has a business relationship may delay or defer certain business decisions or might decide to seek to terminate, change or renegotiate their relationships with Finisar or II-VI, as applicable, as a result of the Merger, which could negatively affect Finisar's or II-VI's revenues, earnings and cash flows, as well as the market price of shares of II-VI Common Stock, regardless of whether the Merger is completed.

The market price of II-VI Common Stock may decline in the future as a result of the Merger.

The market price of II-VI Common Stock may decline in the future as a result of the Merger for a number of reasons, including:

- the unsuccessful integration of Finisar and II-VI (including for the reasons set forth in the preceding risk factor);
- the need to pay cash amounts owing on conversion of, or in respect of any demands for repurchase of, Finisar's outstanding convertible notes in connection with the Merger and to issue II-VI Common Stock in connection with any future conversion of the Finisar's outstanding convertible notes, which may cause substantial dilution to holders of II-VI Common Stock; and
- the failure of the combined company to achieve the perceived benefits of the Merger, including financial results, as rapidly as or to the extent anticipated by financial or industry analysts.

These factors are, to some extent, beyond the control of II-VI. As a consequence, II-VI shareholders could lose the value of their investment in II-VI Common Stock.

Item 1B. UNRESOLVED STAFF COMMENTS

None.

Item 2. PROPERTIES

Information regarding our principal U.S. properties at June 30, 2019 is set forth below:

Location	Primary Use(s)	Primary Business Segment(s)	Approximate Square Footage	Ownership
Saxonburg, PA	Manufacturing and Research and Development	II-VI Laser Solutions and II-VI Performance Products	235,000	Owned and Leased
Warren, NJ	Manufacturing and Research and Development	II-VI Laser Solutions	159,000	Leased
Newark, DE	Manufacturing and Research and Development	II-VI Performance Products	135,000	Leased
Murrieta, CA	Manufacturing and Research and Development	II-VI Performance Products	108,000	Leased
Champaign, IL	Manufacturing and Research and Development	II-VI Laser Solutions	69,000	Leased
Dallas, TX	Manufacturing and Research and Development	II-VI Performance Products	68,000	Owned and Leased
Warrendale, PA	Corporate Administrative Offices	N/A	63,000	Leased
Monroe, CT	Manufacturing and Research and Development	II-VI Performance Products	48,000	Leased
Easton, PA	Manufacturing and Research and Development	II-VI Laser Solutions and II-VI Performance Products	48,000	Leased
Pine Brook, NJ	Manufacturing and Research and Development	II-VI Performance Products	47,000	Leased
Santa Rosa, CA	Manufacturing and Research and Development	II-VI Photonics	39,000	Leased
Starkville, MS	Manufacturing	II-VI Performance Products	35,000	Leased
Tustin, CA	Manufacturing and Research and Development	II-VI Performance Products	31,000	Leased
Philadelphia, PA	Manufacturing and Research and Development	II-VI Performance Products	30,000	Leased
Hillsborough, NJ	Manufacturing and Research and Development	II-VI Performance Products	23,000	Leased

We also maintain some additional small research and development, distribution, and administrative facilities in leased space in the United States.

Information regarding our principal foreign properties at June 30, 2019 is set forth below:

Location	Primary Use(s)	Primary Business Segment(s)	Approximate Square Footage	Ownership
China	Manufacturing, Research and Development, and Distribution	II-VI Laser Solutions, II-VI Photonics and II-VI Performance Products	1,694,000	Leased
United Kingdom	Manufacturing, Research and Development	II-VI Laser Solutions and II-VI Photonics	319,000	Owned and Leased
Philippines	Manufacturing	II-VI Laser Solutions and II-VI Performance Products	318,000	Leased
Vietnam	Manufacturing	II-VI Photonics and II-VI Performance Products	192,000	Owned and Leased
Switzerland	Manufacturing, Research and Development, and Distribution	II-VI Laser Solutions	118,000	Leased
Germany	Manufacturing and Distribution	II-VI Laser Solutions, II-VI Photonics and II-VI Performance Products	81,000	Owned and Leased
Singapore	Manufacturing	II-VI Laser Solutions and II-VI Performance Products	38,000	Leased

We also maintain some additional small distribution facilities in leased space in Belgium, Italy, Japan, South Korea, Taiwan, and the United Kingdom.

The square footage listed for each of the above properties represents facility square footage, except in the case of the Philippines location, which includes land.

Item 3. LEGAL PROCEEDINGS

The Company and its subsidiaries are involved in various claims and lawsuits incidental to its business. The resolution of each of these matters is subject to various uncertainties, and it is possible that these matters may be resolved unfavorably to the Company. Management believes, after consulting with legal counsel, that the ultimate liabilities, if any, resulting from such legal proceedings will not materially affect the Company’s financial condition, liquidity or results of operations.

Item 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II

Item 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

The Company's common stock is traded on the Nasdaq Global Select Market ("Nasdaq") under the symbol "IIVI." As of August 12, 2019, there were approximately 824 holders of record of our common stock. The Company historically has not paid cash dividends and does not presently anticipate paying cash dividends in the future.

ISSUER PURCHASES OF EQUITY SECURITIES

In August 2017, in conjunction with the Company's offering and sale of our outstanding convertible notes, the Company's Board of Directors authorized the Company to purchase up to $50 million of its common stock with a portion of the net proceeds received from the offering and sale of the convertible notes. The shares that were purchased by the Company pursuant to this authorization were retained as treasury stock and are available for general corporate purposes. The Company purchased 1,414,900 shares of its common stock for approximately $49.9 million pursuant to this authorization.

In August 2014, the Company's Board of Directors authorized the Company to purchase up to $50 million of its common stock through a share repurchase program (the "Program") that calls for shares to be purchased in the open market or in private transactions from time to time. The Program has no expiration and may be suspended or discontinued at any time. Shares purchased by the Company are retained as treasury stock and available for general corporate purposes. During the fiscal year ended June 30, 2019, the Company purchased 50,000 shares of its common stock for $1.6 million under this program. The Company did not repurchase shares pursuant to this Program during the fiscal years ended June 30, 2018 and 2017. As of June 30, 2019, the Company has cumulatively purchased 1,366,587 shares of its common stock pursuant to the Program for approximately $20.7 million. The dollar value of shares as of June 30, 2019 that may yet be purchased under the Program is approximately $29.3 million

The following table provides information with respect to purchases of the Company's equity securities during the quarter ended June 30, 2019.

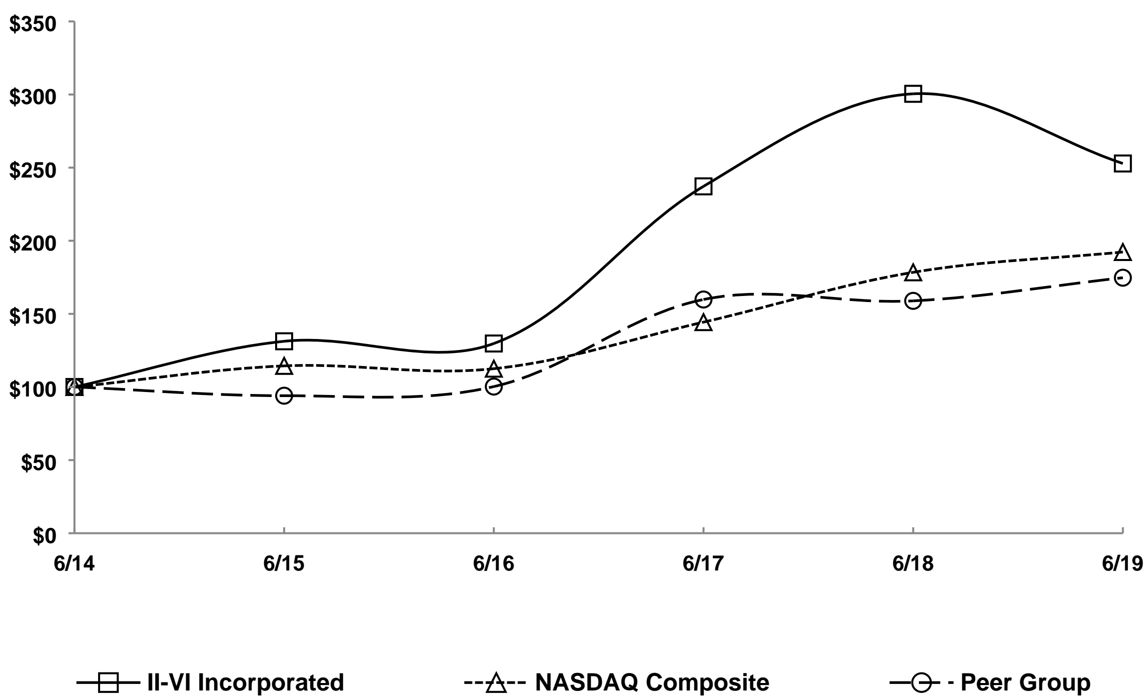
Period	Total Number of Shares Purchased	Average Price Paid Per Share	Total Number of Shares Purchased as Part of Publicly Announced Programs	Dollar Value of Shares That May Yet be Purchased Under the Program
April 1, 2019 to April 30, 2019	-	$ -	-	$ 30,906,904
May 1, 2019 to May 31, 2019	2,594 (1)	$ 32.86	-	$ 30,906,904
June 1, 2019 to June 30, 2019	-	$ 32.32	50,000	$ 29,290,759

(1) Includes 2,594 shares of our common stock transferred to the Company from employees in satisfaction of minimum tax withholding obligations associated with the vesting of restricted share awards.

The information incorporated by reference in Item 12 of this Annual Report on Form 10-K, from our 2019 Proxy Statement under the heading "Equity Compensation Plan Information," is hereby also incorporated by reference into this Item 5.

PERFORMANCE GRAPH

The following graph compares cumulative total shareholder return on the Company's common stock with the cumulative total shareholder return of the Nasdaq Composite Index and with a peer group of companies constructed by the Company for the period from June 30, 2014, through June 30, 2019. The Company's current fiscal year peer group includes Cabot Microelectronics Corporation, Franklin Electric Co. Inc., MKS Instruments, Inc., Silicon Laboratories Inc., Lumentum Holdings Inc., Finisar Corporation, Coherent, Inc. and Corning Incorporated.



*$100 invested on 6/30/14 in stock or index, including reinvestment of dividends.
Fiscal year ending June 30.

Item 6. SELECTED FINANCIAL DATA

Five-Year Financial Summary

The following selected financial data for the five fiscal years presented are derived from the Company's audited Consolidated Financial Statements. The data should be read in conjunction with the Consolidated Financial Statements and the related notes thereto included elsewhere in this Annual Report on Form 10-K.

Year Ended June 30,	**2019**	**2018**	**2017**	**2016**	**2015**
($000 except per share data)					
Statement of Earnings					
Net revenues	$ 1,362,496	$ 1,158,794	$ 972,046	$ 827,216	$ 741,961
Net earnings	107,517	88,002	95,274	65,486	65,975
Basic earnings per share	1.69	1.41	1.52	1.07	1.08
Diluted earnings per share	1.63	1.35	1.48	1.04	1.05
Diluted weighted average shares outstanding	65,804	65,133	64,507	62,909	62,586

June 30,	**2019**	**2018**	**2017**	**2016**	**2015**
($000)					
Balance Sheet					
Working capital	$ 542,348	$ 525,370	$ 517,344	$ 411,721	$ 373,812
Total assets	1,953,773	1,761,661	1,477,297	1,211,981	1,057,273
Long-term debt	443,163	419,013	322,022	215,307	155,066
Total debt	466,997	439,013	342,022	235,307	175,066
Retained earnings	943,581	836,064	748,062	652,788	587,302
Shareholders' equity	1,133,209	1,024,311	900,563	782,338	729,081

Item 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Forward-Looking Statements

Certain statements contained in this Management's Discussion and Analysis of Financial Condition and Results of Operations are forward-looking statements. Forward-looking statements are also identified by words such as "expects," "anticipates," "believes," "intends," "plans," "projects" or similar expressions. Actual results could differ materially from those anticipated in these forward-looking statements for many reasons, including those potential risks set forth in Item 1A, of this Annual Report on Form 10-K, which are incorporated herein by reference.

Overview

II-VI Incorporated ("II-VI," the "Company," "we," "us" or "our"), a worldwide leader in engineered materials and optoelectronic components, is a vertically integrated manufacturing company that develops innovative products for diversified applications in the industrial materials processing, optical communications, aerospace and defense, consumer electronics, semiconductor capital equipment, life science and automotive applications and markets. The Company produces a wide variety of application-specific photonic and electronic materials and components, and deploys them in various forms, including integration with advanced software.

The Company generates revenues, earnings and cash flows from developing, manufacturing and marketing engineered materials and optoelectronic components and devices for precision use in industrial materials processing, optical communications, consumer electronics, semiconductor capital equipment, life sciences and automotive applications. We also generate revenue, earnings and cash flows from government funded research and development contracts relating to the development and manufacture of new technologies, materials and products.

Our customer base includes OEMs, laser end-users, system integrators of high-power lasers, manufacturers of equipment and devices for the industrial, optical communications, aerospace and defense, semiconductor, medical and life science markets, consumer, U.S. government prime contractors, various U.S. Government agencies and thermoelectric integrators. `

In September 2018, November 2018, and March 2019, the Company completed its acquisitions of CoAdna Holdings, Inc. ("CoAdna"), an additional product line, and Redstone Aerospace Corporation ("Redstone"), respectively. See Note 3, Acquisitions, to our Consolidated Financial Statements contained in Item 8 of this Annual Report on Form 10-K. The operating results of these acquisitions have been reflected in the selected financial information of the Company's II-VI Photonics segment since the respective dates of the acquisitions, with the exclusion of Redstone which is reflected in the II-VI Performance Products Segment.

As we grow, we are focused on scaling our Company and deriving the continued benefits of vertical integration as we strive to be a best in class competitor in all of our highly competitive markets. The Company may elect to change the way in which the Company operates or is organized in the future to enable the most efficient implementation of its strategy.

Pending Acquisition of Finisar Corporation

II-VI and Finisar have entered into an Agreement and Plan of Merger, dated as of November 8, 2018 (the "Merger Agreement"). Pursuant to the terms of the Merger Agreement, Mutation Merger Sub Inc., a Delaware corporation and wholly owned subsidiary of II-VI, will be merged with and into Finisar, and Finisar will continue as the surviving corporation in the merger and a wholly owned subsidiary of II-VI (the "Merger").

If the Merger is consummated, Finisar stockholders will be entitled to receive, at their election, consideration per share of common stock of Finisar (the "Finisar Common Stock") consisting of (i) $26.00 in cash, without interest (the "Cash Consideration"), (ii) 0.5546 shares of II-VI common stock (the shares, the "II-VI Common Stock," and the consideration, the "Stock Consideration"), or (iii) a combination of $15.60 in cash, without interest, and 0.2218 shares of II-VI Common Stock (the "Mixed Consideration," and, together with the Cash Consideration and the Stock Consideration, the "Merger Consideration"). The Cash Consideration and the Stock Consideration are subject to proration adjustment pursuant to the terms of the Merger Agreement such that the aggregate Merger Consideration will consist of approximately 60% cash and approximately 40% II-VI Common Stock assuming a per share price of II-VI common stock equal to the price when the Merger Agreement was signed on November 8, 2018, which was $46.88 per share.

At the effective time of the Merger (the "Effective Time"), each option granted pursuant to Finisar's 2005 Stock Incentive Plan, as such plan has been further amended and restated (each, a "Finisar Stock Option"), or portion thereof, that is outstanding and unexercised as of immediately prior to the Effective Time (whether vested or unvested) will be cancelled, terminated and converted into the right to receive an amount of Mixed Consideration that would be payable to a holder of such number of shares of Finisar Common Stock equal to the quotient of (i) the product of (a) the excess, if any, of $26.00 over the exercise price per share of such Finisar Stock Option *multiplied by* (b) the number of shares of Finisar Common Stock subject to such Finisar Stock Option, *divided by* (ii) $26.00.

At the Effective Time, each restricted stock unit granted pursuant to Finisar's 2005 Stock Incentive Plan, as such plan has been further amended and restated (each, a "Finisar Restricted Stock Unit"), or portion thereof , that is outstanding and subject to a performance-based vesting condition that relates solely to the value of Finisar Common Stock will, to the extent such Finisar Restricted Stock Unit vests in accordance with its terms in connection with the Merger (the "Participating RSUs"), be cancelled and extinguished and converted into the right to receive the Cash Consideration, the Stock Consideration or the Mixed Consideration at the election of the holder of such Participating RSUs, subject to proration adjustment.

At the Effective Time, each Finisar Restricted Stock Unit (or portion thereof) that is outstanding and unvested, does not vest in accordance with its terms in connection with the Merger and is either (x) subject to time-based vesting requirements only or (y) subject to a performance-based vesting condition other than the value of Finisar Common Stock will be assumed by II-VI (each, an "Assumed RSU"). Each Assumed RSU will be subject to substantially the same terms and conditions as applied to the related Finisar Restricted Stock Unit immediately prior to the Effective Time, including the vesting schedule (and the applicable performance-vesting conditions in the case of a grant contemplated by clause (y) of the preceding sentence) and any provisions for accelerated vesting applicable thereto, except that the number of shares of II-VI Common Stock subject to each Assumed RSU will be equal to the product of (i) the number of shares of Finisar Common Stock underlying such unvested Finisar Restricted Stock Unit award as of immediately prior to the Effective Time multiplied by (ii) the sum of (a) 0.2218 plus (b) the quotient obtained by dividing (1) $15.60 by (2) the volume weighted average price per share of II-VI Common Stock (rounded to the nearest cent) on the Nasdaq Global Select Market for the ten consecutive trading days ending on (and including) the third trading day immediately prior to the Effective Time (with the resulting number rounded down to the nearest whole share).

II-VI filed with the SEC a registration statement on Form S-4 relating to the Merger, and that registration statement became effective in accordance with the provisions of Section 8(a) of the Securities Act of 1933, as amended, on February 7, 2019. Shareholders of II-VI and stockholders of Finisar voted to approve proposals related to the Merger at special meetings held on March 26, 2019 by the respective companies.

The waiting period under the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended, with respect to the Merger has expired without a request for additional information. Other regulatory approvals applicable to the Merger have been obtained in Germany, Mexico and Romania.

The completion of the Merger is subject to the satisfaction or waiver of certain additional customary closing conditions, including review and approval of the Merger by the State Administration for Market Regulation in China. The Company is planning to refile with the State Administration for Market Regulation in China, extending the approval period. Subject to the satisfaction or waiver of each of the closing conditions, II-VI and Finisar expect that the Merger will be completed in the second half of calendar 2019. However, it is possible that factors outside the control of both companies could result in the Merger being completed at a different time or not at all.

On November 8, 2018, in connection with its entry into the Merger Agreement, II-VI entered into a commitment letter (together with a related fee letter) with Bank of America, N.A., which was subsequently amended and restated on December 7, 2018 and on December 14, 2018 (together with one or more related fee letters, the "Commitment Letter"). Subject to the terms and conditions set forth in the Commitment Letter, the lender parties thereto severally committed to provide 100% of up to $2.425 billion in aggregate principal amount of senior secured credit facilities of II-VI.

On March 4, 2019, II-VI entered into a Credit Agreement, dated as of March 4, 2019 (as amended, the "New Credit Agreement"), by and among the Company, Bank of America, N.A., as Administrative Agent, Swing Line Lender and an L/C Issuer, and the other lenders party thereto. II-VI also entered into Amendment No. 1 to Credit Agreement, dated as of May 24, 2019, by and among the Company, Bank of America, N.A., as Administrative Agent, and the other lenders party thereto, which includes the final results of the syndication of the Term A Facility (as defined below). Pursuant to the terms and subject to the conditions therein, the New Credit Agreement provides for senior secured financing of $1.705 billion in the aggregate, consisting of (i) a five-year senior secured first-lien term A loan facility in an aggregate principal amount of $1.255 billion (the "Term A Facility") and (ii) a five-year senior secured first-lien revolving credit facility in an aggregate principal amount of $450.0 million (the "Revolving Credit Facility" and together with the Term A Facility, the "New Senior Credit Facilities"). The New Credit Agreement also provides for a letter of credit sub-facility not to exceed $25.0 million and a swing loan sub-facility initially not to exceed $20.0 million, subject to adjustment in accordance with the terms of the New Credit Agreement. II-VI anticipates using the proceeds from the Term A Facility, together with

a separately committed term B loan facility in an aggregate principal amount of up to $720.0 million (the "Term B Facility") and cash and short-term investments of II-VI and Finisar, to pay the cash portion of the merger consideration payable in connection with the Merger and related fees and expenses. II-VI currently does not intend to draw on the Revolving Credit Facility in order to fund the cash portion of the merger consideration payable in connection with the Merger.

The funding obligations of the lenders under the New Senior Credit Facilities are subject to certain currently unsatisfied conditions, including the consummation of the Merger. Accordingly, no borrowings are currently outstanding under the New Senior Credit Facilities, and II-VI currently is not able to borrow under the New Senior Credit Facilities. Further, II-VI expects that the New Credit Agreement will be amended prior to the consummation of the Merger to reflect syndication of the Term B Facility and to finalize certain other terms in the New Credit Agreement. Upon the consummation of the Merger, the New Senior Credit Facilities, governed by the New Credit Agreement as it may be amended as of such time, will be used (i) to refinance in full the Amended Credit Facility (as defined in Note 9 to the Company's Consolidated Financial Statements included in Item 8 of this Annual Report on Form 10-K) and (ii) on or after the date of the consummation of the Merger, to repay amounts owed in connection with Finisar's outstanding convertible notes, currently in an aggregate principal amount outstanding of $575.0 million, including with the proceeds of a portion of the Term A Facility which will be available to II-VI for a certain period after the initial funding under the New Senior Credit Facilities.

Unless and until the Merger is consummated and the other currently unsatisfied conditions to the funding obligations of the lenders under the New Senior Credit Facilities are satisfied or waived, the Amended Credit Facility remains in effect in accordance with its terms.

Critical Accounting Policies and Estimates

The preparation of financial statements and related disclosures in conformity with accounting principles generally accepted in the United States ("U.S. GAAP") and the Company's discussion and analysis of its financial condition and results of operations requires the Company's management to make judgments, assumptions and estimates that affect the amounts reported in its Consolidated Financial Statements and accompanying notes. Note 1 of the Notes to our Consolidated Financial Statements contained in Item 8 of this Annual Report on Form 10-K describes the significant accounting policies and accounting methods used in the preparation of the Company's Consolidated Financial Statements. Management bases its estimates on historical experience and on various other assumptions that it believes to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities. Actual results may differ from these estimates.

Management believes the Company's critical accounting estimates are those related to business combinations, impairment of goodwill and indefinite-lived intangible assets, and income taxes. Management believes these estimates to be critical because they are both important to the portrayal of the Company's financial condition and results of operations, and they require management to make judgments and estimates about matters that are inherently uncertain.

Management has discussed the development and selection of these critical accounting policies and estimates with the Audit Committee of the Board of Directors and the Audit Committee has reviewed the related disclosure. In addition, there are other items within our consolidated financial statements that require estimation, but are not deemed critical as described above. Changes in estimates used in these and other items could have a material impact on the consolidated financial statements.

Business Combinations

The Company accounts for business acquisitions under the acquisition method of accounting whereby the total purchase price was allocated to tangible and intangible assets acquired and liabilities assumed based on the respective fair values. The Company believes that the accounting estimates related to business combinations are "critical accounting estimates" because the Company must, in determining the fair value of assets acquired, make assumptions about the future performance of the acquired business, including among other things, the forecasted revenue attributable to the asset group. The valuation methodologies applied require the Company to determine a risk-adjusted discount rate that is reflective of the level of risk associated with these estimates to discount the forward-looking estimates to present value. Different assumptions may result in materially different values for these assets, which would impact the Company's financial position and future results of operations.

The Company's intangible assets are comprised of customer relationships and developed technology. The estimated fair value of the customer relationships and developed technology are determined using the multi-period excess earnings method and relief from royalty method, respectively. Both methods require forward looking estimates that are discounted to determine the fair value of the intangible asset using a risk-adjusted discount rate that is reflective of the level of risk associated with future estimates associated with the asset group.

Goodwill and Indefinite-Lived Intangibles

The Company tests goodwill and indefinite-lived intangible assets for impairment annually, and when events or changes in circumstances indicate that goodwill or indefinite-lived intangible assets might be impaired. Other intangible assets are amortized over their estimated useful lives. The determination of the estimated useful lives of other intangible assets and whether goodwill or indefinite-lived intangibles are impaired requires us to make judgments based on long-term projections of future performance. Estimates of fair value are based on our projection of revenues, operating costs and cash flows of each reporting unit, considering historical and anticipated results and general economic and market conditions and their projections. The fair values of the reporting units are determined using a discounted cash flow analysis based on historical and projected financial information as well as market analysis. The annual goodwill impairment analysis considers the financial projections of the reporting unit based on our most recently completed long-term strategic planning processes and also considers the current financial performance compared to our prior projections of the reporting unit. Changes in our internal structuring, financial performance, judgments and projections could result in an impairment of goodwill or indefinite-lived intangible assets. As of June 30, 2019, no reporting units are at risk for impairment, as the fair value of the reporting units substantially exceeds the carrying values.

The Company has the option to perform a qualitative assessment of goodwill prior to completing the quantitative assessment described above, to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying amount, including goodwill and other intangible assets. If the Company concludes that this is the case, it must perform the quantitative assessment. Otherwise, the Company will forego the quantitative assessment process and does not need to perform any further testing. The Company did not use the optional qualitative assessment during the years ended June 30, 2019 and 2018.

As a result of the purchase price allocations from our acquisitions, and due to our decentralized structure, our goodwill is included in multiple reporting units which are the same as the Company's operating segments. Due to the cyclical nature of our business, and the other factors described in the section on Risk Factors set forth in Item 1A of this Annual Report on Form 10-K, the profitability of our individual reporting units may periodically be affected by downturns in customer demand, operational challenges and other factors. These factors may have a relatively more pronounced impact on the individual reporting units as compared to the Company as a whole, and might adversely affect the fair value of the individual reporting units. If material adverse conditions occur that impact one or more of our reporting units, our determination of future fair value might not support the carrying amount of one or more of our reporting units, and the related goodwill would need to be impaired. Based upon our annual quantitative goodwill and indefinite-lived intangible assets impairment tests, the Company did not record any impairment of goodwill or indefinite-lived intangible assets for the fiscal year ended June 30, 2019.

Income Taxes

The Company prepares and files tax returns based on its interpretation of tax laws and regulations and records estimates based on these judgments and interpretations. In the normal course of business, the Company's tax returns are subject to examination by various taxing authorities, which may result in future tax, interest and penalty assessments by these authorities. Inherent uncertainties exist in estimates of many tax positions due to changes in tax law resulting from legislation, regulation and/or as concluded through the various jurisdictions' tax court systems. The Company recognizes the tax benefit from an uncertain tax position only if it is more likely than not that the tax position will be sustained on examination by the taxing authorities, based on the technical merits of the position. The tax benefits recognized in the financial statements from such a position are measured based on the largest benefit that has a greater than 50% likelihood of being realized upon ultimate resolution. The amount of unrecognized tax benefits is adjusted for changes in facts and circumstances. For example, adjustments could result from significant amendments to existing tax law and the issuance of regulations or interpretations by the taxing authorities, new information obtained during a tax examination, or resolution of an examination. The Company believes that its estimates for uncertain tax positions are appropriate and sufficient to pay assessments that may result from examinations of its tax returns. The Company recognizes both accrued interest and penalties related to unrecognized tax benefits in income tax expense.

Management evaluates the realizability of deferred tax assets for each jurisdiction in which it operates. If the Company experiences cumulative pretax income in a particular jurisdiction in a three-year period including the current and prior two years, management normally concludes that the income tax assets will more likely than not be realizable and no valuation allowance is recognized, unless known or planned operating developments, or changes in tax laws, would lead management to conclude otherwise. However, if the Company experiences cumulative pretax losses in a particular jurisdiction in a three year period, management then considers a series

of factors in the determination of whether the deferred tax assets can be realized. The Company has recorded valuation allowances against certain of its deferred tax assets, primarily those that have been generated from net operating losses in certain foreign taxing jurisdictions and acquired U.S. carryforwards. In evaluating whether the Company would more likely than not recover these deferred tax assets, it has not assumed any future taxable income or tax planning strategies in the jurisdictions associated with these carry-forwards where history does not support such an assumption. Implementation of tax planning strategies to recover these deferred tax assets or future income generation in these jurisdictions could lead to the reversal of these valuation allowances and a reduction of income tax expense.

Fiscal Year 2019 Compared to Fiscal Year 2018

The Company aligns its organizational structure into the following three reporting segments for the purpose of making operational decisions and assessing financial performance: (i) II-VI Laser Solutions, (ii) II-VI Photonics, and (iii) II-VI Performance Products. The Company is reporting financial information (revenue through operating income) for these reporting segments in this Annual Report on Form 10-K.

The following table sets forth select items from our Consolidated Statements of Earnings for the years ended June 30, 2019 and 2018 ($ in millions except per share information):

	Year Ended June 30, 2019		Year Ended June 30, 2018	
		% of Revenues		% of Revenues
Total revenues	$ 1,362.4	100.0%	$ 1,158.8	100.0%
Cost of goods sold	841.1	61.7	696.6	60.1
Gross margin	521.3	38.3	462.2	39.9
Operating expenses:				
Internal research and development	139.2	10.2	116.9	10.1
Selling, general and administrative	233.5	17.1	208.6	18.0
Interest and other, net	19.8	1.5	14.6	1.3
Earnings before income tax	128.8	9.5	122.2	10.5
Income taxes	21.3	1.6	34.2	3.0
Net earnings	$ 107.5	7.9%	$ 88.0	7.6%
Diluted earnings per share	$ 1.63		$ 1.35	

Executive Summary

Net earnings for fiscal year 2019 were $107.5 million ($1.63 per-share diluted), compared to $88.0 million ($1.35 per-share diluted) for fiscal year 2018. The increase in net earnings during the current fiscal year from fiscal year 2018 was primarily driven by incremental margin realized on the 18% revenue increase due primarily to strong demand from customers in the optical communications market. Offsetting the incremental margin on net earnings, the Company realized increased investments in internal research and development during the current fiscal year addressing new product development in growing mega-trend markets as well as higher selling, general and administrative expenses supporting the growing revenue base. During the current fiscal year, the Company incurred approximately $18.6 million in acquisition and integration expenses on its completed acquisitions as well as its pending acquisition of Finisar, which is included in selling, general and administrative expenses. The Company's effective income tax rate of 16.6% was lower than the 28% effective tax rate for fiscal year 2018. The higher income tax rate in fiscal year 2018 was the result of the adoption of the Tax Act and the income tax expense associated with the transition tax.

Consolidated

Revenues. Revenues for the year ended June 30, 2019 increased 18% to $1,362.4 million, compared to $1,158.8 million for the prior fiscal year. The increase in revenues during the current fiscal year was driven by strong demand from customers across the majority of the Company's business units. In particular, II-VI Photonics experienced a 31% revenue growth from the prior fiscal year, primarily driven by increased demand from customers in the optical communication market. Specifically, the segment saw increased demand for ROADM and other optical communication products addressing the growing deployment of 5G optical networks. II-VI Performance Products recorded a 23% revenue increase during the current fiscal year, driven by strengthening demand for SiC substrate products addressing RF electronics and high-power switching and power conversion systems for automotive and communication end markets. In addition, this segment also realized increased revenues from its aerospace and defense products addressing strengthening demand from customers in the intelligence, surveillance and reconnaissance markets.

Gross margin. Gross margin for the year ended June 30, 2019 was $521.3 million, or 38.3%, of total revenues, compared to $462.2 million, or 39.9% of total revenues, for the same period last fiscal year. Gross margin as a percentage of revenues decreased 160 basis points compared to the prior fiscal year despite the 18% increase in revenues during this same period. The Company's II-VI Photonic's gross margin was negatively impacted by a shift in product mix to lower margin products while II-VI Laser Solution's experienced under-absorption of manufacturing costs for its 3D Sensing product line due to continued delays in the program and underutilization of capacity.

Internal research and development. Company-funded internal research and development ("IR&D") expenses for the fiscal year ended June 30, 2019 were $139.2 million, or 10.2% of revenues, compared to $116.9 million, or 10.1% of revenues, last fiscal year. The increase in IR&D expenses is primarily due to the Company continuing to invest in new products and processes across all its businesses including investments in 5G technology, 3D Sensing and other engineered material applications. IR&D expenses as a percentage of revenues were consistent between both fiscal years, and the Company anticipates this percentage to continue to range between 10% and 15% of revenues as the Company continues investing in new product and process development.

Selling, general and administrative. Selling, general and administrative ("SG&A") expenses for the year ended June 30, 2019 were $233.5 million, or 17.1% of revenues, compared to $208.6 million, or 18.0% of revenues, last fiscal year. During fiscal year 2019, the Company announced its intention to acquire Finisar, and incurred approximately $15.6 million of related transaction expenses. In addition to the transaction expenses, the Company incurred higher SG&A expenses to support its growing revenue base. The Company has been successful in capitalizing on synergies from its recent acquisitions to improve its operating leverage.

Interest and other, net. Interest and other, net for the year ended June 30, 2019 was expense of $19.8 million compared to expense of $14.6 million last fiscal year. Included in interest and other, net were interest expense on long-term borrowings, earnings from equity investments, interest income on excess cash reserves, unrealized gains and losses on the Company's deferred compensation plan, and foreign currency gains and losses. The increase in interest and other, net was primarily due to increased interest expense during the current fiscal year of approximately $4.1 million due to the higher levels of outstanding debt.

Income taxes. The Company's year-to-date effective income tax rate at June 30, 2019 was 16.6%, compared to an effective tax rate of 28.0% last fiscal year. The prior fiscal year's effective tax rate was negatively impacted by the U.S. enacted tax legislation and the recording the provision for the transition tax under the new tax law.

Segment Reporting

Revenues and operating income for each of the Company's reportable segments are discussed below. Operating income differs from income from operations in that operating income excludes certain operational expenses included in other expense (income) – net, as reported. Management believes operating income to be a useful measure for investors, as it reflects the results of segment performance over which management has direct control and is used by management in its evaluation of segment performance. See Note 14 to the Company's Consolidated Financial Statements included in Item 8 of this Annual Report on Form 10-K for further information on the Company's reportable segments and for the reconciliation of operating income to net earnings, which is incorporated herein by reference.

Effective July 1, 2018, the Company realigned its composition of its operating segments. The Company moved Laser Systems Group, from II-VI Laser Solutions to II-VI Photonics and moved Integrated Photonics, Inc. from II-VI Photonics to II-VI Performance Products. All applicable segment information has been restated to reflect this change. Additionally, the Company renamed Laser Systems Group to II-VI Industrial Laser.

II-VI Laser Solutions ($ in millions)

	Year Ended June 30,		%
	2019	**2018**	**Decrease**
Revenues	$ 396.6	$ 405.9	(2%)
Operating income	$ 40.3	$ 40.1	0%

Revenues for the fiscal year ended June 30, 2019 for II-VI Laser Solutions decreased 2% to $396.6 million, compared to revenues of $405.9 million last fiscal year. The decrease in revenues during the current fiscal year was the result of lower demand from industrial based customers for the Company's CO_2 and fiber laser optics and components.

Operating income for the fiscal year ended June 30, 2019 for II-VI Laser Solutions of $40.3 million remained consistent compared to the last fiscal year.

II-VI Photonics ($ in millions)

	Year Ended June 30,		% Increase
	2019	2018	
Revenues	$ 638.8	$ 486.5	31%
Operating income	$ 81.9	$ 63.2	30%

The above operating results for the year ended June 30, 2019 include the Company's acquisitions of CoAdna in September 2018 and the product line which was acquired in November 2018.

Revenues for the year ended June 30, 2019 for II-VI Photonics increased 31% to $638.8 million, compared to $486.5 million for last fiscal year. Included in the current year's revenues were $12.4 million of revenues, excluding sales to customers through our sales offices, from the above acquisitions. Exclusive of these acquisitions, the increase in revenues was primarily attributed to increased demand for optical communication products driven by the China broadband initiative as China continues to build out its broadband networks. Specifically, the segment has seen increased demand for its ROADM and EDFA product lines to address this and other market demands, including the accelerating demand for 5G technology.

Operating income for the year ended June 30, 2019 for II-VI Photonics increased 30% to $81.9 million, compared to an operating income of $63.2 million last fiscal year. The increase in operating income was primarily due to incremental margin realized on increased revenues.

II-VI Performance Products ($ in millions)

	Year Ended June 30,		% Increase
	2019	2018	
Revenues	$ 327.0	$ 266.4	23%
Operating income	$ 42.2	$ 33.5	26%

The Company's II-VI Performance Products segment includes the business units of II-VI Marlow, II-VI M Cubed, II-VI Advanced Materials, II-VI Optical Systems and II-VI Performance Metals.

Revenues for the year ended June 30, 2019 for II-VI Performance Products increased 23% to $327.0 million, compared to $266.4 million for last fiscal year. The increase in revenues during the current fiscal year was primarily driven by increased demand for SiC products addressing RF electronics and high-power switching and power conversion systems for automotive and communication markets. In addition, the segment has seen increased demand for products and components for its thermoelectric and aerospace and defense markets.

Operating income for the year ended June 30, 2019 for II-VI Performance Products increased 26% to $42.2 million, compared to $33.5 million for last fiscal year. The increase in operating income during the current fiscal year was primarily driven by incremental margin realized by increased sales volume, as well as favorable product mix toward higher margin products.

Fiscal Year 2018 Compared to Fiscal Year 2017

The following table sets forth select items from our Consolidated Statements of Earnings for the years ended June 30, 2018 and 2017. ($ millions, except per share information):

	Year Ended June 30, 2018		Year Ended June 30, 2017	
		% of Revenues		% of Revenues
Total revenues	$ 1,158.8	100.0%	$ 972.0	100.0%
Cost of goods sold	696.6	60.1	583.7	60.1
Gross margin	462.2	39.9	388.3	39.9
Operating expenses:				
Internal research and development	116.9	10.1	96.8	10.0
Selling, general and administrative	208.6	18.0	176.0	18.1
Interest and other, net	14.6	1.3	(3.3)	(0.3)
Earnings before income tax	122.2	10.5	118.8	12.2
Income taxes	34.2	3.0	23.5	2.4
Net earnings	$ 88.0	7.6%	$ 95.3	9.8%
Diluted earnings per shares	$ 1.35		$ 1.48	

Consolidated

Revenues. Revenues for the year ended June 30, 2018 increased 19% to $1,158.8 million, compared to $972.0 million for the fiscal year ended June 30, 2017. The increase in revenues during fiscal year 2018 were driven by strong demand from customers across all of the Company's business segments. In particular, II-VI Laser Solution realized a 26% revenue growth from the fiscal year 2017, driven by increased demand from industrial based customers for CO2, fiber and direct diode optics and components. This segment also recorded increased shipments of its VCSELs products addressing the growing consumer electronics, datacom and other developing end markets. II-VI Performance Products recorded a 24% revenue increase during fiscal year 2018, driven by strengthening demand for SiC substrate products addressing RF electronics and high-power switching and power conversion systems for automotive, communication and aerospace and defense markets.

Gross margin. Gross margin as a percentage of revenues for the year ended June 30, 2018 was $462.2 million, or 39.9%, compared to $388.3 million, or 39.9%, for the fiscal year ended June 30, 2017. Gross margin as a percentage of revenues was consistent with the fiscal year 2017 due to a balance of operating efficiencies and investments to expand capacity. The Company's II-VI Photonic's gross margin was negatively impacted by both product mix and the effects of foreign currency.

Internal research and development. Company-funded internal research and development expenses for the year ended June 30, 2018 were $116.9 million, or 10.1% of revenues, compared to $96.8 million, or 10.0% of revenues, for the fiscal year ended June 30, 2017. The increase in IR&D expenses is primarily the result of the acquisition of Kaiam Laser Limited, acquired in August 2017, which contributed $14.6 million of expense.

Selling, general and administrative. SG&A expenses for the fiscal year ended June 30, 2018 were $208.6 million, or 18.0% of revenues, compared to $176.0 million, or 18.1% of revenues, for the fiscal year ended June 30, 2017. SG&A expenses includes $3.7 million and $2.5 million, respectively, for the combined acquisitions of II-VI Integrated Photonics Inc. ("IPI"), acquired in June 2017, and Kaiam Laser Limited, acquired in August 2017. Exclusive of these acquisitions, the increase in SG&A expenses is primarily due to increased operating costs to support the Company's growing revenue and infrastructure base, as well as its ongoing merger and acquisition strategy.

Interest and other, net. Interest and other, net for the year ended June 30, 2018 was expense of $14.6 million compared to income of $3.3 million for the year ended June 30, 2017. Interest expense increased $11.5 million due to the higher levels of the Company's outstanding debt. The majority of the interest expense increase was related to the Company's $345.0 million aggregate principal amount of convertible notes issued in August 2017. The Company recognized $10.8 million of interest and amortization of debt discounts and issuance costs. Other income during fiscal year 2017 included approximately $7.0 million of income from earn-out and technology transfer agreements from the Company's sale of its ANADIGICS' RF business.

Income taxes. The Company's year-to-date effective income tax rate at June 30, 2018 was 28.0%, compared to an effective tax rate of 19.8% at June 30, 2017. The variation between the Company's effective tax rate and the U.S. statutory rate was primarily due to the Company's foreign operations, which are subject to income taxes at lower statutory rates. The increase in the fiscal year 2018's effective tax rate is the result of approximately $8.0 million of increased income tax expense relating to repatriation on foreign source earnings.

II-VI Laser Solutions ($ in millions)

	Year Ended June 30,		% Increase
	2018	2017	
Revenues	$ 405.9	$ 317.5	28%
Operating income	$ 40.1	$ 27.5	46%

The Company's II-VI Laser Solutions segment includes the combined operations of II-VI Infrared Optics, II-VI HIGHYAG, II-VI Laser Enterprise, II-VI Laser Systems Group, II-VI OED, II-VI EpiWorks, and Kaiam Laser Limited (now operating under II-VI Compound Semiconductors, Ltd.). The Company acquired II-VI Compound Semiconductors, Ltd. in August 2017.

Revenues for the year ended June 30, 2018 for II-VI Laser Solutions increased 28% to $405.9 million, compared to $317.5 million for fiscal year ended June 30, 2017. The increase in revenues from fiscal year 2017 was the result of increased demand from industrial based customers for the Company's CO2, fiber and direct diode laser optics and components. In addition, the segment has also seen increased demand for its CVD diamond optics used in the EUV lithography markets, as well as VCSELs used in consumer electronics, datacom and other end markets.

Operating income for the year ended June 30, 2018 for II-VI Laser Solutions increased 46% to $40.1 million, compared to $27.5 million for fiscal year June 30, 2017. The increase in operating income during fiscal year 2018 was the result of incremental margins realized from increased capacity utilization, increase in mix of higher margin products, offset somewhat by greater investment in growth markets.

II-VI Photonics ($ in millions)

	Year Ended June 30,		% Increase (Decrease)
	2018	2017	
Revenues	$ 486.5	$ 440.4	10%
Operating income	$ 63.2	$ 66.5	(5%)

The Company's II-VI Photonics segment includes the combined operations of II-VI Photop and II-VI Optical Communications. The above operating results for the year ended June 30, 2018 include the Company's acquisition of IPI, which was acquired in June 2017.

Revenues for the year ended June 30, 2018 for II-VI Photonics increased 10% to $486.5 million, compared to $440.4 million for the fiscal year ended June 30, 2017. Exclusive of IPI, the increase in revenues was primarily attributed to increased demand of optics and optic assemblies for applications for industrial laser products. In addition, the segment realized increased demand for transport and amplification component products, including its 980 nm pumps.

Operating income for the year ended June 30, 2018 for II-VI Photonics decreased 5% to $63.2 million, compared to an operating income of $66.5 million for the fiscal year ended June 30, 2017. The increase in operating income was primarily due to incremental margin realized on increased revenues but significantly offset by mix shifts and negative foreign exchange effects.

II-VI Performance Products ($ in millions)

	Year Ended June 30,		% Increase
	2018	2017	
Revenues	$ 266.4	$ 214.2	24%
Operating income	$ 33.5	$ 21.6	55%

The Company's II-VI Performance Products segment includes the business units of II-VI Marlow, II-VI M Cubed, II-VI Advanced Materials, II-VI Optical Systems and II-VI Performance Metals.

Revenues for the year ended June 30, 2018 for II-VI Performance Products increased 24% to $266.4 million, compared to $214.2 million for fiscal year June 30, 2017. The increase in revenues during the fiscal year 2018 was primarily driven by increased demand for SiC products addressing RF electronics and high-power switching and power conversion systems for automotive and communication markets. In addition, the segment saw increased demand for products and components for the semiconductor capital equipment and aerospace and defense markets.

Operating income for the year ended June 30, 2018 for II-VI Performance Products increased 55% to $33.5 million, compared to $21.6 million for fiscal year June 30, 2017. The increase in operating income during fiscal year 2018 was primarily driven by incremental margin realized by increased sales volume, as well as favorable product mix toward higher margin products.

LIQUIDITY AND CAPITAL RESOURCES

Historically, our primary sources of cash have been provided through operations and long-term borrowings. Other sources of cash include proceeds received from the exercise of stock options and sales of equity investments and businesses. Our historical uses of cash have been for capital expenditures, investments in research and development, business acquisitions, payments of principal and interest on outstanding debt obligations, debt issuance costs, payments in satisfaction of employees' minimum tax obligations and purchases of treasury stock. Supplemental information pertaining to our sources and uses of cash is presented as follows:

Sources (uses) of Cash (millions):

Year Ended June 30,	2019	2018	2017
Net cash provided by operating activities	$ 178.5	$ 161.0	$ 118.6
Net proceeds on long-term borrowings	15.0	153.0	104.0
Proceeds from exercises of stock options	8.7	10.5	15.1
Additions to property, plant & equipment	(137.1)	(153.4)	(138.5)
Purchases of businesses, net of cash acquired	(83.1)	(80.5)	(40.0)
Payments in satisfaction of employees' minimum tax obligations	(7.1)	(6.6)	(4.1)
Debt issuance costs	(5.6)	(10.1)	-
Purchases of equity investments	(4.5)	(52.1)	-
Payment on earnout consideration	(4.5)	-	(2.0)
Purchases of treasury stock	(1.6)	(49.9)	-
Effect of exchange rate changes on cash and cash equivalents and other	(0.8)	3.2	0.3

Net cash provided by operating activities:

Net cash provided by operating activities was $178.5 million and $161.0 million for the fiscal years ended June 30, 2019 and 2018, respectively. The increase in cash provided by operations during the current fiscal year was due to a combination of higher net earnings as well as non-cash items such as depreciation, amortization, and share-based compensation expense and improved working capital management of accounts payable.

Net cash provided by operating activities was $161.0 million and $118.6 million for the fiscal years ended June 30, 2018 and 2017, respectively. The increase in cash provided by operating activities during fiscal year 2018 was due to a combination of higher net earnings as well as non-cash items such as depreciation, amortization and share-based compensation expense and better working capital management of accounts payable, income tax payable and other operating net assets.

Net cash used in investing activities:

Net cash used in investing activities was $224.0 million and $285.0 million for the fiscal years ended June 30, 2019 and 2018, respectively. The decrease in cash used in investing activities was the result of lower level of investments in property, plant & equipment as the Company continues to strategically allocate resources.

Net cash used in investing activities was $285.0 million and $177.2 million for the fiscal years ended June 30, 2018 and 2017, respectively. The increase in cash used in investing activities was the result of higher level of investments in property, plant & equipment to continue to build capacity to meet the growing demand for the Company's product portfolio. In addition, the Company completed several strategic investments in both wholly and majority owned investments during fiscal year 2018, totaling approximately $132.6 million.

Net cash provided by financing activities:

Net cash provided by financing activities was $4.9 million for the year ended June 30, 2019 compared to net cash provided by financing activities of $97.0 million for the year ended June 30, 2018. During the current fiscal year, the Company had net borrowings of $15.0 million. The Company realized $8.7 million of proceeds received from the exercise of stock options offset, by $7.1 million of cash payments in satisfaction of employees' minimum tax obligations on the vesting of the Company's restricted and performance shares during the current fiscal year. In addition, the Company incurred approximately $1.6 million of purchases of treasury stock and $5.6 million of debt issuance costs associated with its pending financing of the cash consideration payable in connection with its Finisar acquisition.

Net cash provided by financing activities was $97.0 million for the year ended June 30, 2018 compared to net cash provided by financing activities of $111.6 million for the year ended June 30, 2017. During fiscal year 2018, the Company completed its offering and sale of $345 million aggregate principal amount of convertible notes. In addition, the Company borrowed $100.0 million on its revolving credit facility to fund investments in capital expenditures and research and development to address new and growing technology platforms. The net proceeds from the convertible debt offering as well as cash generated from operations was used to repay $272.0 million on the Company's revolving credit facility under the Amended Credit Facility (as defined below), $20.0 million on the Company's term loan under the Amended Credit Facility and $10.1 million of convertible debt issuance costs. The Company also utilized $49.9 million of net proceeds from its offering and sale of its convertible notes to repurchase 1,414,900 shares of its common stock. The Company realized $10.5 million of proceeds received from exercises of stock options, offset by $6.6 million of cash payments in satisfaction of employees' minimum tax obligations on the vesting of the Company's restricted and performance shares during fiscal year 2018.

0.25% Convertible Senior Notes

On August 24, 2017, the Company entered into a purchase agreement with Merrill Lynch, Pierce, Fenner & Smith Incorporated, as representative of the several initial purchasers named therein (collectively, the "Initial Purchasers"), to issue and sell $300 million aggregate principal amount of our 0.25% convertible senior notes due 2022 (the "Notes") in a private placement to qualified institutional buyers within the meaning of Rule 144A under the Securities Act of 1933, as amended. In addition, we granted the Initial Purchasers a 30-day option to purchase up to an additional $45 million aggregate principal amount of the Notes (the "Over-Allotment Option").

On August 29, 2017, the Initial Purchasers exercised their Over-Allotment Option to purchase the entire $45 million in aggregate principal amount of additional Notes. The Notes mature on September 1, 2022, unless earlier repurchased by the Company or converted by holders in accordance with the terms of the Notes. Interest is payable semi-annually in arrears on March 1 and September 1 of each year, beginning on March 1, 2018.

The sale of the Notes to the Initial Purchasers settled on August 29, 2017, and resulted in approximately $336 million in net proceeds to the Company after deducting the initial purchasers' discount and the offering expenses. The net proceeds from the offering and sale of the Notes were used, in part, to repurchase approximately $49.9 million of our common stock. The Company used the remaining net proceeds to repay $252 million on its revolving credit facility and to pay debt issuance costs of $10.1 million.

The Notes are governed by an Indenture between the Company, as issuer, and U.S. Bank, National Association, as trustee. The Notes are our senior unsecured obligations and rank senior in right of payment to any of our indebtedness that is expressly subordinated in right of payment to the Notes; equal in right of payment to any of our indebtedness that is not so subordinated; effectively junior in right of payment to any of our secured indebtedness to the extent of the value of the assets securing such indebtedness; and structurally junior to all indebtedness and other liabilities (including trade payables) of our subsidiaries. In the event of our bankruptcy, liquidation, reorganization or other winding up, our assets that secure secured debt will be available to pay obligations on the Notes only after all indebtedness under such secured debt has been repaid in full from such assets. Upon conversion, the Company will pay or deliver, as the case may be, cash, shares of our common stock or a combination of cash and shares of our common stock, at the Company's election.

As a result of our cash conversion option, the Company separately accounted for the value of the embedded conversion option as a debt discount. The value of the embedded conversion option was determined based on the estimated fair value of the debt without the conversion feature, which was determined using an expected present value technique (income approach) to estimate the fair value of similar nonconvertible debt; the debt discount is being amortized as additional non-cash interest expense over the term of the Notes using the effective interest method with an effective interest rate of 4.5% per annum.

The equity component is not remeasured as long as it continues to meet the conditions for equity classification. The initial conversion rate is 21.25 shares of common stock per $1,000 principal amount of Notes, which is equivalent to an initial conversion price of $47.06 per share of common stock. Throughout the term of the Notes, the conversion rate may be adjusted upon the occurrence of certain events. The if-converted value of the Notes amounted to $268 million as of June 30, 2019 (based on the Company's closing stock price on the last trading day of the year ended June 30, 2019).

Holders of the Notes will not receive any cash payment representing accrued and unpaid interest upon conversion of a note. Accrued but unpaid interest will be deemed to be paid in full upon conversion rather than cancelled, extinguished or forfeited.

Prior to the close of business on the business day immediately preceding June 1, 2022, the Notes will be convertible only upon satisfaction of at least one of the conditions as follows:

a) During any fiscal quarter (and only during such fiscal quarter), if the last reported sale price of our common stock for at least 20 trading days (whether or not consecutive) during a period of 30 consecutive trading days ending on the last trading day of the immediately preceding quarter is greater than or equal to 130% of the conversion price on each applicable trading day;

b) During the five business day period after any five consecutive trading day period (the "measurement period") in which the trading price per $1,000 principal amount of Notes for each trading day of the measurement period was less than 98% of the product of the last reported sale price of our common stock and the conversion rate on each such trading day; or

c) Upon the occurrence of specified corporate events.

On or after June 1, 2022 until the close of business on the business day immediately preceding the maturity date, holders may convert all or any portion of their Notes, in multiples of $1,000 principal amount, at the option of the holder regardless of the foregoing circumstances.

As of June 30, 2019, the Notes are not convertible. The Notes will become convertible upon the satisfaction of at least one of the above conditions. In accounting for the transaction costs related to the Note issuance, the Company allocated the total amount of offering costs incurred to the debt and equity components based on their relative values. Offering costs attributable to the debt component, totaling $8.4 million, are being amortized as non-cash interest expense over the term of the Notes, and offering costs attributable to the equity component, totaling $1.7 million, were recorded within Shareholders' equity.

The Company was in compliance with all the covenants set forth under the indenture as of June 30, 2019.

The following table sets forth total interest expense recognized related to the Notes for the fiscal years ended June 30, 2019 and 2018 (representing an effective interest rate of 4.5%):

Year ended June 30,	**2019**	**2018**
0.25% contractual coupon	$ 874	$ 731
Amortization of debt discount and debt issuance costs including initial purchaser discount	12,550	10,058
Interest expense	$ 13,424	$ 10,789

The unamortized discount amounted to $38.3 million as of June 30, 2019 and is being amortized over the remaining period of three years.

Amended Credit Facility

On July 28, 2016, the Company amended and restated its existing credit agreement. The Third Amended and Restated Credit Agreement (the "Amended Credit Facility") provides for a revolving credit facility of $325 million, as well as a $100 million term loan. The term loan is being repaid in consecutive quarterly principal payments on the first business day of each January, April, July and October, with the first payment having commenced on October 1, 2016, as follows: (i) twenty consecutive quarterly installments of $5 million and (ii) a final installment of all remaining principal due and payable on the maturity date of July 27, 2021. Amounts borrowed under the revolving credit facility are due and payable on the maturity date. The Amended Credit Facility is unsecured, but

is guaranteed by each existing and subsequently acquired or organized wholly-owned domestic subsidiary of the Company. The Company has the option to request an increase to the size of the revolving credit facility in an aggregate additional amount not to exceed $100 million. The Amended Credit Facility has a five-year term through July 27, 2021 and has an interest rate of either a Base Rate Option or a Euro-Rate Option, plus an Applicable Margin, as defined in the agreement governing the Amended Credit Facility. If the Base Rate option is selected for a borrowing, the Applicable Margin is 0.00% to 1.25% and if the Euro-Rate Option is selected for a borrowing, the Applicable Margin is 1.00% to 2.25%. The Applicable Margin is based on the ratio of the Company's consolidated indebtedness to consolidated EBITDA. Additionally, the Amended Credit Facility is subject to certain covenants, including those relating to minimum interest coverage and maximum leverage ratios. As of June 30, 2019, the Company was in compliance with all financial covenants under its Amended Credit Facility.

Yen Loan

The Company's yen denominated line of credit is a 500 million Yen ($4.6 million) facility. The Yen line of credit matures in August 2020. The interest rate is equal to LIBOR, as defined in the loan agreement, plus 0.625% to 1.75%. At June 30, 2019 and 2018, the Company had 300 million Yen outstanding under the line of credit. Additionally, the facility is subject to certain covenants, including those relating to minimum interest coverage and maximum leverage ratios. As of June 30, 2019, the Company had $2.8 million outstanding and was in compliance with all covenants under its Yen facility.

Aggregate Availability

The Company had aggregate availability of $211.9 million and $246.4 million under its lines of credit as of June 30, 2019 and 2018, respectively. The amounts available under the Company's lines of credit are reduced by outstanding letters of credit. Total outstanding letters of credit supported by the credit facilities were immaterial for fiscal year 2019 and $0.4 million for fiscal year 2018, respectively.

Weighted Average Interest Rate

The weighted average interest rate of total borrowings was 1.6% and 1.3% for the years ended June 30, 2019 and 2018, respectively. The weighted average of total borrowings for the fiscal years ended June 30, 2019 and 2018 was $533.9 million and $476.6 million, respectively.

Share Repurchase Programs

In August 2017, in conjunction with the Company's offering and sale of the Notes, the Company's Board of Directors authorized the Company to purchase up to $50 million of its common stock with a portion of the net proceeds received from the offering and sale of the Notes. The shares that were purchased by the Company pursuant to this authorization were retained as treasury stock and are available for general corporate purposes. The Company purchased 1,414,900 shares of its common stock for approximately $49.9 million pursuant to this authorization.

In August 2014, the Company's Board of Directors authorized the Company to purchase up to $50 million of its common Stock through a share repurchase program (the "Program") that calls for shares to be purchased in the open market or in private transactions from time to time. The Program has no expiration and may be suspended or discontinued at any time. Shares purchased by the Company are retained as treasury stock and available for general corporate purposes. As of June 30, 2019, the Company has cumulatively purchased 1,366,587 shares of its common stock pursuant to the Program for approximately $20.7 million.

Our cash position, borrowing capacity and debt obligations are as follows (in millions):

	June 30, 2019	June 30, 2018
Cash and cash equivalents	$ 204.9	$ 247.0
Available borrowing capacity	211.9	246.4
Total debt obligations	467.0	439.0

The Company believes cash flow from operations, existing cash reserves and available borrowing capacity from its credit facilities will be sufficient to fund its needs for working capital, capital expenditures, repayment of scheduled long-term borrowings and capital lease obligations, investments in internal research and development, share repurchases, acquisition and integration expenses for the pending Finisar acquisition, and internal and external growth objectives at least through fiscal year 2020.

The Company’s cash and cash equivalent balances are generated and held in numerous locations throughout the world, including amounts held outside the United States. As of June 30, 2019, the Company held approximately $173 million of cash and cash equivalents outside of the United States. Cash balances held outside the United States could be repatriated to the United States. The Tax Act created significant changes to the taxation of undistributed foreign earnings and has changed our future intentions regarding repatriation of earnings.

Off-Balance Sheet Arrangements

The Company’s off-balance sheet arrangements include the operating lease obligations and the purchase obligations disclosed in the contractual obligations table below, as well as letters of credit as discussed in Note 9 to the Company’s Consolidated Financial Statements included in Item 8 of this Annual Report on Form 10-K. The Company enters into these off-balance sheet arrangements to acquire goods and services used in its business.

Tabular Disclosure of Contractual Obligations

	Payments Due By Period				
Contractual Obligations	**Total**	**Less Than 1 Year**	**1-3 Years**	**3-5 Years**	**More Than 5 Years**
($000)					
Long-term debt obligations	$ 511,617	$ 23,834	$ 142,783	$ 345,000	$ -
Interest payments[1]	25,321	8,590	10,134	2,394	4,203
Capital lease obligation	24,360	1,021	2,426	3,000	17,913
Operating lease obligations[2]	119,900	23,000	32,000	20,900	44,000
Purchase obligations[3][4]	37,012	32,048	4,964	-	-
Total	$ 718,210	$ 88,493	$ 192,307	$ 371,294	$ 66,116

(1) Interest payments represent both variable and fixed rate interest obligations based on the interest rate in place at June 30, 2019, relating to the Amended Credit Facility, the Notes and interest relating to the Company’s capital lease obligation.

(2) Includes an obligation for the use of three parcels of land related to II-VI Performance Metals. The lease obligations extend through years 2039, 2056, and 2061, respectively.

(3) A purchase obligation is defined as an agreement to purchase goods or services that is enforceable and legally binding on the Company and that specifies all significant terms, including fixed or minimum quantities to be purchased; minimum or variable price provisions, and the approximate timing of the transaction. These amounts are primarily comprised of open purchase order commitments to vendors for the purchase of supplies and materials.

(4) Includes cash earn out opportunities based on certain acquisitions’ achieving agreed-upon financial, operational and technology targets, and the value of the net purchase option for the Company’s Equity Investment in a Privately Held Company.

Pension obligations are not included in the table above. The Company expects defined benefit plan employer contributions to be $3.0 million in 2020. Estimated funding obligations are determined by asset performance, workforce and retiree demographics, tax and employment laws and other actuarial assumptions which may change the annual funding obligations. The funded status of our defined benefit plans is disclosed in Note 17 to the Company’s Consolidated Financial Statements included in item 8 of this Annual Report on Form 10-K.

The gross unrecognized income tax benefits at June 30, 2019, which are excluded from the above table, were $12.7 million. The Company is not able to reasonably estimate the amount by which the liability will increase or decrease over time; however, at this time, the Company does not expect a significant payment related to these obligations within the next fiscal year.

Item 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

MARKET RISKS

The Company is exposed to market risks arising from adverse changes in foreign currency exchange rates and interest rates. In the normal course of business, the Company uses certain techniques and derivative financial instruments as part of its overall risk management strategy, primarily focused on its exposure to the Japanese Yen, Chinese Renminbi, and the Swiss Franc. No significant changes have occurred in the techniques and instruments used other than those described below.

Foreign Exchange Risks

In the normal course of business, the Company enters into foreign currency forward exchange contracts with its financial institutions. The purpose of these contracts is to hedge ordinary business risks regarding foreign currencies on product sales and other transactions denominated in currencies other than the U.S. dollar. Foreign currency forward exchange contracts are used to limit transactional exposure to changes in currency rates.

Japanese Yen

The Company enters into foreign currency forward contracts that permit it to sell specified amounts of Japanese Yen expected to be received from its export sales for pre-established U.S. dollar amounts at specified dates. The forward contracts are denominated in the same foreign currencies in which export sales are denominated. These contracts provide the Company with an economic hedge in which settlement will occur in future periods, thereby limiting the Company’s exposure. These contracts had a total notional amount of $17.0 million and $12.0 million at June 30, 2019 and 2018, respectively.

A 10% change in the yen to U.S. dollar exchange rate would have changed revenues in the range from a decrease of approximately $10.0 million to an increase of approximately $12.2 million for the year ended June 30, 2019.

Chinese Renminbi

The Company enters into month-to-month forward contracts to limit exposure to the Chinese Renminbi. During the year ended June 30, 2019, the Company recorded a loss of $2.0 million with respect to these forward contracts.

Swiss Franc

The Company enters into month-to-month forward contracts to limit exposure to the Swiss Franc. During the year ended June 30, 2019, the Company recorded an immaterial loss with respect to these forward contracts.

Interest Rate Risks

As of June 30, 2019, the Company’s total borrowings of $467 million consisted of $162.8 million variable rate debt borrowings from a line of credit of $115.0 million denominated in U.S. dollars, a term loan denominated in U.S. dollars of $45.0 million, and a line of credit borrowing of $2.8 million denominated in Japanese yen. As such, the Company is exposed to changes in interest rates. A change in the interest rate of 100 basis points on these variable rate borrowings would have resulted in additional interest expense of $1.8 million for the fiscal year ended June 30, 2019.

Item 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

Management's Responsibility for Preparation of the Financial Statements

Management is responsible for the preparation of the consolidated financial statements included in this Annual Report on Form 10-K. The consolidated financial statements were prepared in accordance with the accounting principles generally accepted in the United States of America and include amounts that are based on the best estimates and judgments of management. The other financial information contained in this Annual Report on Form 10-K is consistent with the consolidated financial statements.

Management's Report on Internal Control Over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting. The Company's internal control system is designed to provide reasonable assurance concerning the reliability of the financial data used in the preparation of the Company's consolidated financial statements, as well as reasonable assurance with respect to safeguarding the Company's assets from unauthorized use or disposition.

All internal control systems, no matter how well designed, have inherent limitations. Therefore, even those systems determined to be effective can provide only reasonable assurance with respect to financial statement presentation and other results of such systems.

Management conducted an evaluation of the effectiveness of the Company's internal control over financial reporting as of June 30, 2019. In making this evaluation, management used the criteria set forth by the *Committee of Sponsoring Organizations of the Treadway Commission (COSO) in Internal Control – Integrated Framework (2013).* Management's evaluation included reviewing the documentation of its controls, evaluating the design effectiveness of controls and testing their operating effectiveness. Management excluded from the scope of its assessment of internal control over financial reporting the internal controls of CoAdna Holdings, Inc., which was acquired in September 2018, and Redstone Aerospace Corporation, which was acquired in March 2019. The recent acquisitions excluded from management's assessment of internal controls over financial reporting represented approximately $98.1 million and $84.1 million of total assets and net assets, respectively, as of June 30, 2019 and approximately $15.5 million and $1.2 million of total revenues and net loss, respectively, for the fiscal year then ended. Based on the evaluation, management concluded that as of June 30, 2019, the Company's internal controls over financial reporting were effective.

Ernst & Young LLP, an independent registered public accounting firm, has issued its report on the effectiveness of our internal control over financial reporting as of June 30, 2019. Its report is included herein.

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of II-VI Incorporated and Subsidiaries

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of II-VI Incorporated and Subsidiaries (the Company) as of June 30, 2019 and 2018, the related consolidated statements of earnings, comprehensive income, shareholders' equity and cash flows for each of the three years in the period ended June 30, 2019, and the related notes and the financial statement schedule listed in the Index at Item 15(a)(2) (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at June 30, 2019 and 2018, and the results of its operations and its cash flows for each of the three years in the period ended June 30, 2019, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of June 30, 2019, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated August 16, 2019 expressed an unqualified opinion thereon.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Accounting for acquisition of CoAdna Holdings, Inc.

Description of the Matter

As discussed in Note 3 to the consolidated financial statements, during the year ended June 30, 2019, the Company completed the acquisition of CoAdna Holdings, Inc ("CoAdna") for a total purchase price of approximately $42.8 million, net of cash acquired. The acquisition was accounted for under the acquisition method of accounting whereby the total purchase price was allocated to tangible and intangible assets acquired and liabilities assumed based on the respective fair values.

Auditing the Company's accounting for its acquisition of CoAdna was complex due to the significant estimation uncertainty in determining the fair value of identified intangible assets, which principally consisted of customer relationships and developed technology. The significant estimation uncertainty was primarily due to the sensitivity of the respective fair values to underlying assumptions about the future performance of the acquired business which rely upon innovation and growth within the optical communications market and applicability of the existing offerings to future technologies. The Company used the multi-period excess earnings method and the relief from royalty method to value the customer relationships and developed technology, respectively. The significant assumptions used to estimate the fair value of the customer relationships included the forecasted revenue and earnings generated by the customer relationships and a discount rate that reflected the level of risk associated with the future cash flows attributable to the customer relationships. The significant assumptions used to estimate the fair value of the developed technology included the forecasted revenue generated by the asset group and a discount rate that reflected the level of risk associated with the future revenue attributable to the developed technology. These significant assumptions are forward-looking and could be affected by future economic and market conditions.

How We Addressed the Matter in Our Audit

We tested controls that address the risks of material misstatement relating to the valuation of the customer relationships and developed technology. For example, we tested controls over management's review of the significant assumptions, such as the acquired business's forecasted revenue and earnings and the discount rates used in the valuation.

To test the estimated fair value of the acquired customer relationships and developed technology, our audit procedures included, among others, assessing the appropriateness of the valuation methodologies and testing the significant assumptions discussed above and the underlying data used by the Company. For example, we compared the forecasted revenue and earnings to current industry and economic trends as well as the historic financial performance of the acquired business and its primary customers, and compared the projected revenue growth to the assumptions used in the valuation of the Company's Photonics reporting unit. We also performed sensitivity analyses to evaluate the changes in the fair value of the intangible assets that would result from changes in the significant assumptions. We involved our valuation specialist to assist in evaluating the valuation techniques and discount rate used to value the customer relationships and developed technology, which included comparison of the selected discount rate to the acquired business's weighted average cost of capital, an evaluation of the relationship of the weighted average cost of capital, internal rate of return and weighted-average return on assets, and consideration of implied deal multiples exhibited by recent transactions of guideline public companies.

Accounting for acquisition of Redstone Aerospace Corporation

Description of the Matter

As discussed in Note 3 to the consolidated financial statements, during the year ended June 30, 2019, the Company completed the acquisition of Redstone Aerospace Corporation ("Redstone") for a total purchase price of approximately $29.7 million, net of cash acquired. The acquisition was accounted for under the acquisition method of accounting whereby the total purchase price was allocated to tangible and intangible assets acquired and liabilities assumed based on the respective fair values.

Auditing the Company's accounting for its acquisition of Redstone was complex due to the significant estimation uncertainty in determining the fair value of identified intangible assets, which principally consisted of developed technology. The significant estimation uncertainty was primarily due to the sensitivity of the respective fair value to underlying assumptions about the future performance of the acquired business which rely upon significant revenue growth arising from accelerating the deployment and expansion of the acquired business's operating capacity as well as market-participant based revenue synergies. The Company used the relief from royalty method to value the developed technology. The significant assumptions used to estimate the fair value of the developed technology included the forecasted revenue generated by the asset group and a discount rate that reflected the level of risk associated with the future revenue attributable to the developed technology. These significant assumptions are forward-looking and could be affected by future economic and market conditions.

How We Addressed the Matter in Our Audit

We tested controls that address the risks of material misstatement relating to the valuation of the developed technology. For example, we tested controls over management's review of the significant assumptions, such as the acquired business's forecasted revenue and the discount rate used in the valuation.

To test the estimated fair value of the acquired developed technology, our audit procedures included, among others, assessing the appropriateness of the valuation methodology and testing the significant assumptions discussed above and the underlying data used by the Company. For example, we compared the forecasted revenue growth rate to current industry and economic trends and performed sensitivity analyses to evaluate the changes in the fair value of the intangible asset that would result from changes in the significant assumptions, including the timing of projected revenue growth. We involved our valuation specialist to assist in evaluating the valuation techniques and discount rate used to value the developed technology, which included comparison of the selected discount rate to the acquired business's weighted average cost of capital, an evaluation of the relationship of the weighted average cost of capital, internal rate of return and weighted-average return on assets, and consideration of guideline public company benchmarking analyses reflecting the composition of purchase prices for similar transactions.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 2008.

Pittsburgh, Pennsylvania

August 16, 2019

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of II-VI Incorporated and Subsidiaries

Opinion on Internal Control over Financial Reporting

We have audited II-VI Incorporated and Subsidiaries' internal control over financial reporting as of June 30, 2019, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, II-VI Incorporated and Subsidiaries (the Company) maintained, in all material respects, effective internal control over financial reporting as of June 30, 2019, based on the COSO criteria.

As indicated in the accompanying Management's Report on Internal Control Over Financial Reporting, management's assessment of and conclusion on the effectiveness of internal control over financial reporting did not include the internal controls of CoAdna Holdings, Inc. ("CoAdna") and Redstone Aerospace Corporation ("Redstone"), which are included in the June 30, 2019 consolidated financial statements of the Company and constituted $98.1 million and $84.1 million of total and net assets, respectively, as of June 30, 2019 and $15.5 million and $1.2 million of revenues and net loss, respectively, for the fiscal year then ended. Our audit of internal control over financial reporting of the Company also did not include an evaluation of the internal control over financial reporting of CoAdna and Redstone.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of June 30, 2019 and 2018, the related consolidated statements of earnings, comprehensive income, shareholders' equity and cash flows for each of the three years in the period ended June 30, 2019, and the related notes and the financial statement schedule listed in the Index at Item 15(a)(2) and our report dated August 16, 2019 expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Ernst & Young LLP

Pittsburgh, Pennsylvania

August 16, 2019

II-VI Incorporated and Subsidiaries
Consolidated Balance Sheets
($000)

June 30,	2019	2018
Assets		
Current Assets		
Cash and cash equivalents	$ 204,872	$ 247,038
Accounts receivable - less allowance for doubtful accounts of $1,292 at June 30, 2019 and $837 at June 30, 2018	269,642	215,032
Inventories	296,282	248,268
Prepaid and refundable income taxes	11,778	7,845
Prepaid and other current assets	30,337	43,654
Total Current Assets	812,911	761,837
Property, plant & equipment, net	582,790	524,890
Goodwill	319,778	270,678
Other intangible assets, net	139,324	125,069
Investments	76,208	69,215
Deferred income taxes	8,524	2,046
Other assets	14,238	7,926
Total Assets	$ 1,953,773	$ 1,761,661
Liabilities and Shareholders' Equity		
Current Liabilities		
Current portion of long-term debt	$ 23,834	$ 20,000
Accounts payable	104,462	89,774
Accrued compensation and benefits	71,847	66,322
Accrued income taxes payable	20,476	17,392
Other accrued liabilities	49,944	42,979
Total Current Liabilities	270,563	236,467
Long-term debt	443,163	419,013
Deferred income taxes	23,913	27,241
Other liabilities	82,925	54,629
Total Liabilities	820,564	737,350
Shareholders' Equity		
Preferred stock, no par value; authorized - 5,000,000 shares; none issued	-	-
Common stock, no par value; authorized - 300,000,000 shares; issued - 76,315,337 shares at June 30, 2019; 75,692,683 shares at June 30, 2018	382,423	351,761
Accumulated other comprehensive income (loss)	(24,221)	(3,780)
Retained earnings	943,581	836,064
	1,301,783	1,184,045
Treasury stock, at cost - 12,603,781 shares at June 30, 2019 and 12,395,791 shares at June 30, 2018	(168,574)	(159,734)
Total Shareholders' Equity	1,133,209	1,024,311
Total Liabilities and Shareholders' Equity	$ 1,953,773	$ 1,761,661

See Notes to Consolidated Financial Statements.

II-VI Incorporated and Subsidiaries
Consolidated Statements of Earnings

Year Ended June 30,	**2019**	**2018**	**2017**
($000, except per share data)			
Revenues	$ 1,362,496	$ 1,158,794	$ 972,046
Costs, Expenses and Other Expense (Income)			
Cost of goods sold	841,147	696,591	583,684
Internal research and development	139,163	116,875	96,806
Selling, general and administrative	233,518	208,565	176,000
Interest expense	22,417	18,352	6,809
Other expense (income), net	(2,562)	(3,783)	(10,041)
Total Costs, Expenses and Other Expense (Income)	1,233,683	1,036,600	853,258
Earnings Before Income Taxes	128,813	122,194	118,788
Income Taxes	21,296	34,192	23,514
Net Earnings	$ 107,517	$ 88,002	$ 95,274
Basic Earnings Per Share	$ 1.69	$ 1.41	$ 1.52
Diluted Earnings Per Share	$ 1.63	$ 1.35	$ 1.48

See Notes to Consolidated Financial Statements.

II-VI Incorporated and Subsidiaries
Consolidated Statements of Comprehensive Income

Year Ended June 30,	2019	2018	2017
($000)			
Net earnings	$ 107,517	$ 88,002	$ 95,274
Other comprehensive income (loss):			
Foreign currency translation adjustments	(14,319)	7,152	(2,275)
Pension adjustment, net of taxes of $(1,642), $763, and $674 for the years ended June 30, 2019, 2018, and 2017, respectively	(6,122)	2,846	2,514
Other comprehensive income (loss)	(20,441)	9,998	239
Comprehensive income	$ 87,076	$ 98,000	$ 95,513

See Notes to Consolidated Financial Statements.

II-VI Incorporated and Subsidiaries
Consolidated Statements of Shareholders' Equity

	Common Stock		Accumulated Other Comprehensive	Retained	Treasury Stock		
($000, including share amounts)	Shares	Amount	Income (Loss)	Earnings	Shares	Amount	Total
Balance - June 30, 2016	72,840	$ 243,812	$ (14,017)	$ 652,788	(10,966)	$ (100,245)	$ 782,338
Share-based and deferred compensation activities	1,241	25,826	-	-	26	(3,114)	22,712
Net earnings	-	-	-	95,274	-	-	95,274
Foreign currency translation adjustments	-	-	(2,275)	-	-	-	(2,275)
Pension adjustment, net of taxes of $674	-	-	2,514	-	-	-	2,514
Balance - June 30, 2017	74,081	$ 269,638	$ (13,778)	$ 748,062	(10,940)	$ (103,359)	$ 900,563
Share-based and deferred compensation activities	1,612	25,717	-	-	(41)	(6,500)	19,217
Net earnings	-	-	-	88,002	-	-	88,002
Purchases of treasury stock	-	-	-	-	(1,415)	(49,875)	(49,875)
Foreign currency translation adjustments	-	-	7,152	-	-	-	7,152
Equity portion of convertible debt, net of issuance costs of $1,694	-	56,406	-	-	-	-	56,406
Pension adjustment, net of taxes of $763	-	-	2,846	-	-	-	2,846
Balance - June 30, 2018	75,693	$ 351,761	$ (3,780)	$ 836,064	(12,396)	$ (159,734)	$ 1,024,311
Share-based and deferred compensation activities	622	30,662	-	-	(158)	(7,224)	23,438
Net earnings	-	-	-	107,517	-	-	107,517
Purchases of treasury stock	-	-	-	-	(50)	(1,616)	(1,616)
Foreign currency translation adjustments	-	-	(14,319)	-	-	-	(14,319)
Pension adjustment, net of taxes of ($1,642)	-	-	(6,122)	-	-	-	(6,122)
Balance - June 30, 2019	76,315	$ 382,423	$ (24,221)	$ 943,581	(12,604)	$ (168,574)	$ 1,133,209

See Notes to Consolidated Financial Statements.

II-VI Incorporated and Subsidiaries
Consolidated Statements of Cash Flows

Year Ended June 30,	2019	2018	2017
($000)			
Cash Flows from Operating Activities			
Net earnings	$ 107,517	$ 88,002	$ 95,274
Adjustments to reconcile net earnings to net cash provided by operating activities:			
Depreciation	75,745	66,202	50,894
Amortization	16,620	14,568	12,743
Share-based compensation expense	21,946	15,312	11,756
Amortization of discount on convertible debt and debt issuance costs	12,550	10,057	-
Losses (gains) on foreign currency remeasurements and transactions	3,155	850	(1,275)
Earnings from equity investments	(3,214)	(3,594)	(744)
Deferred income taxes	(10,462)	945	(1,184)
Increase (decrease) in cash from changes in (net of effects of acquisitions):			
Accounts receivable	(50,764)	(21,044)	(26,247)
Inventories	(36,392)	(38,732)	(24,992)
Accounts payable	15,999	17,436	6,704
Contract liabilities	15,889	1,168	2,345
Income taxes	366	7,380	735
Other operating net assets	9,520	2,464	(7,393)
Net cash provided by operating activities	178,475	161,014	118,616
Cash Flows from Investing Activities			
Additions to property, plant & equipment	(137,122)	(153,438)	(138,517)
Purchases of businesses, net of cash acquired	(83,067)	(80,503)	(40,015)
Purchases of equity investments	(4,480)	(52,056)	-
Other investing activities	693	1,047	1,291
Net cash used in investing activities	(223,976)	(284,950)	(177,241)
Cash Flows from Financing Activities			
Proceeds from issuance of 0.25% convertible senior notes due 2022	-	345,000	-
Proceeds from borrowings under Credit Facility	150,000	100,000	129,000
Proceeds from exercises of stock options	8,698	10,469	15,092
Payments on borrowings under Credit Facility	(135,000)	(292,000)	(25,000)
Payments in satisfaction of employees' minimum tax obligations	(7,092)	(6,564)	(4,136)
Debt issuance costs	(5,589)	(10,061)	(1,384)
Payments on earnout considerations	(4,524)	-	(2,000)
Purchases of treasury stock	(1,616)	(49,875)	-
Net cash provided by financing activities	4,877	96,969	111,572
Effect of exchange rate changes on cash and cash equivalents	(1,542)	2,117	496
Net (decrease) increase in cash and cash equivalents	(42,166)	(24,850)	53,443
Cash and Cash Equivalents at Beginning of Period	247,038	271,888	218,445
Cash and Cash Equivalents at End of Period	$ 204,872	$ 247,038	$ 271,888
Non cash transactions:			
Purchases of business - earnout consideration recorded in other accrued liabilities	$ 4,397	$ -	$ 2,250
Capital lease obligation incurred on facility lease	$ -	$ -	$ 25,000
Additions to property, plant & equipment included in accounts payable and accrued liabilities	$ 10,986	$ 12,313	$ 4,428

See Notes to Consolidated Financial Statements.

II-VI Incorporated and Subsidiaries
Notes to the Consolidated Financial Statements

Note 1. Nature of Business and Summary of Significant Accounting Policies

Nature of Business. II-VI Incorporated and its subsidiaries (the "Company," "we," "us," or "our"), a global leader in engineered materials and optoelectronic components and devices, is a vertically-integrated manufacturing company that develops, manufactures and markets engineered materials and optoelectronic components and devices for precision use in industrial materials processing, optical communications, aerospace and defense, consumer electronics, semiconductor capital equipment, life sciences and automotive applications. The Company markets its products through its direct sales force and through distributors and agents.

The Company uses certain uncommon materials and compounds to manufacture its products. Some of these materials are available from only one proven outside source. The continued high quality of these materials is critical to the stability of the Company's manufacturing yields. The Company has not experienced significant production delays due to a shortage of materials. However, the Company does occasionally experience problems associated with vendor-supplied materials not meeting specifications for quality or purity. A significant failure of the Company's suppliers to deliver sufficient quantities of necessary high-quality materials on a timely basis could have a material adverse effect on the Company's results of operations.

Principles of Consolidation. The Consolidated Financial Statements include the accounts of the Company. All intercompany transactions and balances have been eliminated.

Estimates. The preparation of financial statements in conformity with accounting principles generally accepted in the United States ("U.S. GAAP") requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Foreign Currency Translation. For II-VI Singapore Pte., Ltd. and its subsidiaries, II-VI Laser Enterprise of the II-VI Laser Solutions segment, II-VI Network Solutions Division of the II-VI Photonics segment, and II-VI Performance Metals of the II-VI Performance Products segment, the functional currency is the United States (U.S.) dollar. The determination of the functional currency is made based on the appropriate economic and management indicators.

For all other foreign subsidiaries, the functional currency is the local currency. Assets and liabilities of those operations are translated into U.S. dollars using period-end exchange rates while income and expenses are translated using the average exchange rates for the reporting period. Translation adjustments are recorded as accumulated other comprehensive income within shareholders' equity in the accompanying Consolidated Balance Sheets.

Cash and Cash Equivalents. The Company considers highly liquid investment instruments with an original maturity of three months or less to be cash equivalents. We place our cash and cash equivalents with high credit quality financial institutions and to date have not experienced credit losses in these instruments. Cash of foreign subsidiaries is on deposit at banks in China, Vietnam, Singapore, Japan, Switzerland, the Netherlands, Germany, the Philippines, Belgium, Italy, Hong Kong, the United Kingdom, South Korea and Taiwan.

Accounts Receivable. The Company establishes an allowance for doubtful accounts based on historical experience and believes the collection of revenues, net of this allowance, is reasonably assured.

Inventories. Inventories are valued at the lower of cost or net realizable value, with cost determined on the first-in, first-out basis. Inventory costs include material, labor and manufacturing overhead. In evaluating the net realizable value of inventory, management also considers, if applicable, other factors, including known trends, market conditions, currency exchange rates and other such issues. The Company generally records a reduction to the carrying value of inventory as a charge against earnings for all products on hand more than 12 to 24 months, depending on the products that have not been sold to customers or cannot be further manufactured for sale to alternative customers. An additional charge may be recorded for product on hand that is in excess of product sold to customers over the same periods noted above. The cumulative adjustments to the carrying value of inventory totaled $23.5 million and $22.5 million at June 30, 2019 and 2018, respectively.

Property, Plant and Equipment. Property, plant and equipment are carried at cost or fair value upon acquisition. Major improvements are capitalized, while maintenance and repairs are generally expensed as incurred. The Company reviews its property, plant and equipment and other long-lived assets for impairment whenever events or circumstances indicate that the carrying amounts may not be recoverable. Depreciation for financial reporting purposes is computed primarily by the straight-line method over the estimated useful lives for building, building improvements and land improvements of 10 to 20 years and three to 20 years for machinery and equipment.

Business Combinations. The Company accounts for business acquisitions by establishing the acquisition-date fair value as the measurement for all assets acquired and liabilities assumed. Certain provisions of U.S. GAAP prescribe, among other things, the determination of acquisition-date fair value of consideration paid in a business combination (including contingent consideration) and the exclusion of transaction and acquisition-related restructuring costs from acquisition accounting.

Goodwill. The excess purchase price over the fair value allocated to identifiable tangible and intangible net assets of businesses acquired is reported as goodwill in the accompanying Consolidated Balance Sheets. The Company tests goodwill for impairment at least annually as of April 1, or when events or changes in circumstances indicate that goodwill might be impaired. The evaluation of impairment involves comparing the current fair value of the Company's reporting units to the recorded value (including goodwill). The Company uses a discounted cash flow ("DCF") model and/or a market analysis to determine the fair value of its reporting units. A number of assumptions and estimates are involved in estimating the forecasted cash flows used in the DCF model, including markets and market shares, sales volume and pricing, costs to produce, working capital changes and income tax rates. Management considers historical experience and all available information at the time the fair values of the reporting units are estimated. Goodwill impairment is now measured as the amount by which a reporting unit's carrying value exceeds its fair value, not to exceed the carrying amount of goodwill.

The Company has the option to perform a qualitative assessment of goodwill prior to completing the quantitative assessment described above to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying amount, including goodwill and other intangible assets. If the Company concludes that this is the case, it must perform the quantitative assessment. Otherwise, the Company will forego the quantitative assessment and does not need to perform any further testing. As of April 1 of fiscal years 2019 and 2018, the Company completed its annual impairment tests of its reporting units using the quantitative assessment. Based on the results of these analyses the Company's goodwill was not impaired.

Intangibles. Intangible assets are initially recorded at their cost or fair value upon acquisition. Finite-lived intangible assets are amortized for financial reporting purposes using the straight-line method over the estimated useful lives of the assets ranging from five to 20 years. Indefinite-lived intangible assets are not amortized but tested annually for impairment at April 1st, or when events or changes in circumstances indicate that indefinite-lived intangible assets might be impaired.

Investments in Other Entities. In the normal course of business, the Company enters into various types of investment arrangements, each having unique terms and conditions. These investments may include equity interests held by the Company in business entities, including general or limited partnerships, contractual ventures, or other forms of equity participation. The Company determines whether such investments involve a variable interest entity ("VIE") based on the characteristics of the subject entity. If the entity is determined to be a VIE, then management determines if the Company is the primary beneficiary of the entity and whether or not consolidation of the VIE is required. The primary beneficiary consolidating the VIE must normally have both (i) the power to direct the activities of a VIE that most significantly affect the VIE's economic performance and (ii) the obligation to absorb losses of the VIE or the right to receive benefits from the VIE, in either case that could potentially be significant to the VIE. When the Company is deemed to be the primary beneficiary, the VIE is consolidated and the other party's equity interest in the VIE is accounted for as a noncontrolling interest.

The Company generally accounts for investments it makes in VIEs in which it has determined that it does not have a controlling financial interest but has significant influence over and holds at least a 20% ownership interest using the equity method. Any such investment not meeting the parameters to be accounted under the equity method would be accounted for under ASU 2016-01.

If an entity fails to meet the characteristics of a VIE, management then evaluates such entity under the voting model. Under the voting model, management consolidates the entity if they determine that the Company, directly or indirectly, has greater than 50% of the voting shares and determines that other equity holders do not have substantive participating rights.

Commitments and Contingencies. Liabilities for loss contingencies arising from claims, assessments, litigation, fines, and penalties and other sources are recorded when it is probable that a liability has been incurred and the amount of the assessment and/or remediation can be reasonably estimated. Legal costs incurred in connection with loss contingencies are expensed as incurred. Such accruals are adjusted as further information develops or circumstances change. Our customers may discover defects in our products after the products have been fully deployed and operated under peak stress conditions. If we are unable to correct defects or other problems, we could experience, among other things, loss of customers, increased costs of product returns and warranty expenses, damage to our brand reputation, failure to attract new customers or achieve market acceptance, diversion of development and engineering resources, or legal action by our customers. The Company had no material loss contingency liabilities at June 30, 2019 related to commitments and contingencies.

Income Taxes. Deferred income tax assets and liabilities are determined based on the differences between the consolidated financial statement and tax basis of assets and liabilities using enacted tax rates in effect in the years in which the differences are expected to reverse. Valuation allowances are established when necessary to reduce deferred income tax assets to the amount more likely than not to be realized.

The Company recognizes the tax benefit from an uncertain tax position only if it is more likely than not that the tax position will be sustained on examination by the taxing authorities, based on the technical merits of the position. The tax benefits recognized in the financial statements from such a position are measured based on the largest benefit that has a greater than 50% likelihood of being realized upon ultimate resolution. The amount of unrecognized tax benefits is adjusted for changes in facts and circumstances. For example, adjustments could result from significant amendments to existing tax law and the issuance of regulations or interpretations by the taxing authorities, new information obtained during a tax examination, or resolution of an examination. The Company believes that its estimates for uncertain tax positions are appropriate and sufficient to pay assessments that may result from examinations of its tax returns. The Company recognizes both accrued interest and penalties related to unrecognized tax benefits in income tax expense.

Revenue Recognition. Revenue is recognized under ASC 606 when or as obligations under the terms of a contract with the Company's customer have been satisfied and control has transferred to the customer. The Company has elected to exclude all taxes from the measurement of the transaction price.

For contracts with commercial customers, which comprise the majority of the Company's performance obligations, ownership of the goods and associated revenue are transferred to customers at a point in time, generally upon shipment of a product ("Direct Ship Parts") to the customer or receipt of the product by the customer and without significant judgments. The majority of contracts typically require payment within 30 to 60 days after transfer of ownership to the customer.

Contracts with the United States ("U.S.") government through its prime contractors are typically for products or services with no alternative future use to the Company with an enforceable right to payment for performance completed to date, whereas commercial contracts typically have alternative use. Customized products with no alternative future use to the Company with an enforceable right to payment for performance completed to date are recorded over time utilizing the output method of units delivered. The Company considers this to be a faithful depiction of the transfer to the customer of revenue over time due to short cycle time and immaterial work-in-process balances. The majority of contracts typically require payment within 30 to 60 days after transfer of ownership to the customer.

Service revenue includes repairs, non-recurring engineering, tolling arrangements and installation. Repairs, tolling and installation activities are usually completed in a short period of time (normally less than one month) and therefore recorded at a point in time when the services are completed. Non-recurring engineering arrangements are typically recognized over time under the time and material practical expedient, as the entity has a right to consideration from a customer, in an amount that corresponds directly with the value to the customer of the entity's performance completed to date. The majority of contracts typically require payment within 60 days.

The Company's revenue recognition policy is consistently applied across the Company's segments, product lines and geographical locations. Further for the periods covered herein, we did not have post shipment obligations such as training or installation, customer acceptance provisions, credits and discounts, rebates and price protection, or other similar privileges. Our distributors and agents are not granted price protection. Our distributors and agents, which comprise less than 10% of consolidated revenues, have no additional product return rights beyond the right to return defective products covered by our warranty policy.

Under ASC 606, the Company expenses sales commissions when incurred because the amortization period would have been one year or less. These costs are recorded within selling, general and administration expenses. The Company has elected to recognize the costs for freight and shipping when control over products has transferred to the customer as an expense in cost of sales.

The Company monitors and tracks the amount of product returns and reduces revenue at the time of shipment for the estimated amount of future returns, based on historical experience. The Company makes estimates evaluating its allowance for doubtful accounts. The Company continuously monitors collections and payments from its customers and maintains a provision for estimated credit losses based upon its historical experience and any specific customer collection issues that it has identified.

The Company offers an assurance-type limited warranty that products will be free from defects in materials and workmanship. The warranty is typically one year or the industry standard in length and is limited to either (1) the replacement or repair of the product or (2) a credit against future purchases. The products are not sold with a right of return.

The Company has elected not to disclose the aggregate amount of the transaction price allocated to unsatisfied performance obligations, as our contracts have an original expected duration of less than one year.

Research and Development. Internal research and development costs and costs not related to customer and government funded research and development contracts are expensed as incurred.

Share-Based Compensation. Share-based compensation arrangements require the recognition of the grant-date fair value of stock compensation in net earnings. The Company recognizes the share-based compensation expense over the requisite service period of the individual grantees, which generally equals the vesting period.

Accumulated Other Comprehensive Income. Accumulated other comprehensive income is a measure of all changes in shareholders' equity that result from transactions and other economic events in the period other than transactions with owners. Accumulated other comprehensive (loss) income is a component of shareholders' equity and consists of accumulated foreign currency translations adjustments and pension adjustments.

Fair Value Measurements. The Company applies fair value accounting for all financial assets and liabilities that are required to be recognized or disclosed at fair value in the financial statements. Fair value is defined as the price that would be received from selling an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. When determining the fair value measurements for assets and liabilities, the Company considers the principal or most advantageous market in which the Company would transact, and the market-based risk measurements or assumptions that market participants would use in pricing the asset or liability, such as inherent risk, transfer restrictions and credit risk.

Operating Leases. The Company classifies operating leases in accordance with the provisions of lease accounting. Rent expense under noncancelable operating leases with scheduled rent increases or rent holidays is accounted for on a straight-line basis over the lease term, beginning on the date of initial possession or the effective date of the lease agreement. The amount of the excess straight-line rent expense over scheduled payments is recorded as a deferred liability. The current portion of unamortized deferred lease costs is included in other accrued liabilities and the long-term portion is included in other liabilities in the Consolidated Balance Sheets.

Capital Leases. The Company accounts for capital leases at the lesser of the estimated fair market value of the leased property or the net present value of the aggregate future minimum lease payments. The current and long-term portion of the capital lease obligation is recorded in other accrued liabilities and other liabilities, respectively, in the Consolidated Balance Sheet. Capital lease assets are included in property, plant & equipment and are generally depreciated over the term of the lease. Interest expense on capital leases are included in interest expense in the Consolidated Statements of Earnings.

Recently Issued Financial Accounting Standards

Revenue Recognition Pronouncement

In May 2014, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2014-09, Revenue from Contracts with Customers (Topic 606). The standard requires an entity to recognize revenue in a manner that depicts the transfer of goods or services to customers at an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. The Company adopted this standard on July 1, 2018 using the modified retrospective method of adoption applied to all contracts at that date. Adoption of the ASU did not require an adjustment to the opening balance of equity. The standard did not have a significant effect on its results of operations, liquidity or financial position in fiscal year 2019. The Company implemented processes and controls to ensure new contracts are reviewed for the appropriate accounting treatment and to generate the disclosures required under the new standard. For the disclosures required by this ASU, see Note 5, Revenue from Contracts with Customers.

Other Adopted Pronouncements

In August 2018, the FASB issued ASU 2018-14, Disclosure Framework – Changes to the disclosure framework requirements for Defined Benefit Plans. This update defined a narrower set of disclosures required on the basis of an evaluation of whether the expected benefits of entities providing the information justify the expected costs. The adoption of this standard did not have a material effect on the Company's Consolidated Financial Statements.

In August 2018, the FASB issued ASU 2018-13, Fair Value Measurement (Topic 820): Disclosure Framework – Changes to the disclosure requirements for fair value measurements. This update defined a narrower set of disclosures required on the basis of an evaluation of whether the expected benefits of entities providing the information justify the expected costs. The adoption of this standard did not have a material effect on the Company's Consolidated Financial Statements.

In March 2017, the FASB issued ASU 2017-07, Compensation (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost. This update affects employers' presentation of defined benefit retirement plan costs. With the adoption of this standard, the Company restated the prior periods ending June 30, 2018, 2017, and 2016. These restatements did not have a material effect on the Company's Consolidated Financial Statements.

In January 2017, the FASB issued ASU 2017-01, Business Combinations (Topic 805): Clarifying the Definition of a Business. This update changes the definition of a business to assist entities with evaluating when a set of transferred assets and activities is a business. The adoption of this standard did not have a material effect on the Company's Consolidated Financial Statements.

In October 2016, the FASB issued ASU 2016-16, Income Taxes (Topic 740): Intra-Entity Transfers of Assets Other Than Inventory. This update requires that when intra-entity asset transfers occur, the entity must recognize tax effects in the period in which the transfer occurs. The adoption of this standard did not have a material effect on the Company's Consolidated Financial Statements.

In August 2016, the FASB issued ASU 2016-15, Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments. The guidance clarifies how entities should classify certain cash receipts and cash payments on the statement of cash flows. The guidance also clarifies how the predominance principle should be applied when cash receipts and cash payments have aspects of more than one class of cash flow. The adoption of this standard did not have a material effect on the Company's Consolidated Financial Statements.

Pronouncements Currently Under Evaluation

In February 2016, the FASB issued ASU 2016-02, Leases (Topic 842). This update modifies lease accounting for lessees to increase transparency and comparability by recording lease assets and liabilities for operating leases and disclosing key information about leasing arrangements. The new standard will become effective for the Company's fiscal year 2020, which begins on July 1, 2019. During fiscal year 2019, we conducted a survey to identify all leases across the organization (including embedded leases). We identified that a majority of our leases are categorized into one of three categories: office equipment, real estate and vehicles. We are finalizing the accumulation of lease data, including new leases entered into at the end of fiscal year 2019, and preparing the final transition adjustment calculations. We estimate that total assets and total liabilities will increase within the range of $90 million and $120 million on July 1, 2019 when the ASU is adopted.

In July 2018, the FASB issued targeted improvements to ASU 2016-02 in ASU 2018-11. This update provides entities with an optional transition method, which permits an entity to initially apply the new leases standard at the adoption date and recognize a cumulative-effect adjustment to the opening balance of retained earnings in the period of adoption. We expect to use this new transition approach and the comparative periods presented in our fiscal 2020 consolidated financial statements will continue to be reported in accordance with ASC 840, Leases. We anticipate that we will elect the package of practical expedients allowed in the standard, which among other things, allows us to carry forward our historical lease classification. We also anticipate that we will make an accounting policy election to use the practical expedient allowed in the standard to not separate lease and non-lease components when calculating the lease liability under Topic 842.

In July 2016, the FASB issued ASU No. 2016-13, Financial Instruments – Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments ("ASU 2016-13"), which among other things, requires the measurement of all expected credit losses of financial assets held at the reporting date based on historical experience, current conditions, and reasonable and supportable forecasts. Financial institutions and other organizations will now use forward looking information to better inform their credit loss estimates. In addition, the ASU amends the accounting for credit losses on available-for-sale debt securities and purchased financial assets with credit deterioration. ASU 2016-13 is effective for periods beginning after December 15, 2019, and interim periods within those fiscal years. The Company is in the process of evaluating the impact of the pronouncement.

Note 2. Pending Merger

II-VI and Finisar Corporation ("Finisar") have entered into an Agreement and Plan of Merger, dated as of November 8, 2018 (the "Merger Agreement"). Pursuant to the terms of the Merger Agreement, Mutation Merger Sub Inc., a Delaware corporation and wholly owned subsidiary of II-VI, will be merged with and into Finisar, and Finisar will continue as the surviving corporation in the merger and a wholly owned subsidiary of II-VI (the "Merger").

If the Merger is consummated, Finisar stockholders will be entitled to receive, at their election, consideration per share of common stock of Finisar (the "Finisar Common Stock") consisting of (i) $26.00 in cash, without interest (the "Cash Election Consideration"), (ii) 0.5546 shares of II-VI common stock (the shares, the "II-VI Common Stock," and the consideration, the "Stock Election Consideration"), or (iii) a combination of $15.60 in cash, without interest, and 0.2218 shares of II-VI Common Stock (the "Mixed Election Consideration," and, together with the Cash Election Consideration and the Stock Election Consideration, the "Merger Consideration"). The Cash Election Consideration and the Stock Election Consideration are subject to proration adjustment pursuant to the terms of the Merger Agreement such that the aggregate Merger Consideration will consist of approximately 60% cash and approximately 40% II-VI Common Stock (assuming a per share price of II-VI common stock equal to the price when the Merger Agreement was signed on November 8, 2018, which was $46.88 per share) regardless of the individual election.

At the effective time of the Merger (the "Effective Time"), each option granted pursuant to Finisar's 2005 Stock Incentive Plan, as such plan has been further amended and restated (each, a "Finisar Stock Option"), or portion thereof, that is outstanding and unexercised as of immediately prior to the Effective Time (whether vested or unvested) will be cancelled, terminated and converted into the right to receive an amount of Mixed Election Consideration that would be payable to a holder of such number of shares of Finisar Common Stock equal to the quotient of (i) the product of (a) the excess, if any, of $26.00 over the exercise price per share of such Finisar Stock Option *multiplied by* (b) the number of shares of Finisar Common Stock subject to such Finisar Stock Option, *divided by* (ii) $26.00.

At the Effective Time, each restricted stock unit granted pursuant to Finisar's 2005 Stock Incentive Plan, as such plan has been further amended and restated, each, a "Finisar Restricted Stock Unit"), or portion thereof, that is outstanding and subject to a performance-based vesting condition that relates solely to the value of Finisar Common Stock will, to the extent such Finisar Restricted Stock Unit vests in accordance with its terms in connection with the Merger (the "Participating RSUs"), be cancelled and extinguished and converted into the right to receive the Cash Election Consideration, the Stock Election Consideration or the Mixed Election Consideration at the election of the holder of such Participating RSUs, subject to proration adjustment.

At the Effective Time, each Finisar Restricted Stock Unit (or portion thereof) that is outstanding and unvested, does not vest in accordance with its terms in connection with the Merger and is either (x) subject to time-based vesting requirements only or (y) subject to a performance-based vesting condition other than the value of Finisar Common Stock will be assumed by II-VI (each, an "Assumed RSU"). Each Assumed RSU will be subject to substantially the same terms and conditions as applied to the related Finisar Restricted Stock Unit immediately prior to the Effective Time, including the vesting schedule (and the applicable performance-vesting conditions in the case of a grant contemplated by clause (y) of the preceding sentence) and any provisions for accelerated vesting applicable thereto, except that the number of shares of II-VI Common Stock subject to each Assumed RSU will be equal to the product of (i) the number of shares of Finisar Common Stock underlying such unvested Finisar Restricted Stock Unit award as of immediately prior to the Effective Time multiplied by (ii) the sum of (a) 0.2218 plus (b) the quotient obtained by dividing (1) $15.60 by (2) the volume weighted average price per share of II-VI Common Stock (rounded to the nearest cent) on the Nasdaq Global Select Market for the ten consecutive trading days ending on (and including) the third trading day immediately prior to the Effective Time (with the resulting number rounded down to the nearest whole share).

II-VI filed with the Securities and Exchange Commission a registration statement on Form S-4 relating to the Merger, and that registration statement became effective in accordance with the provisions of Section 8(a) of the Securities Act of 1933, as amended, on February 7, 2019. Shareholders of II-VI and stockholders of Finisar voted to approve proposals related to the Merger at special meetings held on March 26, 2019 by the respective companies.

The waiting period under the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended, with respect to the Merger has expired without a request for additional information. Other regulatory approvals applicable to the Merger have been obtained in Germany, Mexico and Romania.

On November 8, 2018, in connection with its entry into the Merger Agreement, II-VI entered into a commitment letter (together with a related fee letter) with Bank of America, N.A., which was subsequently amended and restated on December 7, 2018 and on December 14, 2018 (together with one or more related fee letters, the "Commitment Letter"). Subject to the terms and conditions set forth in the Commitment Letter, the lender parties thereto severally committed to provide 100% of up to $2.425 billion in aggregate principal amount of senior secured credit facilities of II-VI.

On March 4, 2019, II-VI entered into a Credit Agreement (the "New Credit Agreement"), by and among the Company, Bank of America, N.A., as Administrative Agent, Swing Line Lender and a L/C Issuer, and the other lenders party thereto. Pursuant to the terms and subject to the conditions therein, the New Credit Agreement provides for senior secured financing of $1.625 billion in the aggregate, consisting of (i) a five-year senior secured first-lien term A loan facility in an aggregate principal amount of $1.175 billion (the "Term A Facility") and (ii) a five-year senior secured first-lien revolving credit facility in an aggregate principal amount of $450.0 million (the "Revolving Credit Facility" and together with the Term A Facility, the "New Senior Credit Facilities"). The New Credit Agreement also provides for a letter of credit sub-facility not to exceed $25.0 million and a swing loan sub-facility initially not to exceed $20.0 million, subject to adjustment in accordance with the terms of the New Credit Agreement. II-VI anticipates using the proceeds from the Term A Facility, together with a separately committed term B loan facility in an aggregate principal amount of up to $720.0 million (the "Term B Facility") and cash and short-term investments of II-VI and Finisar, to pay the cash portion of the merger consideration payable in connection with the Merger and related fees and expenses. II-VI currently does not intend to draw on the Revolving Credit Facility in order to fund the cash portion of the merger consideration payable in connection with the Merger.

The funding obligations of the lenders under the New Senior Credit Facilities are subject to certain currently unsatisfied conditions, including the consummation of the Merger. Accordingly, no borrowings are currently outstanding under the New Senior Credit Facilities, and II-VI currently is not able to borrow under the New Senior Credit Facilities. Further, II-VI expects that the New Credit Agreement will be amended prior to the Closing Date to reflect syndication of the Term B Facility and to finalize certain other terms in the New Credit Agreement. Upon the consummation of the Merger, the New Senior Credit Facilities, governed by the New Credit Agreement as it may be amended as of such time, will be used (i) to refinance in full the Amended Credit Facility (as defined in Note 9) and (ii) on or after the date of the consummation of the Merger, to repay amounts owed in connection with Finisar's outstanding convertible notes, currently in an aggregate principal amount outstanding of $575.0 million, including the proceeds of a portion of the Term A Facility which will be available to II-VI for a certain period after the initial funding under the New Senior Credit Facilities.

Unless and until the Merger is consummated and the other currently unsatisfied conditions to the funding obligations of the lenders under the New Senior Credit Facilities are satisfied or waived, the Amended Credit Facility remains in effect in accordance with its terms.

The completion of the Merger is subject to the satisfaction or waiver of certain additional customary closing conditions, including review and approval of the Merger by the State Administration for Market Regulation in China. The Company is planning to refile with the State Administration for Market Regulation in China, extending the approval period. Subject to the satisfaction or waiver of each of the closing conditions, II-VI and Finisar expect that the Merger will be completed in the second half of calendar 2019. However, it is possible that factors outside the control of both companies could result in the Merger being completed at a different time or not at all.

Note 3. Acquisitions

CoAdna, Inc.

In September 2018, the Company acquired CoAdna Holdings, Inc. ("CoAdna"), a previously publicly traded company on the Taiwan Stock Exchange with headquarters in Sunnyvale, CA, in a cash transaction valued at approximately $85.0 million, inclusive of cash acquired of approximately $42.2 million at closing.

CoAdna is a global leader in wavelength selective switches based on its patented liquid crystal platform. CoAdna operates within the Company's II-VI Photonics operating segment.

The following table presents the final allocation of the purchase price of the assets acquired and liabilities assumed at the date of acquisition ($000):

Assets		
Accounts receivable	$	5,684
Inventories		6,189
Prepaid and other assets		2,454
Property, plant & equipment		3,181
Intangible assets		16,072
Goodwill		24,898
Total assets acquired	$	58,478
Liabilities		
Accounts payable	$	4,006
Other accrued liabilities		4,103
Long term accrued income taxes		6,656
Deferred tax liabilities		897
Total liabilities assumed		15,662
Net assets acquired	$	42,816

The goodwill of $24.9 million is included in the II-VI Photonics segment and is attributed to the expected synergies and the assembled workforce of CoAdna. None of the goodwill is deductible for income tax purposes. The fair value of accounts receivable acquired was $5.7 million, with the gross contractual amount being $5.7 million. The Company expensed transaction costs during the year ended June 30, 2019 of $1.9 million.

The amount of revenues of CoAdna included in the Company's Consolidated Statements of Earnings for the year ended June 30, 2019 was $12.4 million, excluding sales to customers through our sales offices. The amount of net loss of CoAdna included in the Company's Consolidated Statement of Earnings for the year ended June 30, 2019 was $0.6 million.

Purchase of a Product Line

In November 2018, the Company acquired certain assets of a product line in a cash transaction valued at approximately $10.0 million. The transaction was accounted for as a business combination under ASC 805 and ASU 2017-01, Business Combinations (Topic 805): Clarifying the Definition of a Business. In conjunction with the acquisition of the product line, the Company acquired inventory of $0.2 million, equipment of $2.3 million, acquired technology of $6.3 million, and recorded goodwill of $1.2 million. The goodwill is deductible for income tax purposes. The goodwill is recorded in the II-VI Photonics segment and is attributable to the workforce acquired as part of the transaction. Transaction expenses for this acquisition were insignificant for the year ended June 30, 2019.

Redstone Aerospace Corporation

In March 2019, the Company acquired Redstone Aerospace Corporation ("Redstone"), an aerospace and defense company located in Colorado. Redstone has unique capabilities to continue our growth in the emerging high-energy market. The consideration consisted of initial cash paid at the acquisition date of $28.0 million, net of cash acquired. In addition, the acquisition agreement provides up to a maximum of $2.0 million of additional cash earn out opportunities based on achievement of certain agreed-upon financial objectives.

The following table presents the final purchase price at the date of acquisition ($000):

Net cash paid at acquisition	$	27,959
Fair value of cash earnout arrangement		1,776
Purchase price	$	29,735

The following table presents a final allocation of the purchase price of the assets acquired and liabilities assumed at the date of acquisition ($000):

Assets		
Accounts receivable	$	1,606
Other Assets		215
Property, plant & equipment		350
Intangible assets		9,100
Goodwill		21,596
Total assets acquired	$	32,867
Liabilities		
Non-Interest bearing liabilities	$	980
Deferred tax liabilities		2,152
Total liabilities assumed		3,132
Net assets acquired	$	29,735

The goodwill of $21.6 million is recorded in the II-VI Performance Products segment and is attributed to the expected synergies and the assembled workforce of Redstone. The goodwill is non-deductible for income tax purposes. At the time of the acquisition, the Company expected to collect all of the accounts receivable. Transaction expenses for this acquisition were insignificant for the year ended June 30, 2019.

The amount of revenues and net earnings from the acquisition included in the Company's Consolidated Statements of Earnings for the year ended June 30, 2019 were insignificant.

Note 4. Other Investments

Purchase of Equity Investment

In November 2017, the Company acquired a 93.8% equity investment in a privately-held company for $51.5 million. The Company's pro-rata share of earnings from this investment since the acquisition date was $1.3 million and $2.4 million for the years ended June 30, 2019 and 2018, respectively, and was recorded in other expense (income), net in the Consolidated Statement of Earnings.

This investment is accounted for under the equity method of accounting ("Equity Investment"). The following table summarizes the Company's equity in this nonconsolidated investment:

Location	Interest Type	Ownership % as of June 30, 2019	Equity as of June 30, 2019 ($000)
USA	Equity Investment	93.8%	$ 57,645

The Equity Investment has been determined to be a variable interest entity because the Company has an overall 93.8% economic position in the investee, comprising a significant portion of its capitalization, but has only a 25% voting interest. The Company's obligation to receive rewards and absorb expected losses is disproportionate to its voting interest. The Company is not the primary beneficiary because it does not have the power to direct the activities of the equity investment that most significantly impact its economic performance. Certain business decisions, including decisions with respect to operating budgets, material capital expenditures, indebtedness, significant acquisitions or dispositions, and strategic decisions, require the approval of owners holding a majority percentage in the Equity Investment. Beginning on the date it was acquired, the Company accounted for its interest as an equity method investment as the Company has the ability to exercise significant influence over operating and financial policies of the Equity Investment.

As of June 30, 2019, the Company's maximum financial statement exposure related to the Equity Investment was approximately $57.6 million, which is included in Investments on the Consolidated Balance Sheet as of June 30, 2019.

The Company has the right to purchase all of the outstanding interest of each of the minority equity holders and the minority equity holders have the right to cause the Company to purchase all of their outstanding interests at any time on or after the third anniversary of the investment, or earlier upon certain events. The purchase price is equal to the greater of: (a) (i) the product of the aggregate trailing 12-month revenues of the equity investment preceding the date of purchase, multiplied by (ii) a factor of 2.9 multiplied by (iii) a factor of 0.723, multiplied by (iv) the percentage interest owned by each minority equity holder and (b) $966,666. The Company performed a Monte Carlo simulation to estimate the fair value of the net put option at the investment date and recorded a liability of $2.2 million in Other long-term liabilities in the Consolidated Balance Sheet in accordance with ASC 815-10, Derivatives and Hedging. The fair value of the net put option is adjusted as necessary on a quarterly basis, with any changes in the fair value recorded through earnings. The change in fair value of the net purchase option from the investment date to June 30, 2019 was not material.

Guangdong Fuxin Electronic Technology Equity Investment

The Company has an equity investment of 20.2% in Guangdong Fuxin Electronic Technology, based in Guangdong Province, China, which is accounted for under the equity method of accounting. The total carrying value of the investment recorded at June 30, 2019 and June 30, 2018 was $14.1 million and $12.9 million, respectively. During the years ended June 30, 2019, 2018 and 2017, the Company's pro-rata share of earnings from this investment was $1.9 million, $1.2 million and $0.7 million, respectively, and was recorded in other expense (income), net in the Consolidated Statements of Earnings. During the years ended June 30, 2019, 2018 and 2017, the Company received dividends from this equity investment of $0.7 million, $0.4 million and $0.4 million, respectively.

Other Equity Investment

During the quarter ended September 30, 2018, the Company acquired a 10% equity investment in a privately-held company for $4.5 million. The Company has determined that the equity interest does not give it the ability to exercise significant influence or joint control. Therefore, the Company will not account for this investment under the equity method of accounting. Under ASU 2016-01, Financial Instruments, the Company has elected the measurement alternative, as the investment does not have a readily determinable fair value. Under the alternative, the Company measures the investment at cost, less any impairment, plus or minus changes resulting from observable price changes in orderly transactions for identical or similar investment of the Company for which there were none during the year ended June 30, 2019.

Note 5. Revenue from Contracts with Customers

The following table summarizes disaggregated revenue by market and product for the year ended June 30, 2019 ($000):

	Twelve Months Ended June 30, 2019			
	II-VI Laser Solutions	II-VI Photonics	II-VI Performance Products	Total
Commercial				
Direct Ship Parts	$ 382,066	$ 631,407	$ 181,036	$ 1,194,509
Services	3,738	7,482	10,426	21,646
U.S. Government				
Direct Ship Parts	$ 10,751	$ -	$ 119,562	$ 130,313
Services	18	-	16,010	16,028
Total Revenues	$ 396,573	$ 638,889	$ 327,034	$ 1,362,496

Contract Liabilities

Payments received from customers are based on invoices or billing schedules as established in contracts with customers. Contract liabilities relate to billings in advance of performance under the contract. Contract liabilities are recognized as revenue when the performance obligation has been performed. During the year ended June 30, 2019, the Company recognized revenue of $3.4 million related to customer payments that were included in the consolidated balance sheet as of July 1, 2018. As of June 30, 2019, the Company had $19.4 million of contract liabilities recorded in the consolidated balance sheet.

Note 6. Inventories

The components of inventories were as follows:

June 30,	2019	2018
($000)		
Raw materials	$ 119,917	$ 97,502
Work in progress	101,091	83,002
Finished goods	75,274	67,764
	$ 296,282	$ 248,268

Note 7. Property, Plant & Equipment

Property, plant & equipment consist of the following:

June 30,	2019	2018
($000)		
Land and land improvements	$ 9,001	$ 9,072
Buildings and improvements	249,238	216,507
Machinery and equipment	739,330	633,934
Construction in progress	71,425	88,350
	1,068,994	947,863
Less accumulated depreciation	(486,204)	(422,973)
	$ 582,790	$ 524,890

Note 8. Goodwill and Other Intangible Assets

Goodwill represents the excess of the cost over the net tangible and identifiable intangible assets of acquired businesses. Identifiable intangible assets acquired in business combinations are recorded based upon fair value at the date of acquisition.

Changes in the carrying amount of goodwill were as follows ($000):

	Year Ended June 30, 2019			
	II-VI Laser Solutions	II-VI Photonics	II- VI Performance Products	Total
Balance-beginning of period	$ 98,737	$ 109,670	$ 62,271	$ 270,678
Goodwill acquired	-	26,069	25,569	51,638
Foreign currency translation	(856)	(1,682)	-	(2,538)
Balance-end of period	$ 97,881	$ 134,057	$ 87,840	$ 319,778

	Year Ended June 30, 2018			
	II-VI Laser Solutions	II-VI Photonics	II- VI Performance Products	Total
Balance-beginning of period	$ 79,527	$ 108,544	$ 62,271	$ 250,342
Goodwill acquired	18,956	-	-	18,956
Goodwill adjustment for prior year acquisition - IPI	-	407	-	407
Foreign currency translation	254	719	-	973
Balance-end of period	$ 98,737	$ 109,670	$ 62,271	$ 270,678

The gross carrying amount and accumulated amortization of the Company's intangible assets other than goodwill as of June 30, 2019 and 2018 were as follows ($000):

	June 30, 2019			June 30, 2018		
	Gross Carrying Amount	Accumulated Amortization	Net Book Value	Gross Carrying Amount	Accumulated Amortization	Net Book Value
Technology and Patents	$ 91,637	$ (39,679)	$ 51,958	$ 66,812	$ (32,979)	$ 33,833
Trade Names	15,759	(1,601)	14,158	15,882	(1,471)	14,411
Customer Lists	132,872	(59,664)	73,208	127,603	(50,792)	76,811
Other	1,572	(1,572)	-	1,573	(1,559)	14
Total	$ 241,840	$ (102,516)	$ 139,324	$ 211,870	$ (86,801)	$ 125,069

Amortization expense recorded on the intangible assets for the fiscal years ended June 30, 2019, 2018 and 2017 was $16.6 million, $14.6 million, and $12.7 million, respectively. The technology and patents are being amortized over a range of 60 to 240 months with a weighted-average remaining life of approximately 84 months. The customer lists are being amortized over 60 to 240 months with a weighted-average remaining life of approximately 130 months.

In conjunction with the acquisition of CoAdna, the Company recorded $9.8 million attributed to the value of technology and patents and $6.3 million of customer lists. The intangibles were recorded based on the Company's purchase price allocation utilizing either the multi-period excess earnings method or relief from royalty method to derive the fair value.

In conjunction with the acquisition of the product line, the Company recorded $6.3 million of acquired technology. The acquired technology was recorded based on the Company's purchase price allocation utilizing a relief from royalty method to derive the fair value.

In conjunction with the acquisition of Redstone, the Company recorded $9.1 million of acquired technology. The acquired technology was recorded based on the Company's purchase price allocation utilizing a relief from royalty method to derive the fair value.

In connection with past acquisitions, the Company acquired trade names with indefinite lives. The carrying amount of these trade names of $14.0 million as of June 30, 2019 is not amortized but tested annually for impairment. The Company completed its impairment test of these trade names with indefinite lives in the fourth quarter of fiscal years 2019 and 2018. Based on the results of these tests, the trade names were not impaired in fiscal years 2019 and 2018.

The estimated amortization expense for existing intangible assets for each of the five succeeding years is as follows ($000):

Year Ending June 30,	
2020	$ 16,700
2021	16,300
2022	14,800
2023	14,400
2024	14,000

Note 9. Debt

The components of debt were as follows ($000):

June 30,	2019	2018
0.25% Convertible senior notes	$ 345,000	$ 345,000
Convertible senior notes unamortized discount attributable to cash conversion option and debt issuance costs including initial purchaser discount	(43,859)	(56,409)
Term loan, interest at LIBOR, as defined, plus 1.75%	45,000	65,000
Line of credit, interest at LIBOR, as defined, plus 1.75%	115,000	80,000
Amended credit facility unamortized debt issuance costs	(761)	(1,126)
Yen denominated line of credit, interest at LIBOR, as defined, plus 1.75%	2,783	2,714
Note payable assumed in IPI acquisition	3,834	3,834
Total debt	466,997	439,013
Current portion of long-term debt	(23,834)	(20,000)
Long-term debt, less current portion	$ 443,163	$ 419,013

0.25% Convertible Senior Notes

On August 24, 2017, the Company entered into a purchase agreement with Merrill Lynch, Pierce, Fenner & Smith Incorporated, as representative of the several initial purchasers named therein (collectively, the “Initial Purchasers”), pursuant to which the Company issued and sold $345 million aggregate principal amount of our 0.25% convertible senior notes due 2022 (the "Notes") in a private placement to qualified institutional buyers within the meaning of Rule 144A under the Securities Act of 1933, as amended.

The Notes mature on September 1, 2022, unless earlier repurchased by the Company or converted by holders in accordance with the terms of the Notes. Interest is payable semi-annually in arrears on March 1 and September 1 of each year, beginning on March 1, 2018.

The sale of the Notes to the Initial Purchasers settled on August 29, 2017, and resulted in approximately $336 million in net proceeds to the Company after deducting the initial purchasers’ discount and offering expenses. The net proceeds from the offering and sale of the Notes were used, in part, to repurchase approximately $49.9 million of our common stock. The Company used the remaining net proceeds to repay $252 million on its revolving credit facility and to pay debt issuance costs of $10.1 million.

The Notes are governed by an Indenture between the Company, as issuer, and U.S. Bank, National Association, as trustee. The Notes are our senior unsecured obligations and rank senior in right of payment to any of our indebtedness that is expressly subordinated in right of payment to the Notes; equal in right of payment to any of our indebtedness that is not so subordinated; effectively junior in right of payment to any of our secured indebtedness to the extent of the value of the assets securing such indebtedness; and structurally junior to all indebtedness and other liabilities (including trade payables) of our subsidiaries. In the event of our bankruptcy, liquidation, reorganization or other winding up, our assets that secure secured debt will be available to pay obligations on the Notes only after all indebtedness under such secured debt has been repaid in full from such assets. Upon conversion, the Company will pay or deliver, as the case may be, cash, shares of our common stock or a combination of cash and shares of our common stock, at the Company’s election.

As a result of our cash conversion option, the Company separately accounted for the value of the embedded conversion option as a debt discount. The value of the embedded conversion option was determined based on the estimated fair value of the debt without the conversion feature, which was determined using an expected present value technique (income approach) to estimate the fair value of similar nonconvertible debt; the debt discount is being amortized as additional non-cash interest expense over the term of the Notes using the effective interest method with an effective interest rate of 4.5% per annum.

The equity component is not remeasured as long as it continues to meet the conditions for equity classification. The initial conversion rate is 21.25 shares of common stock per $1,000 principal amount of Notes, which is equivalent to an initial conversion price of $47.06 per share of common stock. Throughout the term of the Notes, the conversion rate may be adjusted upon the occurrence of certain events. The if-converted value of the Notes amounted to $268.0 million as of June 30, 2019 (based on the Company’s closing stock price on the last trading day of the year ended June 30, 2019).

Holders of the Notes will not receive any cash payment representing accrued and unpaid interest upon conversion of a note. Accrued but unpaid interest will be deemed to be paid in full upon conversion rather than cancelled, extinguished or forfeited.

Prior to the close of business on the business day immediately preceding June 1, 2022, the Notes will be convertible only upon satisfaction of at least one of the conditions as follows:

a) During any fiscal quarter (and only during such fiscal quarter), if the last reported sale price of our common stock for at least 20 trading days (whether or not consecutive) during a period of 30 consecutive trading days ending on the last trading day of the immediately preceding quarter is greater than or equal to 130% of the conversion price on each applicable trading day;

b) During the five business day period after any five consecutive trading day period (the “measurement period”) in which the trading price per $1,000 principal amount of Notes for each trading day of the measurement period was less than 98% of the product of the last reported sale price of our common stock and the conversion rate on each such trading day; or

c) Upon the occurrence of specified corporate events.

On or after June 1, 2022 until the close of business on the business day immediately preceding the maturity date, holders may convert all or any portion of their Notes, in multiples of $1,000 principal amount, at the option of the holder regardless of the foregoing circumstances.

As of June 30, 2019, the Notes are not yet convertible. The Notes will become convertible upon the satisfaction of at least one of the above conditions. In accounting for the transaction costs related to the Note issuance, the Company allocated the total amount of offering costs incurred to the debt and equity components based on their relative values. Offering costs attributable to the debt component, totaling $8.4 million, are being amortized as non-cash interest expense over the term of the Notes, and offering costs attributable to the equity component, totaling $1.7 million, were recorded within Shareholders' Equity.

The Company was in compliance with all the covenants set forth under the indenture.

The following table sets forth total interest expense recognized related to the Notes for the fiscal year ended June 30, 2019 (representing an effective interest rate of 4.5%):

Year ended June 30,	**2019**	**2018**
0.25% contractual coupon	$ 874	$ 731
Amortization of debt discount and debt issuance costs including initial purchaser discount	12,550	10,058
Interest expense	$ 13,424	$ 10,789

The unamortized discount amounted to $38.3 million as of June 30, 2019 and is being amortized over approximately 3 years.

Amended Credit Facility

On July 28, 2016, the Company amended and restated its existing credit agreement. The Third Amended and Restated Credit Agreement (the “Amended Credit Facility”) provides for a revolving credit facility of $325 million, as well as a $100 million term loan. The term loan is being repaid in consecutive quarterly principal payments on the first business day of each January, April, July and October, with the first payment having commenced on October 1, 2016, as follows: (i) twenty consecutive quarterly installments of $5 million and (ii) a final installment of all remaining principal due and payable on the maturity date of July 27, 2021. Amounts borrowed under the revolving credit facility are due and payable on the maturity date. The Amended Credit Facility is unsecured, but is guaranteed by each existing and subsequently acquired or organized wholly-owned domestic subsidiary of the Company. The Company has the option to request an increase to the size of the revolving credit facility in an aggregate additional amount not to exceed $100 million. The Amended Credit Facility has a five-year term through July 27, 2021 and has an interest rate of either a Base Rate Option or a Euro-Rate Option, plus an Applicable Margin, as defined in the agreement governing the Amended Credit Facility. If the Base Rate option is selected for a borrowing, the Applicable Margin is 0.00% to 1.25% and if the Euro-Rate Option is selected for a borrowing, the Applicable Margin is 1.00% to 2.25%. The Applicable Margin is based on the ratio of the Company’s consolidated indebtedness to consolidated EBITDA. Additionally, the Credit Facility is subject to certain covenants, including those relating to minimum interest coverage and maximum leverage ratios. As of June 30, 2019, the Company was in compliance with all financial covenants under its Amended Credit Facility.

Yen Loan

The Company's yen denominated line of credit is a 500 million Yen ($4.6 million) facility. The Yen line of credit matures in August 2020. The interest rate equal to LIBOR, as defined in the loan agreement, plus 0.625% to 1.75%. At June 30, 2019 and 2018, the Company had 300 million yen outstanding under the line of credit. Additionally, the facility is subject to certain covenants, including those relating to minimum interest coverage and maximum leverage ratios. As of June 30, 2019, the Company had $2.8 million outstanding and was in compliance with all covenants under its Yen facility.

Note Payable

In conjunction with the acquisition of IPI, the Company assumed a non-interest bearing note payable owed to a major customer of IPI. The agreement, if not terminated early by either party, is payable in full in January 2020.

Aggregate Availability

The Company had aggregate availability of $211.9 million and $246.4 million under its lines of credit as of June 30, 2019 and 2018, respectively. The amounts available under the Company's lines of credit are reduced by outstanding letters of credit. Total outstanding letters of credit supported by the credit facilities were immaterial as of June 30, 2019, and $0.4 million at June 30, 2018.

Weighted Average Interest Rate

The weighted average interest rate of total borrowings was 1.6% and 1.3% for the years ended June 30, 2019 and 2018, respectively. The weighted average of total borrowings for the fiscal years ended June 30, 2019 and 2018 was $533.9 million and $476.6 million, respectively. There are no interim maturities or minimum payment requirements related to the credit facilities before their respective expiration dates. Interest and commitment fees paid during the fiscal years ended June 30, 2019, 2018 and 2017 were $9.2 million, $6.6 million and $6.1 million, respectively.

Remaining Annual Principal Payments

Remaining annual principal payments under the Company's existing credit facilities and notes payable as of June 30, 2019 were as follows ($000):

Year Ended	Term Loan	Yen Line of Credit	U.S. Dollar Line of Credit	Note Payable	Convertibles Notes	Total
June 30, 2020	$ 20,000	$ -	$ -	$ 3,834	$ -	$ 23,834
June 30, 2021	20,000	2,783	-	-	-	$ 22,783
June 30, 2022	5,000	-	115,000	-	-	$ 120,000
June 30, 2023	-	-	-	-	345,000	$ 345,000
June 30, 2024	-	-	-	-	-	$ -
Total	$ 45,000	$ 2,783	$ 115,000	$ 3,834	$ 345,000	$ 511,617

Note 10. Income Taxes

The components of earnings (losses) before income taxes were as follows:

Year Ended June 30,	2019	2018	2017
($000)			
U.S. loss	$ (34,241)	$ (15,207)	$ (6,944)
Non-U.S. income	163,054	137,401	125,732
Earnings before income taxes	$ 128,813	$ 122,194	$ 118,788

The components of income tax expense were as follows:

Year Ended June 30,	2019	2018	2017
($000)			
Current:			
Federal	$ 1,755	$ 699	$ 2,133
State	472	401	253
Foreign	29,531	32,147	22,312
Total Current	$ 31,758	$ 33,247	$ 24,698
Deferred:			
Federal	$ (3,764)	$ (3,064)	$ (6,963)
State	(2,010)	1,615	(1,251)
Foreign	(4,688)	2,394	7,030
Total Deferred	$ (10,462)	$ 945	$ (1,184)
Total Income Tax Expense	$ 21,296	$ 34,192	$ 23,514

Principal items comprising deferred income taxes were as follows:

June 30,	2019	2018
($000)		
Deferred income tax assets		
Inventory capitalization	$ 5,687	$ 5,267
Non-deductible accruals	1,251	1,125
Accrued employee benefits	9,797	7,614
Net-operating loss and credit carryforwards	54,192	48,738
Share-based compensation expense	7,192	7,925
Other	5,488	3,242
Valuation allowances	(16,558)	(21,797)
Total deferred income tax assets	$ 67,049	$ 52,114
Deferred income tax liabilities		
Tax over book accumulated depreciation	$ (28,184)	$ (24,174)
Intangible assets	(28,202)	(24,649)
Tax on unremitted earnings	(11,662)	(13,090)
Convertible debt	(8,662)	(11,376)
Other	(5,728)	(4,020)
Total deferred income tax liabilities	$ (82,438)	$ (77,309)
Net deferred income taxes	$ (15,389)	$ (25,195)

The reconciliation of income tax expense at the statutory U.S. federal rate to the reported income tax expense is as follows:

Year Ended June 30,	2019	%	2018	%	2017	%
($000)						
Taxes at statutory rate	27,051	21	$ 34,284	28	$ 41,576	35
Increase (decrease) in taxes resulting from:						
State income taxes-net of federal benefit	(1,212)	(1)	1,426	1	(641)	-
Taxes on non U.S. earnings	(5,857)	(5)	(16,058)	(13)	(12,907)	(11)
Valuation allowance	(6,703)	(5)	(6,008)	(5)	(806)	(1)
Research and manufacturing incentive deductions and credits	(11,756)	(9)	(7,024)	(6)	(5,681)	(5)
Stock compensation	(1,914)	(1)	(4,103)	(3)	1,770	2
Repatriation tax	14,108	11	36,777	30	-	-
GILTI and FDII	6,437	5	-	-	-	-
Impact of U.S. tax rate change on deferred balances	-	-	(4,209)	(3)	-	-
Other	1,142	1	(893)	(1)	203	-
	$ 21,296	17	$ 34,192	28	$ 23,514	20

U.S. Tax Reform

On December 22, 2017, the Tax Cuts and Jobs Act (the "Tax Act") was signed into law. The Tax Act includes changes to the U.S. statutory federal tax rate and puts into effect the migration from a worldwide system of taxation to a territorial system, among other things. As of December 31, 2018, the Company completed its analysis of the impact of the Tax Act in accordance with U.S. Securities and Exchange Commission Staff Accounting Bulletin No. 118 ("SAB 118") and the amounts are no longer considered provisional. The Company's transition tax increased due to finalization of calculations and consideration of Notices and regulations issued by the US Department of Treasury and the Internal Revenue Service; however, the increase is offset by available net operating loss and credit carryforwards which currently have a valuation allowance. Consequently, the tax expense reported is reduced by the release of the valuation allowance on the U.S. deferred tax assets, and as result, there was no material financial statement impact due to finalization.

The Company previously considered the earnings in non-U.S. subsidiaries to be indefinitely reinvested and, accordingly, recorded no deferred income taxes. As a result of the Act, among other things, the Company determined it will repatriate earnings for all non-U.S. Subsidiaries with cash in excess of working capital needs. Such distributions could potentially be subject to U.S. state tax in certain states and foreign withholding taxes. Foreign currency gains/losses related to the translation of previously taxed earnings from functional currency to U.S. dollars could also be subject to U.S. tax when distributed. The Company has estimated the associated withholding tax to be $11.7 million.

Furthermore, the Tax Act includes certain changes such as introducing a new category of income, referred to as global intangible low tax income ("GILTI"), related to earnings taxed at a low rate of foreign entities without a significant fixed asset base, and imposes additional limitations on the deductibility of interest and officer compensation. The Company made a final accounting policy election to treat taxes due from future inclusions in U.S. taxable income related to GILTI as a current period expense when incurred. These changes are included in the Company's 2019 fiscal year income tax expense.

During the fiscal years ended June 30, 2019, 2018, and 2017, net cash paid by the Company for income taxes was $26.3 million, $21.3 million, and $23.6 million, respectively.

Our foreign subsidiaries in the Philippines operate under various tax holiday arrangements. The benefits of such arrangements phased out through the fiscal year ended June 30, 2019. The impact of the tax holidays on our effective rate is a reduction in the rate of 0.25%, 0.17% and 0.31% for the fiscal years ended June 30, 2019, 2018 and 2017, respectively, and the impact of the tax holidays on diluted earnings per share is immaterial.

The Company has the following gross operating loss carryforwards and tax credit carryforwards as of June 30, 2019:

Type		Amount	Expiration Date
($000)			
Tax credit carryforwards:			
Federal research and development credits	$	20,084	June 2029-June 2039
Foreign tax credits		1,088	June 2025-June 2027
State tax credits		12,449	June 2020-June 2039
State tax credits (indefinite)		448	Indefinite
Operating loss carryforwards:			
Loss carryforwards - federal	$	59,749	June 2020-June 2036
Loss carryforwards - state		52,762	June 2020-June 2039
Loss carryforwards - foreign		8,467	June 2021-June 2027
Loss carryforwards - foreign (indefinite)		8,502	Indefinite

The Company has recorded a valuation allowance against the majority of the loss and credit carryforwards. The Company's U.S. federal loss carryforwards, federal research and development credit carryforwards, and certain state tax credits resulting from the Company's acquisitions are subject to various annual limitations under Section 382 of the U.S. Internal Revenue Code.

Changes in the liability for unrecognized tax benefits for the fiscal years ended June 30, 2019, 2018 and 2017 were as follows:

	2019	2018	2017
($000)			
Beginning balance	$ 9,892	$ 7,577	$ 5,559
Increases in current year tax positions	191	2,536	895
Increases in prior year tax positions	376	224	2,605
Decreases in prior year tax positions	-	(9)	-
Acquired business	6,036	-	-
Settlements	-	-	(1,143)
Expiration of statute of limitations	(4,975)	(436)	(339)
Ending balance	$ 11,520	$ 9,892	$ 7,577

The Company classifies all estimated and actual interest and penalties as income tax expense. During fiscal years 2019, 2018 and 2017, there was $(0.1) million, $0.3 million and $0.5 million of interest and penalties within income tax expense, respectively. The Company had $1.2 million, $0.6 million and $0.3 million of interest and penalties accrued at June 30, 2019, 2018 and 2017, respectively. The Company has classified the uncertain tax positions as non-current income tax liabilities, as the amounts are not expected to be paid within one year. Including tax positions for which the Company determined that the tax position would not meet the more likely than not recognition threshold upon examination by the tax authorities based upon the technical merits of the position, the total estimated unrecognized tax benefit that, if recognized, would affect our effective tax rate, was approximately $6.2 million, $1.6 million and $1.3 million at June 30, 2019, 2018 and 2017, respectively. The Company expects a decrease of $2.2 million of unrecognized tax benefits during the next 12 months due to the expiration of statutes of limitation.

Fiscal years 2017 to 2019 remain open to examination by the Internal Revenue Service, fiscal years 2014 to 2019 remain open to examination by certain state jurisdictions, and fiscal years 2008 to 2019 remain open to examination by certain foreign taxing jurisdictions. The Company is currently under examination for the certain subsidiary companies in Florida for the years ended June 30, 2016 through June 30, 2018; Philippines for the year ended June 30, 2017; Germany for the years ended June 30, 2012 through June 30, 2015; and Vietnam for the years June 30, 2018 through June 30, 2019. The Company believes its income tax reserves for these tax matters are adequate.

Note 11. Earnings Per Share

The following table sets forth the computation of earnings per share for the periods indicated. Basic net income per share has been computed using the weighted average number of shares of common stock outstanding during the period. Diluted net income per share has been computed using the weighted average number of common shares outstanding during the period plus dilutive potential shares of common stock from (1) stock options, performance and restricted shares (under the treasury stock method) and (2) convertible debt (under the If-Converted method) outstanding during the period. The Company's convertible debt calculated under the If-Converted method was antidilutive for the fiscal years 2019 and 2018 and was excluded from the calculation of earnings per share.

Year Ended June 30,	**2019**	**2018**	**2017**
($000 except per share)			
Net earnings	$ 107,517	$ 88,002	$ 95,274
Divided by:			
Weighted average shares	63,584	62,499	62,576
Basic earnings per common share	$ 1.69	$ 1.41	$ 1.52
Net earnings	$ 107,517	$ 88,002	$ 95,274
Divided by:			
Weighted average shares	63,584	62,499	62,576
Dilutive effect of common stock equivalents	2,220	2,634	1,931
Diluted weighted average common shares	65,804	65,133	64,507
Diluted earnings per common share	$ 1.63	$ 1.35	$ 1.48

The following table presents potential shares of common stock excluded from the calculation of diluted net income per share, as their effect would have been antidilutive ($000):

Year Ended June 30,	2019	2018	2017
Stock options and restricted shares	115	135	140
0.25% Convertible Senior Notes due 2022	7,331	7,331	-
Total anti-dilutive shares	7,446	7,466	140

Note 12. Operating Leases

The Company leases certain property under operating leases that expire at various dates. Future rental commitments applicable to the operating leases at June 30, 2019 are as follows:

Year Ending June 30,		
($000)		
2020	$	23,000
2021		17,700
2022		14,300
2023		11,200
2024		9,700
Thereafter		44,000

Rent expense was approximately $20.0 million, $17.0 million, and $14.7 million for the fiscal years ended June 30, 2019, 2018 and 2017, respectively.

Note 13. Share-Based Compensation

The Company's Board of Directors adopted the II-VI Incorporated 2018 Omnibus Incentive Plan (the "Plan"), which was approved by the shareholders at the Annual Meeting in November 2018. The Plan provides for the grant of non-qualified stock options, stock appreciation rights, restricted shares, restricted share units, deferred shares, performance shares and performance share units to employees, officers and directors of the Company. The maximum number of shares of the Company's common stock authorized for issuance under the Plan is limited to 3,550,000 shares of common stock, not including any remaining shares forfeited under the predecessor plans that may be rolled into the Plan. The Plan has vesting provisions predicated upon the death, retirement or disability of the grantee. As of June 30, 2019, there were approximately 3.6 million shares available to be issued under the Plan, including forfeited shares from predecessor plans.

The Company records share-based compensation expense for these awards, which requires the recognition of the grant-date fair value of share-based compensation in net earnings. The Company recognizes the share-based compensation expense over the requisite service period of the individual grantees, which generally equals the vesting period. The Company accounts for cash-based stock appreciation rights, cash-based restricted share unit awards and cash-based performance share unit awards as liability awards, in accordance with applicable accounting standards.

Share-based compensation expense for the fiscal years ended June 30, 2019, 2018 and 2017 is as follows ($000):

Year Ended June 30,	2019		2018		2017	
Stock Options and Cash-Based Stock Appreciation Rights	$	6,801	$	6,605	$	5,611
Restricted Share Awards, Restricted Share Units, and Cash-Based Restricted Share Units		9,242		7,850		6,799
Performance Share Awards and Cash Based Performance Share Unit Awards		8,920		5,221		3,626
	$	24,963	$	19,676	$	16,036

The share-based compensation expense is allocated approximately 20% to cost of goods sold and 80% to selling, general and administrative expense in the Consolidated Statements of Earnings, based on the employee classification of the grantee. Share-based compensation expense associated with liability awards was $3.0 million, $4.4 million, and $4.3 million, in the fiscal years ended June 30, 2019, 2018 and 2017, respectively.

Stock Options and Cash-Based Stock Appreciation Rights:

The Company utilized the Black-Scholes valuation model for estimating the fair value of stock option expense. During the fiscal years ended June 30, 2019, 2018 and 2017, the weighted-average fair value of options granted under the stock option plan was $20.66, $14.23 and $8.88, respectively, per option using the following assumptions:

Year Ended June 30,	2019	2018	2017
Risk-free interest rate	2.80%	2.00%	1.43%
Expected volatility	37%	37%	37%
Expected life of options	6.96 years	6.43 years	6.28 years
Dividend yield	None	None	None

The risk-free interest rate is derived from the average U.S. Treasury Note rate during the period, which approximates the rate in effect at the time of grant related to the expected life of the options. The risk-free interest rate shown above is the weighted average rate for all options granted during the fiscal year. Expected volatility is based on the historical volatility of the Company's common stock over the period commensurate with the expected life of the options. The expected life calculation is based on the observed time to post-vesting exercise and/or forfeitures of options by our employees. The dividend yield of zero is based on the fact that the Company has never paid cash dividends and has no current intention to pay cash dividends in the future. The estimated annualized forfeitures are based on the Company's historical experience of option pre-vesting cancellations and are estimated at a rate of 16.0%. The Company will record additional expense in future periods if the actual forfeiture rate is lower than estimated, and will adjust expense in future periods if the actual forfeitures are higher than estimated.

Stock option and cash-based stock appreciation rights activity during the fiscal year ended June 30, 2019 was as follows:

	Stock Options		Cash-Based Stock Appreciation Rights	
	Number of Shares	Weighted Average Exercise Price	Number of Rights	Weighted Average Exercise Price
Outstanding - July 1, 2018	3,928,708	$ 20.07	205,448	$ 22.56
Granted	412,940	$ 47.61	48,305	$ 48.56
Exercised	(522,173)	$ 16.66	(21,562)	$ 20.45
Forfeited and Expired	(58,192)	$ 26.29	(4,695)	$ 31.43
Outstanding - June 30, 2019	3,761,283	$ 23.47	227,496	$ 28.09
Exercisable - June 30, 2019	2,348,812	$ 18.62	89,827	$ 27.50

As of June 30, 2019, 2018 and 2017, the aggregate intrinsic value of stock options and cash-based stock appreciation rights outstanding and exercisable was $56.4 million, $96.1 million and $69.3 million, respectively. Aggregate intrinsic value represents the total pretax intrinsic value (the difference between the Company's closing stock price on the last trading day of the year ended June 30, 2019, and the option's exercise price, multiplied by the number of in-the-money options) that would have been received by the option holders had all option holders exercised their options on June 30, 2019. This amount varies based on the fair market value of the Company's stock. The total intrinsic value of stock options and cash-based stock appreciation rights exercised during the fiscal years ended June 30, 2019, 2018, and 2017 was $14.7 million, $14.7 million, and $12.3 million, respectively. As of June 30, 2019, total unrecognized compensation cost related to non-vested stock options and cash-based stock appreciation rights was $13.8 million. This cost is expected to be recognized over a weighted-average period of approximately three years. Outstanding and exercisable stock options at June 30, 2019 were as follows:

	Stock Options and Cash-Based Stock Appreciation Rights Outstanding			Stock Options and Cash-Based Stock Appreciation Rights Exercisable		
Range of Exercise Prices	Number of Shares or Rights	Weighted Average Remaining Contractual Term (Years)	Weighted Average Exercise Price	Number of Shares or Rights	Weighted Average Remaining Contractual Term (Years)	Weighted Average Exercise Price
$12.07 - $16.97	825,579	3.52	$ 14.41	720,059	3.28	$ 14.47
$16.98 - $18.06	799,765	4.52	$ 17.72	591,237	3.95	$ 17.68
$18.07 - $21.65	734,900	4.04	$ 19.24	688,310	3.87	$ 19.20
$21.66 - $33.75	679,449	7.15	$ 22.25	309,016	7.02	$ 22.01
$33.76 - $49.90	949,096	8.62	$ 41.48	130,017	8.08	$ 35.82
	3,988,789	5.65	$ 23.74	2,438,639	4.34	$ 18.68

Restricted Share Awards, Restricted Share Units, and Cash-Based Restricted Share Unit Awards:

Restricted share awards, restricted share units, and cash-based restricted share unit awards compensation expense was calculated based on the number of shares or units expected to be earned by the grantee multiplied by the stock price at the date of grant (for restricted share awards) or the stock price at the period end date (for cash-based restricted share unit awards), and is being recognized over the vesting period. Generally, the restricted share awards, restricted share units, and cash-based restricted share unit awards have a three-year tranche vesting provision and an estimated forfeiture rate of 4.5%.

Restricted share, restricted share unit, and cash-based restricted share unit activity during the fiscal year ended June 30, 2019, was as follows:

	Restricted Share Awards			Restricted Share Units			Cash-Based Restricted Share Units		
	Number of Shares	Weighted Average Grant Date Fair Value		Number of Shares	Weighted Average Grant Date Fair Value		Number of Units	Weighted Average Grant Date Fair Value	
Nonvested - June 30, 2018	595,519	$	24.58	-	$	-	117,326	$	25.57
Granted	-	$	-	177,609	$	47.16	30,506	$	49.05
Vested	(401,341)	$	21.96	-	$	-	(68,846)	$	22.67
Forfeited	(10,749)	$	27.15	(1,872)	$	49.90	(1,344)	$	35.59
Nonvested - June 30, 2019	183,429	$	30.30	175,737	$	47.13	77,642	$	37.19

As of June 30, 2019, total unrecognized compensation cost related to non-vested restricted share, restricted share unit, and cash-based restricted share unit awards was $9.1 million. This cost is expected to be recognized over a weighted-average period of approximately two years. The restricted share and restricted share unit compensation expense was calculated based on the number of shares expected to be earned, multiplied by the stock price at the date of grant, and is being recognized over the vesting period. The cash-based restricted share unit compensation expense was calculated based on the number of shares expected to be earned, multiplied by the stock price at the period-end date, and is being recognized over the vesting period. The total fair value of the restricted share, restricted share unit, and cash-based restricted share unit awards granted during the years ended June 30, 2019, 2018 and 2017, was $9.9 million, $7.5 million and $7.8 million, respectively. The total fair value of restricted shares and cash-based restricted share unit awards vested was $19.9 million, $17.0 million and $6.2 million during fiscal years 2019, 2018 and 2017, respectively.

Performance Share Awards and Cash-Based Performance Share Unit Awards:

The Compensation Committee of the Board of Directors of the Company has granted certain executive officers and employees performance share awards and performance share unit awards under the Plan. As of June 30, 2019, the Company had outstanding grants covering performance periods ranging from 12 to 36 months. These awards are intended to provide continuing emphasis on specified financial performance goals that the Company considers important contributors to the creation of long-term shareholder value. These awards are payable only if the Company achieves specified levels of financial performance during the performance periods.

The performance share compensation expense was calculated based on the number of shares expected to be earned, multiplied by the stock price at the date of grant, and is being recognized over the vesting period. The cash-based performance share unit compensation expense was calculated based on the number of shares expected to be earned, multiplied by the stock price at the period-end date, and is being recognized over the vesting period. Performance share and cash-based performance share unit award activity relating to the Plan during the year ended June 30, 2019, was as follows:

	Performance Share Awards			Cash-Based Performance Share Units		
	Number of Shares	Weighted Average Grant Date Fair Value		Number of Units	Weighted Average Grant Date Fair Value	
Nonvested - June 30, 2018	382,270	$	24.57	17,279	$	25.71
Granted	218,583	$	38.00	11,943	$	44.00
Vested	(100,481)	$	17.84	(4,398)	$	17.84
Forfeited	(86,721)	$	22.24	(600)	$	38.77
Nonvested - June 30, 2019	413,651	$	36.80	24,224	$	37.47

As of June 30, 2019, total unrecognized compensation cost related to non-vested performance share and cash-based performance share unit awards was $5.7 million. This cost is expected to be recognized over a weighted-average period of approximately one year. The total fair value of the performance share and cash-based performance share unit awards granted during the fiscal years ended June 30, 2019, 2018 and 2017 was $10.0 million, $3.8 million and $5.3 million, respectively. The total fair value of performance shares vested during the fiscal years ended June 30, 2019, 2018 and 2017 was $10.5 million, $3.6 million and $5.9 million, respectively.

For our relative Total Shareholder Return ("TSR") performance-based awards, which are based on market performance of our stock as compared to the Russel 2000 Index, the compensation cost is recognized over the performance period on a straight-line basis net of forfeitures, because the awards vest only at the end of the measurement period and the probability of actual shares expected to be earned is considered in the grant date valuation. As a result, the expense is not adjusted to reflect the actual shares earned. We estimate the fair value of the TSR performance-based awards using the Monte-Carlo simulation model.

Note 14. Segment and Geographic Reporting

The Company reports its business segments using the "management approach" model for segment reporting. This means that the Company determines its reportable business segments based on the way the chief operating decision maker organizes business segments within the Company for making operating decisions and assessing performance.

The Company reports its financial results in the following three segments: (i) II-VI Laser Solutions, (ii) II-VI Photonics, and (iii) II-VI Performance Products, and the Company's chief operating decision maker receives and reviews financial information based on these segments. The Company evaluates business segment performance based upon segment operating income, which is defined as earnings before income taxes, interest and other income or expense.

The II-VI Laser Solutions segment is located in the United States, Singapore, China, Germany, Switzerland, Japan, Belgium, the United Kingdom, Italy, South Korea, the Philippines and Taiwan. II-VI Laser Solutions designs, manufactures and markets optical and electro-optical components and materials sold under the II-VI Infrared brand name and used primarily in high-power CO_2 lasers, fiber-delivered beam delivery systems and processing tools and direct diode lasers for industrial lasers sold under the II-VI HIGHYAG and II-VI Laser Enterprise brand names. II-VI Laser Solutions also manufactures compound semiconductor epitaxial wafers for applications in optical components, wireless devices, and high-speed communication systems and manufactures 6-inch GaAs wafers allowing for the production of high performance lasers and integrated circuits in high volume sold under the II-VI EpiWorks and II-VI OptoElectronic Devices Division brand names.

The II-VI Photonics segment is located in the United States, China, Vietnam, Germany, Japan, the United Kingdom, Italy and Hong Kong. II-VI Photonics manufactures crystal materials, optics, microchip lasers and optoelectronic modules for use in optical communication networks and other diverse consumer and commercial applications. In addition, the segment manufactures pump lasers, optical isolators, and optical amplifiers and micro-optics for optical amplifiers, for both terrestrial and submarine applications within the optical communications market.

The II-VI Performance Products segment is located in the United States, Vietnam, Japan, China, Germany and the Philippines. II-VI Performance Products is further divided into production and administrative units that are directed by managers. II-VI Performance Products designs, manufactures and markets infrared optical components and high-precision optical assemblies for aerospace and defense, medical and commercial laser imaging applications. In addition, the segment designs, manufactures and markets unique engineered materials for thermoelectric and silicon carbide applications servicing the semiconductor, aerospace and defense and medical markets.

Effective July 1, 2018 the Company realigned the composition of its operating segments. The Company moved Laser Systems Group from II-VI Laser Solutions to II-VI Photonics and moved Integrated Photonics, Inc. from II-VI Photonics to II-VI Performance Products. All applicable segment information has been restated to reflect this change.

In September 2018, November 2018, and March 2019, the Company completed its acquisitions of CoAdna, an additional product line, and Redstone, respectively. See Note 3, Acquisitions. The operating results of these acquisitions have been reflected in the selected financial information of the Company's II-VI Photonics segment, with the exclusion of Redstone that is reflected in the II-VI Performance Products Segment, since the date of the acquisitions.

The accounting policies are consistent across each of the segments. To the extent possible, the Company's corporate expenses are allocated to the segments. The Company evaluates segment performance based upon reported segment operating income, which is defined as earnings from continuing operations before income taxes, interest and other income or expense. Eliminations and Other include eliminating inter-segment sales and transfers as well as transaction costs related to the pending Finisar acquisition.

The following tables summarize selected financial information of the Company's operations by segment:

	II-VI Laser Solutions	**II-VI Photonics**	**II-VI Performance Products**	**Eliminations & Other**	**Total**
($000)					
2019					
Revenues	$ 396,573	$ 638,889	$ 327,034	$ -	$ 1,362,496
Inter-segment revenues	91,507	10,745	20,928	(123,180)	-
Operating income	40,261	81,898	42,153	(15,643)	148,668
Interest expense	-	-	-	-	(22,417)
Other income, net	-	-	-	-	2,562
Income taxes	-	-	-	-	(21,296)
Net earnings	-	-	-	-	107,517
Depreciation and amortization	44,529	26,273	21,563	-	92,365
Expenditures for property, plant & equipment	43,936	44,851	39,963	-	128,750
Segment assets	716,788	681,610	555,375	-	1,953,773
Goodwill	97,881	134,057	87,840	-	319,778

	II-VI Laser Solutions	**II-VI Photonics**	**II-VI Performance Products**	**Eliminations & Other**	**Total**
($000)					
2018					
Revenues	$ 405,940	$ 486,485	$ 266,369	$ -	$ 1,158,794
Inter-segment revenues	34,590	11,180	26,262	(72,032)	-
Operating income	40,119	63,152	33,492	-	136,763
Interest expense	-	-	-	-	(18,352)
Other income, net	-	-	-	-	3,783
Income taxes	-	-	-	-	(34,192)
Net earnings	-	-	-	-	88,002
Depreciation and amortization	38,004	23,242	19,524	-	80,770
Expenditures for property, plant & equipment	80,776	36,122	44,425	-	161,323
Segment assets	740,020	554,574	467,067	-	1,761,661
Goodwill	98,737	109,670	62,271	-	270,678

	II-VI Laser Solutions	**II-VI Photonics**	**II-VI Performance Products**	**Eliminations & Other**	**Total**
($000)					
2017					
Revenues	$ 317,495	$ 440,361	$ 214,190	$ -	$ 972,046
Inter-segment revenues	33,669	8,003	10,189	(51,861)	-
Operating income	27,459	66,462	21,635	-	115,556
Interest expense	-	-	-	-	(6,809)
Other income, net	-	-	-	-	10,041
Income taxes	-	-	-	-	(23,514)
Net earnings	-	-	-	-	95,274
Depreciation and amortization	24,684	21,612	17,341	-	63,637
Expenditures for property, plant & equipment	81,346	28,811	32,788	-	142,945

Geographic information for revenues from the country of origin (shipped from), and long-lived assets from the country of origin, which include property, plant and equipment, net of related depreciation, and certain other long-term assets, were as follows:

	Revenues		
Year Ended June 30,	**2019**	**2018**	**2017**
($000)			
United States	$ 405,404	$ 373,735	$ 294,200
Non-United States			
Hong Kong	319,601	186,978	190,702
China	290,287	253,672	208,595
Germany	155,000	132,161	88,304
Japan	109,670	89,153	76,212
Switzerland	32,770	49,557	50,497
Vietnam	22,322	26,898	22,497
Korea	11,674	9,757	6,584
Singapore	6,868	5,941	3,913
Philippines	4,179	3,909	3,057
United Kingdom	2,712	9,359	8,473
Taiwan	2,005	1,705	718
Belgium	4	4,511	7,503
Italy	-	11,458	10,791
Total Non-United States	957,092	785,059	677,846
	$ 1,362,496	$ 1,158,794	$ 972,046

	Long-Lived Assets		
June 30,	**2019**	**2018**	**2017**
($000)			
United States	$ 345,866	$ 309,062	$ 240,029
Non-United States			
China	108,688	81,175	62,024
United Kingdom	60,369	65,357	396
Switzerland	35,592	37,155	36,795
Germany	14,857	14,876	15,323
Vietnam	11,656	10,042	8,272
Philippines	7,793	6,628	6,115
Hong Kong	5,032	2,818	1,914
Other	1,190	598	704
Total Non-United States	245,177	218,649	131,543
	$ 591,043	$ 527,711	$ 371,572

Note 15. Fair Value of Financial Instruments

The FASB defines fair value as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous markets for the asset and liability in an orderly transaction between market participants at the measurement date. The Company estimates fair value of its financial instruments utilizing an established three-level hierarchy in accordance with U.S. GAAP. The hierarchy is based upon the transparency of inputs to the valuation of an asset or liability as of the measurement date as follows:

- Level 1 – Valuation is based upon unadjusted quoted prices for identical assets or liabilities in active markets.
- Level 2 – Valuation is based upon quoted prices for similar assets and liabilities in active markets, or other inputs that are observable for the asset or liability, either directly or indirectly, for substantially the full term of the financial instruments.
- Level 3 – Valuation is based upon other unobservable inputs that are significant to the fair value measurements.

The classification of fair value measurements within the hierarchy is based upon the lowest level of input that is significant to the measurement.

At June 30, 2019, the Company had foreign currency forward contracts recorded at fair value. The fair values of these instruments were measured using valuations based upon quoted prices for similar assets and liabilities in active markets (Level 2) and are valued by reference to similar financial instruments, adjusted for credit risk and restrictions and other terms specific to the contracts.

The Company has entered into earnout arrangements in conjunction with specified acquisitions, as discussed in Note 3, that provide additional cash earnout opportunities based upon achievement of certain agreed upon financial and operational targets. The fair values of the contingent earnout arrangements and the net put option were measured using valuations based upon other unobservable inputs that are significant to the fair value measurement (Level 3).

The fair values of these contingent earnout arrangements and the net put option (discussed in Note 4) were measured using valuations based on other unobservable inputs that are significant to the fair value measurement (Level 3).

The Company estimated the fair value of the Notes based on quoted market prices as of the last trading day prior to June 30, 2019; however, the Notes have only a limited trading volume and, as such, this fair value estimate is not necessarily the value at which the Notes could be retired or transferred. The Company concluded that this fair value measurement should be categorized within Level 2. The carrying value of the convertible notes is net of unamortized discount and issuance costs. See Note 9 for details on the Company's debt facilities. The fair value and carrying value of the convertible notes were as follows at June 30, 2019 ($000):

	Fair Value	Carrying Value
Convertible notes	$ 365,700	$ 301,141

The following tables provide a summary by level of the fair value of financial instruments that are measured on a recurring basis as of June 30, 2019 and 2018 ($000):

	Fair Value Measurements at June 30, 2019 Using:			
	June 30, 2019	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Liabilities:				
Foreign currency forward contracts	$ 139	$ -	$ 139	$ -
Contingent earnout arrangements	$ 4,397	$ -	$ -	$ 4,397
Net put option	$ 2,024	$ -	$ -	$ 2,024

	Fair Value Measurements at June 30, 2018 Using:			
	June 30, 2018	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Foreign currency forward contracts	$ 121	$ -	$ 121	$ -
Liabilities:				
Contingent earnout arrangements	$ 5,405	$ -	$ -	$ 5,405
Net put option	$ 2,024	$ -	$ -	$ 2,024

The following table presents a reconciliation of the beginning and ending fair value measurements of the Company's level 3 contingent earnout arrangements related to the Company's acquisitions and the net put option relating to the purchase of the equity investment in November 2017 ($000):

	Significant Unobservable Inputs (Level 3)
Balance at July 1, 2018	$ 7,429
Activity:	
Payments	(4,524)
Changes in fair value recorded in other expense (income), net	(881)
Other earnout arrangements	4,397
Balance at June 30, 2019	$ 6,421

The fair values of cash and cash equivalents are considered Level 1 among the fair value hierarchy and approximate fair value because of the short-term maturity of those instruments. The Company's borrowings include both variable and fixed interest rates, non-interest bearing debt and a capital lease obligation and are considered Level 2 among the fair value hierarchy and accordingly their carrying amounts approximate fair value.

Note 16. Derivative Instruments

The Company, from time to time, purchases foreign currency forward exchange contracts, primarily in Japanese Yen, that permit it to sell specified amounts of these foreign currencies expected to be received from its export sales, for pre-established U.S. dollar amounts at specified dates. These contracts are entered into to limit transactional exposure to changes in currency exchange rates of export sales transactions in which settlement will occur in future periods and which otherwise would expose the Company, on the basis of its aggregate net cash flows in respective currencies, to foreign currency risk.

The Company has recorded the fair value of these contracts in the Company's financial statements. These contracts had a total notional amount of $17.0 million and $12.0 million at June 30, 2019 and 2018, respectively. As of June 30, 2019, these forward contracts had expiration dates ranging from July 2019 through October 2019, with Japanese Yen denominations individually between 300 million and 645 million Yen. The Company does not account for these contracts as hedges as defined by U.S. GAAP and records the change in the fair value of these contracts in Other expense (income), net in the Consolidated Statements of Earnings as they occur. The fair value measurement takes into consideration foreign currency rates and the current creditworthiness of the counterparties to these contracts, as applicable, and is based upon quoted prices for similar assets and liabilities in active markets, or other inputs that are observable for the asset or liability, either directly or indirectly, for substantially the full term of the financial instruments and thus represents a Level 2 measurement. These contracts are recorded in prepaid and other current assets in the Company's Consolidated Balance Sheets as of June 30, 2019. The change in the fair value of these contracts for the fiscal year ended June 30, 2019, 2018 and 2017 was insignificant.

Note 17. Employee Benefit Plans

Eligible U.S. employees of the Company participate in a profit sharing retirement plan. Contributions accrued for the plan are made at the discretion of the Company's board of directors and were $4.6 million, $5.0 million, and $4.3 million for the years ended June 30, 2019, 2018 and 2017, respectively.

On August 18, 2018, the Company adopted the 2018 Employee Stock Purchase Plan ("2018 Plan") for full time employees who have completed two years of continuous employment with the Company, and the 2018 Plan was approved by the Company's shareholders at the Company's Annual Meeting of Shareholders in November 2018. The employee may purchase the Company's common stock for the lessor of 90% of the fair market value of the shares (i) on the first trading day of the offering period, or (ii) on the purchase date. Offering periods will run from August through January and from February through July each year. The number of shares which may be bought by an employee during each fiscal year is limited to 15% of the employee's base pay. The 2018 Plan, limits the number of shares of common stock available for purchase to 2,000,000 shares. As of June 30, 2019, there have been no purchases under the 2018 Plan.

Switzerland Defined Benefit Plan

The Company maintains a pension plan covering employees of our Swiss subsidiary (the "Swiss Plan"). Employer and employee contributions are made to the Swiss Plan based on various percentages of salary and wages that vary according to employee age and other factors. Employer contributions to the Swiss Plan for years ended June 30, 2019 and 2018 were $3.0 million and $2.7 million, respectively. Expected employer contributions in fiscal year 2020 are $3.0 million.

The changes in the funded status of the Swiss Plan during the fiscal years ended June 30, 2019 and 2018 were as follows:

Year Ended June 30,	**2019**	**2018**
Change in projected benefit obligation:		
Projected benefit obligation, beginning of period	$ 62,554	$ 59,518
Service cost	3,629	3,766
Interest cost	528	424
Benefits accumulated, net of benefits paid	(103)	1,474
Plan amendments	-	(4,068)
Actuarial (gain) loss on obligation	6,690	1,606
Participant contributions	1,557	1,415
Currency translation adjustment	(1,372)	(1,581)
Projected benefit obligation, end of period	$ 73,483	$ 62,554
Change in plan assets:		
Plan assets at fair value, beginning of period	49,034	42,990
Actual return on plan assets	342	1,566
Employer contributions	2,965	2,731
Participant contributions	1,557	1,415
Benefits accumulated, net of benefits paid	(103)	1,474
Currency translation adjustment	(1,076)	(1,142)
Plan assets at fair value, end of period	$ 52,719	$ 49,034
Amounts recognized in consolidated balance sheets:		
Other non-current assets:		
Deferred tax asset	$ 4,392	$ 2,859
Other non-current liabilities:		
Underfunded pension liability	20,764	13,520
Amounts recognized in accumulated other comprehensive income:		
Pension adjustment	$ (11,784)	$ 2,846
Accumulated benefit obligation, end of period	$ 69,682	$ 59,800

Net periodic pension cost associated with the Swiss Plan included the following components:

Year Ended June 30,	2019	2018	2017
Service cost	$ 3,629	$ 3,766	$ 3,689
Interest cost	528	424	163
Expected return on plan assets	951	849	(742)
Net actuarial loss and prior service credit	185	203	594
Net periodic pension cost	$ 5,293	$ 5,242	$ 3,704

The projected and accumulated benefit obligations for the Swiss Plan were calculated as of June 30, 2019 and 2018 using the following assumptions:

June 30,	2019	2018
Discount rate	0.5%	0.9%
Salary increase rate	2.0%	2.0%

The net periodic pension cost for the Swiss Plan was calculated during the fiscal years ended June 30, 2019, 2018, and 2017 using the following assumptions:

Year Ended June 30,	2019	2018	2017
Discount rate	0.9%	0.8%	0.3%
Salary increase rate	2.0%	2.0%	2.0%
Expected return on plan assets	2.0%	2.0%	2.0%

The discount rate is based on assumed pension benefit maturity and estimates developed using the rate of return and yield curves for high quality Swiss corporate and government bonds. The salary increase rate is based on our best assessment for on-going increases over time. The expected long-term rate of return on plan assets is based on the expected asset allocation, taking into consideration historical long-term rates of return for the relevant asset categories.

As is customary with Swiss pension plans, the assets of the plan are invested in a collective fund with multiple employers. We have no investment authority over the assets of the plan, which are held and invested by a Swiss insurance company. The investment strategy of the Swiss Plan is managed by an independent asset manager with the objective of achieving a consistent long-term return which will provide sufficient funding for future pension obligations while limiting risk.

The Swiss Plan is legally separate from II-VI, as are the assets of the plan. As of June 30, 2019, the Swiss Plan's asset allocation was as follows (all of which are categorized as Level 2 in the fair value hierarchy):

June 30,	2019	2018
Fixed income investments	12.0%	12.0%
Equity investments	50.0%	50.0%
Real estate	28.0%	31.0%
Cash	7.0%	4.0%
Other	3.0%	3.0%
	100.0%	100.0%

Estimated future benefit payments under the Swiss Plan are estimated to be as follows:

Year Ending June 30,	
($000)	
2020	$ 3,400
2021	2,900
2022	3,000
2023	3,300
2024	5,100
Next five years	$ 24,300

Note 18. Other Accrued Liabilities

The components of other accrued liabilities were as follows:

June 30,	2019	2018
($000)		
Contract liabilities	$ 10,390	$ 3,384
Warranty reserve	4,478	4,679
Earnout arrangements	1,861	5,405
Other accrued liabilities	33,215	29,511
	$ 49,944	$ 42,979

Note 19. Commitments and Contingencies

The Company has purchase commitments for materials and supplies as part of the ordinary conduct of business. A portion of the commitments are long-term and are based on minimum purchase requirements. Certain short-term raw material purchase commitments have a variable price component which is based on market pricing at the time of purchase. Due to the proprietary nature of some of the Company's materials and processes, certain contracts may contain liquidated damage provisions for early termination. The Company does not believe that a significant amount of liquidated damages are reasonably likely to be incurred under these commitments based upon historical experience and current expectations. The Company also has commitments relating to earnout arrangements on its acquisitions of $4.4 million. Total future commitments are as follows:

Year Ending June 30,	
($000)	
2020	$ 32,048
2021	4,964
2022	-
2023	-
2024	-

Note 20. Share Repurchase Programs

In August 2017, in conjunction with the Company's offering and sale of the Notes, the Company's Board of Directors authorized the Company to purchase up to $50 million of its common stock with a portion of the net proceeds received from the offering and sale of the Notes. The shares that were purchased by the Company pursuant to this authorization were retained as treasury stock and are available for general corporate purposes. The Company purchased 1,414,900 shares of its common stock for approximately $49.9 million pursuant to this authorization in fiscal 2018.

In August 2014, the Company's Board of Directors authorized the Company to purchase up to $50 million of its common stock through a share repurchase program (the "Program") that calls for shares to be purchased in the open market or in private transactions from time to time. The Program has no expiration and may be suspended or discontinued at any time. Shares purchased by the Company are retained as treasury stock and available for general corporate purposes. During the fiscal year ended June 30, 2019, the Company purchased 50,000 shares of its common stock for $1.6 million under this program. The Company did not repurchase shares pursuant to this Program during the fiscal years ended June 30, 2018 and 2017. As of June 30, 2019, the Company has cumulatively purchased 1,366,587 shares of its common stock pursuant to the Program for approximately $20.7 million. The dollar value of shares as of June 30, 2019 that may yet be purchased under the Program is approximately $29.3 million.

Note 21. Accumulated Other Comprehensive Income (Loss)

The changes in accumulated other comprehensive income ("AOCI") by component, net of tax, for the years ended June 30, 2019, 2018, and 2017 were as follows ($000):

	Foreign Currency Translation Adjustment	Defined Benefit Pension Plan	Total Accumulated Other Comprehensive Income
AOCI - June 30, 2016	$ (6,185)	$ (7,832)	$ (14,017)
Other comprehensive income (loss) before reclassifications	(2,275)	1,920	(355)
Amounts reclassified from AOCI	-	594	594
Net current-period other comprehensive income	(2,275)	2,514	239
AOCI - June 30, 2017	(8,460)	(5,318)	(13,778)
Other comprehensive income (loss) before reclassifications	7,152	2,643	9,795
Amounts reclassified from AOCI	-	203	203
Net current-period other comprehensive income	7,152	2,846	9,998
AOCI - June 30, 2018	$ (1,308)	$ (2,472)	$ (3,780)
Other comprehensive income (loss) before reclassifications	(14,319)	(6,307)	(20,626)
Amounts reclassified from AOCI	-	185	185
Net current-period other comprehensive income	(14,319)	(6,122)	(20,441)
AOCI - June 30, 2019	$ (15,627)	$ (8,594)	$ (24,221)

Note 22. Capital Lease

During fiscal 2017, the Company's OptoElectronic Devices subsidiary entered into a capital lease related to a building in Warren, New Jersey. The following table shows the future minimum lease payments due under the non-cancelable capital lease ($000):

Fiscal Year Ending June 30,	Amount
2020	$ 2,355
2021	2,419
2022	2,486
2023	2,554
2024	2,624
Thereafter	22,116
Total minimum lease payments	$ 34,554
Less amount representing interest	10,193
Present value of capitalized payments	$ 24,361

The current and long-term portion of the capital lease obligation was recorded in other accrued liabilities and other liabilities, respectively, in the Company's Consolidated Balance Sheets as of June 30, 2019 and 2018. The present value of the minimum capital lease payments at inception was $25.0 million recorded in Property, Plant & Equipment, net, in the Company's Consolidated Balance Sheet, with associated depreciation being recorded over the 15-year life of the lease. During the fiscal year ended June 30, 2019, the Company recorded $1.7 million of depreciation expense associated with the capital leased asset. The accumulated depreciation on the capital lease asset was $4.2 million as June 30, 2019.

Quarterly Financial Data (unaudited)

Fiscal Year 2019

Quarter Ended	September 30, 2018	December 31, 2018	March 31, 2019	June 30, 2019
($000, except per share)				
2019				
Net revenues	$ 314,433	$ 342,839	$ 342,496	$ 362,728
Cost of goods sold	190,526	211,333	215,212	224,076
Internal research and development	33,171	33,764	36,026	36,202
Selling, general and administrative	53,523	58,136	60,128	61,731
Interest expense	5,584	5,580	5,647	5,606
Other expense (income) - net	(713)	(701)	(1,532)	384
Earnings before income taxes	32,342	34,727	27,015	34,729
Income taxes	6,193	6,025	2,377	6,701
Net Earnings	$ 26,149	$ 28,702	$ 24,638	$ 28,028
Basic earnings per share	$ 0.41	$ 0.45	$ 0.39	$ 0.44
Diluted earnings per share	$ 0.40	$ 0.44	$ 0.38	$ 0.43

Fiscal Year 2018

Quarter Ended	September 30, 2017	December 31, 2017	March 31, 2018	June 30, 2018
($000, except per share)				
2018				
Net revenues	$ 261,503	$ 281,470	$ 294,746	$ 321,075
Cost of goods sold	155,530	172,075	176,521	192,465
Internal research and development	25,575	27,779	30,625	32,896
Selling, general and administrative	50,624	49,130	53,121	55,690
Interest expense	3,645	4,644	5,014	5,049
Other expense (income) - net	(770)	(2,026)	(1,755)	768
Earnings before income taxes	26,899	29,868	31,220	34,207
Income taxes	5,758	20,272	1,122	7,040
Net Earnings	$ 21,141	$ 9,596	$ 30,098	$ 27,167
Basic earnings per share	$ 0.34	$ 0.15	$ 0.48	$ 0.44
Diluted earnings per share	$ 0.32	$ 0.15	$ 0.45	$ 0.42

SCHEDULE II

II-VI INCORPORATED AND SUBSIDIARIES

VALUATION AND QUALIFYING ACCOUNTS
YEARS ENDED JUNE 30, 2019, 2018, AND 2017
(IN THOUSANDS OF DOLLARS)

	Balance at Beginning of Year	Charged to Expense	Charged to Other Accounts	Deduction from Reserves	Balance at End of Year
YEAR ENDED JUNE 30, 2019:					
Allowance for doubtful accounts	$ 837	$ 548	$ -	$ (92) [1]	$ 1,293
Warranty reserves	$ 4,679	$ 4,185	$ -	$ (4,386)	$ 4,478
Deferred tax asset valuation allowance	$ 21,797	$ (1,607)	$ -	$ -	$ 20,190
YEAR ENDED JUNE 30, 2018:					
Allowance for doubtful accounts	$ 1,314	$ (129)	$ -	$ (348) [1]	$ 837
Warranty reserves	$ 4,546	$ 3,821	$ -	$ (3,688)	$ 4,679
Deferred tax asset valuation allowance	$ 42,562	$ (4,602)	$ (16,163) [2]	$ -	$ 21,797
YEAR ENDED JUNE 30, 2017:					
Allowance for doubtful accounts	$ 2,016	$ (134)	$ -	$ (568) [1]	$ 1,314
Warranty reserves	$ 3,908	$ 4,850	$ -	$ (4,212)	$ 4,546
Deferred tax asset valuation allowance	$ 42,641	$ (79)	$ -	$ -	$ 42,562

(1) Primarily relates to write-offs of accounts receivable.
(2) Primarily relates to the Company's deferred taxes on the conversion feature of the convertible debt.

Item 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

Item 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

The Company's management evaluated, with the participation of the Company's Chief Executive Officer, and the Company's Chief Financial Officer and Treasurer, the effectiveness of the Company's disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) of the Securities Exchange Act of 1934, as amended (the "Exchange Act")) as of the end of the period covered by this Annual Report on Form 10-K. The Company's disclosure controls were designed to provide reasonable assurance that information required to be disclosed in reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the rules and forms of the SEC. It should be noted that the design of any system of controls is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions, regardless of how remote. However, the controls have been designed to provide reasonable assurance of achieving the controls' stated goals. Based on that evaluation, the Chief Executive Officer and Chief Financial Officer concluded that, as of June 30, 2019, the Company's disclosure controls and procedures are effective.

Management's Report on Internal Control Over Financial Reporting

Refer to Management's Report on Internal Control Over Financial Reporting included in Item 8 of this Annual Report of Form 10-K.

Report of the Registered Public Accounting Firm

The report of Ernst & Young LLP, an independent registered public accounting firm, with respect to our internal control over financial reporting is included in Item 8 of this Annual Report on Form 10-K.

Changes in Internal Control over Financial Reporting

There have been no changes in the Company's internal controls over financial reporting that occurred during our most recent quarter that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. OTHER INFORMATION

None.

PART III

Item 10. DIRECTORS AND EXECUTIVE OFFICERS OF THE REGISTRANT

The information set forth above in Part I of this Annual Report on Form 10-K under the caption "Executive Officers of the Registrant" is incorporated herein by reference. The other information required by this item is incorporated herein by reference to the information set forth under the captions "Election of Directors Section 16(a) Beneficial Ownership Reporting Compliance" in the Company's definitive proxy statement for the 2018 Annual Meeting of Shareholders to be filed pursuant to Regulation 14A of the Exchange Act (the "Proxy Statement").

Audit Committee Financial Expert

The information as to the Audit Committee and the Audit Committee Financial Expert is incorporated herein by reference to the information set forth in the Company's Proxy Statement.

Code of Ethics

The Company has adopted its Code of Business Conduct and Ethics for all of its employees and its Code of Ethics for Senior Financial Officers including the principal executive officer and principal financial officer. The Code of Business Conduct and Ethics and Code of Ethics for Senior Financial Officers can be found on the Company's Internet web site at www.ii-vi.com under "Investors Information – Corporate Governance Documents." The Company will promptly disclose on its web site (i) any amendments or waivers with respect to a director's or executive officer's compliance with the Code of Business Conducts and Ethics and (ii) any amendments or waivers with respect to any provision of the Code of Ethics for Senior Financial Officers. Any person may also obtain a copy of the Code of Business Conduct and Ethics and/or the Code of Ethics for Senior Financial Officer without charge by submitting their request to the Chief Financial Officer and Treasurer of II-VI Incorporated, 375 Saxonburg Boulevard, Saxonburg, Pennsylvania 16056, or by calling (724) 352-4455.

We intend to satisfy any disclosure requirements under Item 5.05 of Form 8-K regarding an amendment to, or waiver from, a provision of the Code of Business Conduct and Ethics by posting such information on our web site.

The web site and information contained on it or incorporated in it are not intended to be incorporated in this Annual Report on Form 10-K or other filings with the SEC.

Item 11. EXECUTIVE COMPENSATION

The information required by this item is incorporated herein by reference to the information set forth under the caption "Director Compensation in Fiscal Year 2019," "Executive Compensation," "Compensation Committee Report" and "Compensation and Risk" in the Company's Proxy Statement.

Item 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information required by this item is incorporated herein by reference to the information set forth under the captions “Equity Compensation Plan Information” and “Security Owners of Certain Beneficial Owners and Management” in the Company’s Proxy Statement.

Item 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS AND DIRECTOR INDEPENDENCE

The information required by this item is incorporated herein by reference to the information set forth under the caption “Director Independence and Corporate Governance Policies” in the Company’s Proxy Statement.

Item 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The information required by this item is incorporated herein by reference to the information set forth under the caption “Ratification of Selection of Independent Registered Public Accounting Firm” in the Company’s Proxy Statement.

PART IV

Item 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) (1) Financial Statements

The financial statements are set forth under Item 8 of this Annual Report on Form 10-K.

(2) Schedules

Schedule II – Valuation and Qualifying Accounts for each of the three fiscal years in the period ended June 30, 2019 is set forth under Item 8 of this Annual Report on Form 10-K.

Financial statements, financial statement schedules and exhibits not listed have been omitted where the required information is included in the Consolidated Financial Statements or notes thereto, or is not applicable or required.

Exhibit No.	Description	Location
2.01	Agreement and Plan of Merger, dated November 8, 2018, by and among II-VI Incorporated, Mutation Merger Sub Inc. and Finisar Corporation.	Incorporated herein by reference to Exhibit 2.1 to II-VI's Current Report on Form 8-K (File No. 000-16195) filed on November 9, 2018.
3.01	Amended and Restated Articles of Incorporation of II-VI Incorporated	Incorporated herein by reference to Exhibit 3.1 to II-VI's Current Report on Form 8-K (File No. 000-16195) filed on November 8, 2011.
3.02	Amended and Restated By-Laws of II-VI Incorporated	Incorporated herein by reference to Exhibit 3.1 to II-VI's Current Report on Form 8-K (File No. 000-16195) filed on August 29, 2014.
4.01	Indenture, dated as of August 29, 2017, by and between II-IV Incorporated and U.S. Bank, National Association, as Trustee	Incorporated herein by reference to Exhibit 4.1 to II-VI's Current Report on Form 8-K (File No. 000-16195) filed on November 14, 2017.
4.02	Form of 0.25% Convertible Senior Notes due 2022.	Included in Exhibit 4.01.
4.03	Description of II-VI's Securities Registered Pursuant to Section 12 of the Securities Exchange Act of 1934.	Filed herewith.
10.01	Third Amended and Restated Credit Agreement, by and among II-VI Incorporated, each of the Guarantors party thereto, the Lenders party thereto, and PNC Bank, National Association, as Administrative and Documentation Agent, and Bank of America, N.A., as Syndication Agent, dated as of July 28, 2016.	Incorporated herein by reference to Exhibit 10.1 to II-VI's Current Report on Form 8-K (File No. 000-16195) filed on August 2, 2016.
10.02	First Amendment to Third Amended and Restated Credit Agreement, dated as of August 17, 2017, by and among II-VI Incorporated, the Guarantors party thereto, the Lenders party thereto and PNC Bank, National Association, as Administrative Agent.	Incorporated herein by reference to Exhibit 10.1 to II-VI's Current Report on Form 8-K (File No. 000-16195) filed on August 22, 2017.
10.03	Credit Agreement, dated as of January 31, 2012, by and among II-VI Japan Incorporated, each of the Guarantors party thereto, PNC Bank, National Association, the other Banks party thereto, and PNC Bank, National Association, in its capacity as agent for the Banks thereunder (500,000,000 Yen Revolving Credit Facility)	Incorporated herein by reference to Exhibit 10.02 to II-VI's Annual Report on Form 10-K (File No. 000-16195) for the year ended June 30, 2015.
10.04	First Amendment to Credit Agreement, dated as of September 18, 2015, by and among II-VI Japan Incorporated, the Guarantors party thereto, the Banks party thereto, and PNC Bank, National Association, as agent.	Incorporated herein by reference to Exhibit 10.01 to II-VI's Quarterly Report on Form 10-Q (File No. 000-16195) for the quarter ended September 30, 2015.
10.05	Employment Agreement, dated August 1, 2016, by and between II-VI and Vincent D. Mattera, Jr.*	Incorporated herein by reference to Exhibit 10.1 to II-VI's Current Report on Form 8-K (File No. 000-16195) filed on August 2, 2016.
10.06	Employment Agreement, dated March 6, 2014, by and between II-VI Incorporated and Mary Jane Raymond*	Incorporated herein by reference to Exhibit 10.1 to II-VI's Current Report on Form 10-Q (File No. 000-16195) for the quarter ended March 31, 2014.
10.07	Employment Agreement, dated October 3, 2012, by and between II-VI Incorporated and Giovanni Barbarossa*	Incorporated herein by reference to Exhibit 10.07 to II-VI's Annual Report on Form 10-K (File No. 000-16195) for the year ended June 30, 2015.

10.08	Employment Agreement, dated November 10, 2008, by and between II-VI Incorporated and David G. Wagner*	Incorporated herein by reference to Exhibit 10.08 to II-VI's Annual Report on Form 10-K (File No. 000-16195) for the year ended June 30, 2015.
10.09	Employment Agreement, dated February 1, 2016, by and between II-VI Incorporated and Gary A. Kapusta*	Incorporated herein by reference to Exhibit 10.01 to II-VI's Current Report on Form 8-K (File No. 000-16195) filed on February 1, 2016.
10.10	Employment Agreement, dated March 6, 2017, by and between II-VI Incorporated and Jo Anne Schwendinger *	Incorporated herein by reference to Exhibit 10.10 to II-VI's Annual Report on Form 10-K (File No. 000-16195) filed on August 28, 2018.
10.12	Form of Employment Agreement* (P)	Incorporated herein by reference to Exhibit 10.16 to II-VI's Registration Statement on Form S-1 (File No. 33-16389).
10.13	Form of Executive Employment Agreement	Incorporated herein by reference to Exhibit 10.13 to II-VI's Annual Report on Form 10-K (File No. 000-16195) filed on August 28, 2018.
10.14	Form of Exhibit 1 to Employment Agreement	Incorporated herein by reference to Exhibit 10.14 to II-VI's Annual Report on Form 10-K (File No. 000-16195) filed on August 28, 2018.
10.15	Form of Indemnification Agreement	Incorporated herein by reference to Exhibit 10.15 to II-VI's Annual Report on Form 10-K (File No. 000-16195) filed on August 28, 2018.
10.16	Form of Representative Agreement between II-VI and its foreign representatives (P)	Incorporated herein by reference to Exhibit 10.15 to II-VI's Registration Statement on Form S-1 (File No. 33-16389).
10.19	II-VI Incorporated Amended and Restated Employees' Profit-Sharing Plan and Trust Agreement, as amended (P)	Incorporated herein by reference to Exhibit 10.05 to II-VI's Registration Statement on Form S-1 (File No. 33-16389).
10.20	Description of Bonus Incentive Plan*	Incorporated herein by reference to Exhibit 10.14 to II-VI's Annual Report on Form 10-K (File No. 000-16195) for the fiscal year ended June 30, 1996.
10.21	Description of Discretionary Incentive Plan (now known as the Goal/Results Incentive Program)*	Incorporated herein by reference to Exhibit 10.27 to II-VI's Annual Report on Form 10-K (File No. 000-16195) for the fiscal year ended June 30, 2009.
10.22	Description of Management-By-Objective Plan*(P)	Incorporated herein by reference to Exhibit 10.09 to II-VI's Annual Report on Form 10-K (File No. 000-16195) for the fiscal year ended June 30, 1993.
10.23	Amended and Restated II-VI Incorporated Deferred Compensation Plan (applicable to periods prior to January 1, 2015)*	Incorporated herein by reference to Exhibit 10.17 to II-VI's Annual Report on Form 10-K (File No. 000-16195) for the fiscal year ended June 30, 2015.

10.24	Amended and Restated II-VI Incorporated Deferred Compensation Plan (applicable to periods after January 1, 2015)*	Incorporated herein by reference to Exhibit 10.18 to II-VI's Annual Report on Form 10-K (File No. 000-16195) for the fiscal year ended June 30, 2015.
10.25	Trust Under the II-VI Incorporated Deferred Compensation Plan*	Incorporated herein by reference is Exhibit 10.13 to II-VI's Annual Report on Form 10-K (File No. 000-16195) for the fiscal year ended June 30, 1996.
10.26	II-VI Incorporated 2009 Omnibus Incentive Plan*	Incorporated herein by reference to Exhibit A to II-VI's Definitive Proxy Statement on Schedule 14A (File No. 000-16195) filed on September 25, 2009.
10.27	Form of Nonqualified Stock Option Agreement under the II-VI Incorporated 2009 Omnibus Incentive Plan*	Incorporated herein by reference to Exhibit 10.27 to II-VI's Current Report on Form 10-Q (File No. 000-16195) for the quarter ended December 31, 2011.
10.28	Form of Restricted Share Award Agreement under the II-VI Incorporated 2009 Omnibus Incentive Plan*	Incorporated herein by reference to Exhibit 10.28 to II-VI's Current Report on Form 10-Q (File No. 000-16195) for the quarter ended December 31, 2011.
10.29	Form of Performance Share Award Agreement under the II-VI Incorporated 2009 Omnibus Incentive Plan*	Incorporated herein by reference to Exhibit 10.29 to II-VI's Current Report on Form 10-Q (File No. 000-16195) for the quarter ended December 31, 2011.
10.30	Form of Stock Appreciation Rights Agreement under the II-VI Incorporated 2009 Omnibus Incentive Plan*	Incorporated herein by reference to Exhibit 10.30 to II-VI's Current Report on Form 10-Q (File No. 000-16195) for the quarter ended December 31, 2011.
10.31	Form of Performance Unit Award Agreement under the II-VI Incorporated 2009 Omnibus Incentive Plan*	Incorporated herein by reference to Exhibit 10.31 to II-VI's Current Report on Form 10-Q (File No. 000-16195) for the quarter ended March 31, 2012.
10.32	Form of Restricted Share Unit Award Agreement under the II-VI Incorporated 2009 Omnibus Incentive Plan*	Incorporated herein by reference to Exhibit 10.32 to II-VI's Current Report on Form 10-Q (File No. 000-16195) for the quarter ended March 31, 2012.
10.33	II-VI Incorporated Amended and Restated 2012 Omnibus Incentive Plan*	Incorporated herein by reference to Exhibit 10.01 to II-VI's Registration Statement on Form S-8 (File No. 333-199855) filed on November 4, 2014.
10.34	Form of Nonqualified Stock Option Agreement under the II-VI Incorporated Amended and Restated 2012 Omnibus Incentive Plan*	Incorporated herein by reference to Exhibit 10.30 to II-VI's Annual Report on Form 10-K (File No. 000-16195) for the fiscal year ended June 30, 2013.
10.35	Form of Restricted Share Award Agreement under the II-VI Incorporated Amended and Restated 2012 Omnibus Incentive Plan*	Incorporated herein by reference to Exhibit 10.31 to II-VI's Annual Report on Form 10-K (File No. 000-16195) for the fiscal year ended June 30, 2013.
10.36	Form of Performance Share Award Agreement (Consolidated Revenue) under the II-VI Incorporated Amended and Restated 2012 Omnibus Incentive Plan*	Incorporated herein by reference to Exhibit 10.32 to II-VI's Annual Report on Form 10-K (File No. 000-16195) for the fiscal year ended June 30, 2013.

10.37	Form of Stock Appreciation Rights Agreement under the II-VI Incorporated Amended and Restated 2012 Omnibus Incentive Plan*	Incorporated herein by reference to Exhibit 10.33 to II-VI's Annual Report on Form 10-K (File No. 000-16195) for the fiscal year ended June 30, 2013.
10.38	Form of Performance Unit Award Agreement under the II-VI Incorporated Amended and Restated 2012 Omnibus Incentive Plan*	Incorporated herein by reference to Exhibit 10.34 to II-VI's Annual Report on Form 10-K (File No. 000-16195) for the fiscal year ended June 30, 2013.
10.39	Form of Restricted Share Unit Award Agreement under the II-VI Incorporated Amended and Restated 2012 Omnibus Incentive Plan*	Incorporated herein by reference to Exhibit 10.35 to II-VI's Annual Report on Form 10-K (File No. 000-16195) for the fiscal year ended June 30, 2013.
10.40	Form of Performance Share Award Agreement (Total Shareholder Return) under the II-VI Incorporated Amended and Restated 2012 Omnibus Incentive Plan*	Incorporated herein by reference to Exhibit 10.38 to II-VI's Annual Report on Form 10-K (File No. 000-16195) for the fiscal year ended June 30, 2014.
10.41	Form of Performance Unit Award Agreement (Total Shareholder Return) under the II-VI Incorporated Amended and Restated 2012 Omnibus Incentive Plan*	Incorporated herein by reference to Exhibit 10.39 to II-VI's Annual Report on Form 10-K (File No. 000-16195) for the fiscal year ended June 30, 2014.
10.42	Form of Performance Share Award Agreement (Cash Flow From Operations) under the II-VI Incorporated Amended and Restated 2012 Omnibus Incentive Plan*	Incorporated herein by reference to Exhibit 10.36 to II-VI's Annual Report on Form 10-K (File No. 000-16195) for the fiscal year ended June 30, 2015.
10.43	Form of Performance Unit Award Agreement (Cash Flow From Operations) under the II-VI Incorporated Amended and Restated 2012 Omnibus Incentive Plan*	Incorporated herein by reference to Exhibit 10.37 to II-VI's Annual Report on Form 10-K (File No. 000-16195) for the fiscal year ended June 30, 2015.
10.44	II-VI Incorporated Second Amended and Restated Omnibus Incentive Plan*	Incorporated herein by reference to Exhibit 10.1to II-VI's Current Report on Form 10-Q (File No. 000-16195) for the quarter ended December 31, 2015.
10.45	Form of Nonqualified Stock Option Agreement under the II-VI Incorporated Second Amended and Restated Omnibus Incentive Plan*	Incorporated herein by reference to Exhibit 10.03 to II-VI's Quarterly Report on Form 10-Q (File No. 000-16195) for the quarter ended September 30, 2016.
10.46	Form of Stock Appreciation Rights Agreement under the II-VI Incorporated Second Amended and Restated Omnibus Incentive Plan*	Incorporated herein by reference to Exhibit 10.04 to II-VI's Quarterly Report on Form 10-Q (File No. 000-16195) for the quarter ended September 30, 2016.
10.47	Form of Restricted Share Award Agreement (3 year) under the II-VI Incorporated Second Amended and Restated Omnibus Incentive Plan*	Incorporated herein by reference to Exhibit 10.05 to II-VI's Quarterly Report on Form 10-Q (File No. 000-16195) for the quarter ended September 30, 2016.
10.48	Form of Restricted Share Award Agreement (1 year) under the II-VI Incorporated Second Amended and Restated Omnibus Incentive Plan*	Incorporated herein by reference to Exhibit 10.06 to II-VI's Quarterly Report on Form 10-Q (File No. 000-16195) for the quarter ended September 30, 2016.
10.49	Form of Restricted Share Unit Award Agreement under the II-VI Incorporated Second Amended and Restated Omnibus Incentive Plan*	Incorporated herein by reference to Exhibit 10.07 to II-VI's Quarterly Report on Form 10-Q (File No. 000-16195) for the quarter ended September 30, 2016.

10.50	Form of Performance Share Award Agreement under the II-VI Incorporated Second Amended and Restated Omnibus Incentive Plan*	Incorporated herein by reference to Exhibit 10.08 to II-VI's Quarterly Report on Form 10-Q (File No. 000-16195) for the quarter ended September 30, 2016.
10.51	Form of Performance Unit Award Agreement under the II-VI Incorporated Second Amended and Restated Omnibus Incentive Plan*	Incorporated herein by reference to Exhibit 10.09 to II-VI's Quarterly Report on Form 10-Q (File No. 000-16195) for the quarter ended September 30, 2016.
10.52	Form of Performance Share Award Agreement (June 30, 2019) under the II-VI Incorporated Second Amended and Restated Omnibus Incentive Plan*	Incorporated herein by reference to Exhibit 10.10 to II-VI's Quarterly Report on Form 10-Q (File No. 000-16195) for the quarter ended September 30, 2016.
10.53	Form of Total Shareholder Return Performance Share Award Agreement under the II-VI Incorporated Second Amended and Restated Omnibus Incentive Plan*	Incorporated herein by reference to Exhibit 10.11 to II-VI's Quarterly Report on Form 10-Q (File No. 000-16195) for the quarter ended September 30, 2016.
10.54	Form of Total Shareholder Return Performance Unit Award Agreement under the II-VI Incorporated Second Amended and Restated Omnibus Incentive Plan*	Incorporated herein by reference to Exhibit 10.12 to II-VI's Quarterly Report on Form 10-Q (File No. 000-16195) for the quarter ended September 30, 2016.
10.55	II-VI Incorporated 2018 Employee Stock Purchase Plan*	Incorporated herein by reference to Exhibit 10.1 to II-VI's Current Report on Form 8-K (File No. 000-16195) filed on November 13, 2018.
10.56	II-VI Incorporated 2018 Omnibus Incentive Plan*	Incorporated herein by reference to Exhibit 10.2 to II-VI's Current Report on Form 8-K (File No. 000-16195) filed on November 13, 2018.
10.57	Form of Nonqualified Stock Option Agreement under the II-VI Incorporated 2018 Omnibus Incentive Plan*	Incorporated herein by reference to Exhibit 10.01 to II-VI's Quarterly Report on Form 10-Q (File No. 000-16195) for the quarter ended December 31, 2018.
10.58	Form of Restricted Share Unit Settled In Shares Award Agreement under the II-VI Incorporated 2018 Omnibus Incentive Plan*	Incorporated herein by reference to Exhibit 10.02 to II-VI's Quarterly Report on Form 10-Q (File No. 000-16195) for the quarter ended December 31, 2018.
10.59	Form of Restricted Share Unit Settled In Cash Award Agreement under the II-VI Incorporated 2018 Omnibus Incentive Plan*	Incorporated herein by reference to Exhibit 10.03 to II-VI's Quarterly Report on Form 10-Q (File No. 000-16195) for the quarter ended December 31, 2018.
10.60	Form of Restricted Share Unit Settled In Shares Award Agreement under the II-VI Incorporated 2018 Omnibus Incentive Plan*	Incorporated herein by reference to Exhibit 10.04 to II-VI's Quarterly Report on Form 10-Q (File No. 000-16195) for the quarter ended December 31, 2018.
10.61	Form of Stock Appreciation Rights Agreement under the II-VI Incorporated 2018 Omnibus Incentive Plan*	Incorporated herein by reference to Exhibit 10.05 to II-VI's Quarterly Report on Form 10-Q (File No. 000-16195) for the quarter ended December 31, 2018.

10.62	Credit Agreement, dated March 4, 2019, by and among II-VI Incorporated, Bank of America, N.A., as Administrative Agent, Swing Line Lender and an L/C Issuer, and the other lenders party thereto	Incorporated herein by reference to Exhibit 10.01 to II-VI's Quarterly Report on Form 10-Q (File No. 000-16195) for the quarter ended March 31, 2019.
10.63	Amendment No. 1 to Credit Agreement, dated as of May 24, 2019, by and among II-VI Incorporated, Bank of America, N.A., as Administrative Agent, and the other lenders party thereto.	Incorporated herein by reference to Exhibit 10.1 to II-VI's Current Report on Form 8-K (File No. 000-16195) filed on May 31, 2019.
21.01	List of Subsidiaries of II-VI Incorporated	Filed herewith.
23.01	Consent of Ernst & Young LLP	Filed herewith.
31.01	Certification of the Chief Executive Officer pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934, as amended, and Section 302 of the Sarbanes-Oxley Act of 2002	Filed herewith.
31.02	Certification of the Chief Financial Officer pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934, as amended, and Section 302 of the Sarbanes-Oxley Act of 2002	Filed herewith.
32.01	Certification of the Chief Executive Officer pursuant to Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended, and 18 U.S.C. § 1350 as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002	Furnished herewith.
32.02	Certification of the Chief Financial Officer pursuant to Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended, and 18 U.S.C. § 1350 as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002	Furnished herewith.
101	Interactive Data File	
(101.INS)	XBRL Instance Document	Filed herewith.
(101.SCH)	XBRL Taxonomy Extension Schema Document	Filed herewith.
(101.CAL)	XBRL Taxonomy Extension Calculation Linkbase Document	Filed herewith.
(101.DEF)	XBRL Taxonomy Definition Linkbase	Filed herewith.
(101.LAB)	XBRL Taxonomy Extension Label Linkbase Document	Filed herewith.
(101.PRE)	XBRL Taxonomy Extension Presentation Linkbase Document	Filed herewith.

* Denotes management contract or compensatory plan, contract or arrangement.

(P) Denotes filed via paper copy.

The Registrant will furnish to the Commission upon request copies of any instruments not filed herewith which authorize the issuance of long-term obligations of the Registrant not in excess of 10% of the Registrant's total assets on a consolidated basis.

Item 16. FORM 10-K SUMMARY

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

II-VI INCORPORATED

Date: August 16, 2019

By: /s/ Vincent D. Mattera Jr.
Vincent D. Mattera Jr.
Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Principal Executive Officer:

Date: August 16, 2019

By: /s/ Vincent D. Mattera Jr.
Vincent D. Mattera Jr.
Chief Executive Officer and Director

Principal Financial and Accounting Officer:

Date: August 16, 2019

By: /s/ Mary Jane Raymond
Mary Jane Raymond
Chief Financial Officer and Treasurer

Date: August 16, 2019

By: /s/ Francis J. Kramer
Francis J. Kramer
Chairman of the Board

Date: August 16, 2019

By: /s/ Joseph J. Corasanti
Joseph J. Corasanti
Director

Date: August 16, 2019

By: /s/ RADM Marc Y. E. Pelaez (retired)
RADM Marc Y. E. Pelaez (retired)
Director

Date: August 16, 2019

By: /s/ Howard H. Xia
Howard H. Xia
Director

Date: August 16, 2019

By: /s/ Shaker Sadasivam
Shaker Sadasivam
Director

Date: August 16, 2019

By: /s/ Enrico Digirolamo
Enrico Digirolamo
Director

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Corporate Information

Board of Directors

Joseph J. Corasanti
Retired President, CEO and Director
CONMED Corporation

Enrico Digirolamo
Senior Advisor to Technology Companies and Manufacturing Firms

Francis J. Kramer, Chairman
Retired President and CEO
II-VI Incorporated

Dr. Vincent D. Mattera, Jr.
Chief Executive Officer
II-VI Incorporated

Marc Y. E. Pelaez, Lead Independent Director
Rear Admiral
United States Navy (retired)

Dr. Shaker Sadasivam
Co-Founder, President and CEO
Auragent Bioscience, LLC

Dr. Howard H. Xia
Retired General Manager
Vodafone China Limited

Executive Officers

Dr. Vincent D. Mattera, Jr.
Chief Executive Officer

Robert W. Bashaw II
President

Mary Jane Raymond
Chief Financial Officer

Dr. Giovanni Barbarossa
Compound Semiconductors President and Chief Strategy Officer

Jo Anne Schwendinger
Chief Legal and Compliance Officer and Secretary

Dr. Christopher S. Koeppen
Chief Technology Officer

Annual Meeting

Tuesday, November 12, 2019 at 3:00 PM EST
Meeting to be webcast from:
Fiddler's Elbow Country Club
811 Rattlesnake Bridge Road
Bedminster, NJ 07921

Stock Listing

The common stock of II-VI Incorporated is traded on Nasdaq under the trading symbol "IIVI."

Transfer Agent

American Stock Transfer and Trust Company
6201 15th Ave.
Brooklyn, NY 11219
1.800.937.5449

Independent Registered Public Accountants

Ernst & Young LLP
2100 One PPG Place
Pittsburgh, PA 15222

Securities Counsel

K&L Gates LLP
K&L Gates Center
210 Sixth Avenue
Pittsburgh, PA 15222

Financial Reconciliation Tables

This table is a reconciliation of EBITDA to Net Earnings ($ in millions)

	2015	2016	2017	2018	2019
Net earnings	66.0	65.5	95.3	88.0	107.5
Depreciation and amortization	53.1	56.7	63.6	80.8	92.4
Interest expense	3.9	3.1	6.8	18.4	22.4
Income tax expense	13.1	24.5	23.5	34.2	21.3
EBITDA	136.1	149.8	189.2	221.4	243.6

This table is a reconciliation of Adjusted Net Earnings to Net Earnings ($ in millions)

	2018	2019
Net earnings	88.0	107.5
Share-based compensation expense	19.7	25.0
Amortization expense	14.6	16.6
Acquired businesses one-time expense	2.0	3.8
Transaction cost related to pending merger	-	15.6
Impact of the "Tax Cuts and Jobs Act"	8.0	-
Tax adjustment on one-time items	(0.3)	(0.9)
Adjusted net earnings	132.0	167.6

II-VI Incorporated is an Equal Opportunity Employer. As such, it is the Company's policy to promote equal employment opportunities and to prohibit discrimination on the basis of race, color, religion, sex, age, national origin, disability, status as a veteran or other legally protected class in all aspects of employment, including recruiting, hiring, training and promoting personnel. In fulfilling this commitment, the Company shall comply with the letter and spirit of all applicable laws, regulations and Executive Orders governing equal opportunity in employment.

II-VI

375 Saxonburg Boulevard, Saxonburg, PA 16056
724.352.4455
www.ii-vi.com

MATERIALS THAT MATTER