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PRESENTATION

Operator

Good day, ladies and gentlemen, and welcome to the II-VI Incorporated Fiscal Year ’19 Second Quarter Earnings Call. (Operator Instructions) As a reminder, today’s conference is being recorded. I would now like to turn the call over to Mary Jane Raymond, Chief Financial Officer of II-VI Incorporated. Ma’am, please begin.

Mary Jane Raymond - II-VI Incorporated - CFO, Treasurer & Assistant Secretary

Thank you, Mark, and good morning. I’m Mary Jane Raymond, the Chief Financial Officer here at II-VI Incorporated. Welcome to our second quarter earnings call for fiscal year 2019. With me today on the call is Dr. Chuck Mattera, our President and Chief Executive Officer; Dr. Giovanni Barbarossa, our Chief Technology Officer and the President of the Laser Solutions segment; and Gary Kapusta, our Chief Operating Officer.

This call is being recorded on Tuesday -- on Thursday, January 31, 2019.

Just as a reminder, any forward-looking statements we may make today during this teleconference are given in the context of today only. We do not undertake any obligation to update these statements to reflect the events subsequent to today.

With that, let me turn it over to Dr. Chuck Mattera. Chuck?
Thank you, Mary Jane. Good morning, everyone, and thanks for joining us today. It really was a very busy and extremely exciting quarter for II-VI. I am pleased to have the opportunity to update you on our very strong performance and to have the chance to thank all of our people around the world who worked tirelessly to deliver the quarter.

Let me first start with some remarks on our pending Finisar transaction. All of our required filings and regulatory applications have been completed. To date, the U.S. and German competitions regulators have cleared the transaction. We expect our joint proxy statement, the S-4, to be effective on February 7, 2019, although that date may change.

During the quarter, the global M&A and integration teams of both II-VI and Finisar began our integration planning efforts in earnest. We are detailing plans to deliver the $150 million of cost synergies over a 3-year period. I believe that both companies are making good progress against our plans independently communicated to investors.

I have never been more excited about our prospects. Thanks to the strong support of Finisar’s CEO, Michael Hurlston, and the Finisar Board of Directors, I have spent time during the last few months traveling to the major Finisar facilities around the world and meeting with the employees. I am pleased to say that I am even more impressed than before with their broad-based and differentiated technologies. I see as a real positive the overlap between our cultures, in addition to the complementarity of our portfolios. I appreciate the warm reception of both II-VI and Finisar employees around the world who are enthusiastically looking forward to working together once merged.

During that time, the feedback from our major customers across our markets has been overwhelmingly positive. They are aligned with our views of the many long-term drivers of our growth and our overall thesis about the long-term value creation from combining our 2 great companies.

In short, they see the transformative power and are pleased by the depth and breadth of the combination. These drivers include increasing bandwidth requirements in optical communications, the increasing worldwide deployments of ROADMs, the emergence of the deployment cycle of the 5G wireless infrastructure, the growth of hyperscale data centers, the increasing adoption of the Internet of Things and the increasing adoption of 3D sensing-enabled virtual and augmented reality as well as machine learning.

We also believe that the Finisar monolithic Indium phosphide-based optoelectronic device and laser platform, along with its large-scale design and automated manufacturing capabilities, will allow for the creation of new applications in markets and which form the basis of a scalable platform to enable our growth. For example, the combination of 2 of our world-class product platforms, the II-VI fiber amplifier and Finisar’s Indium phosphide-based transceiver will enable the cost-effective adoption of LiDAR by innovators in autonomous driving markets.

During the quarter, we also spent valuable time listening to and communicating with a broad base of industry analysts and shareholders. As a result, we believe that increasingly, investors are gaining an understanding and appreciation of the strategic value of the transaction. While we cannot predict the closing timeline or the ultimate decision from regulators or shareholders of both companies, we are engaged with experienced U.S. and in-country advisers on the filing process we are undertaking in each jurisdiction. We do consider the approvals by the China regulatory authorities to be the long pole in the tent. However, we remain hopeful and optimistic that we will be successful in a reasonable time frame.

Now turning to the quarter. We delivered record revenues and record bookings that drove a record backlog and cash flow from operations despite the sudden softness in 3D sensing VCSEL demand that materialized during the quarter. The optical communications revenues were very strong in the quarter with customers accelerating shipments ahead of Chinese New Year.

I want to acknowledge our Photonics team, led by its President, Sunny Sun, who delivered extraordinary performance. Our revenues of $343 million grew 22% over the same quarter last year, and we had a book-to-bill ratio of 1.10. Our GAAP EPS was $0.44 per share, and our non-GAAP EPS was $0.71 per share, growing 34% compared to the same quarter last year. We generated $69 million in cash flow from operations, which was another quarterly record for II-VI. Year-to-date, cash flow from operations grew 48% compared to the first half of fiscal year ’18.

Now compared to Q2 FY ’18, revenues from the communications market grew 45%, our Military business grew more than 30%, and our Industrial and 3D Sensing markets were steady overall. Sales of silicon carbide substrates grew more than 60%, and we continue to expand our investments...
in manufacturing scale to position us to capture the longer-term opportunities at wireless base stations and especially the electric vehicle ecosystem it represent.

Our outstanding growth in Optical Communications were driven by the deployment of ROADMs in China, the beginning of the build-out of the 5G optical infrastructure and growth in our unique product platforms such as the micro pump for high bit rate coherent transmission and long-haul, metro and data center interconnects. We also saw a record bookings for submarine pump lasers from leading submarine system OEMs due to our industry-leading platform. The strong performance from our team from CoAdna, or the II-VI WSS division, was pivotal as demand for our Wavelength Selective Switch products accelerated. This is another good example of the success of our M&A and integration strategies.

Our military business continued on its growth trajectory this quarter as we continue to benefit from the early ramps of multiple new programs that we won over the last 12 months. Many of these programs are focused on surveillance and reconnaissance, and customers continue to be pleased with the benefits they receive from our unique capabilities, including those expected in the future from our product roadmaps such as intelligent optical systems.

Regarding wide bandgap electronics, which drove the bookings in Performance Products this quarter, we recorded the first annual booking from our long-term agreement with Sumitomo Electric Device Innovations, or SEDI, who’ve been a long-standing strategic customer of our silicon carbide substrates.

During the quarter, we’ve also began a strategic partnership with SEDI to develop our GaN on silicon carbide device manufacturing capability over the next 2 years. We are really excited to begin taking this bold move to deepen our strategic relationship to this next level since SEDI is widely reported to be the market leader in GaN RF devices. We believe that this will further our long-term relationship and position us better to more fully utilize all of our core assets.

To that end, we will step up our R&D investments during the coming quarters to accelerate our GaN on silicon carbide process and device development at our optoelectronic device fab in Warren, New Jersey. The silicon carbide orders also included an increase in demand from our customers in the power electronics market as the activity in that segment of the market continues to grow.

As we turn to the second half of the year, we are aware that market uncertainties and volatilities may continue. We will stick to our game plan that requires us to be focused on delivering 1 quarter at a time, setting our priorities to realize long-term shareholder value in the service to our customers, our employees and to the world.

We will continue to do our very best to make the most of our opportunities and act with a great sense of urgency on delivering Q3 and positioning the company for a strong finish to FY ‘19.

With that, I’ll turn it over to Gary to discuss some of our operational initiatives and achievements. Gary?
Notably, we are continuing to invest in EUV materials, silicon carbide substrates and terrestrial and submarine pump lasers along with elements of their vertically integrated supply chains.

Our cost and expense management initiatives across the company are on track, and we fully expect to achieve our planned savings and procure materials and service – services and cost of quality improvements. Our operational excellence efforts and unrelenting focus on quality over the first half of the fiscal year are helping us to realize the 48% year-over-year improvement in cash flow from operations.

We have successfully completed the integration of our CoAdna acquisition in record time. Our M&A team has our integration planning efforts for the planned acquisition of Finisar well underway, and we expect the expense between $4 million to $6 million for each of the next 2 quarters to work on the integration, regulatory and legal matters and on the financing.

With that, I'll turn it over to Giovanni.

Giovanni Barbarossa - II-VI Incorporated - CTO & President of Laser Solutions Segment

Thank you, Gary, and good morning. We recently announced several exciting new technologies and product platforms, which leverage our engineered materials core competencies to address large and growing markets.

Early this week, we announced our participation in Horizon 2020, a 4-year program funded by the European Commission aimed at establishing the world’s first 200 millimeters pilot production facility for power electronics based on silicon carbide. Scaling the silicon carbide technology platform from 150 millimeters to 200 millimeters is expected to drive cost down and spur broad adoption, and we are proud to be the substrate supplier to the program.

Last November, we announced that proprietary chemical process called selective ion recovery that refines industrial waste streams into economical sources of scandium at 50% of the cost of conventional extractive techniques and with benefits to the environment.

We believe that the market for scandium could reach $1 billion within the next 10 years, driven by laser additive manufacturing of ultrahigh strength yet lightweight aluminum alloys for aerospace and automotive applications. As an industry leader in infrared optics, at the Consumer Electronics Show, we announced our new zinc sulfide micro lenses for miniature infrared cameras that can be integrated seamlessly in cars to improve driver visibility or complement advance driver assistance systems.

We also announced our dual bandpass filters that enables the integration of certain hardware functions such as digital photography and 3D sensing into a single camera. Such a product is the complementary alternative to our low angle shift filters, which enables facial recognition.

At Photonics West next week, we will show our newest products for the life sciences market. These included 0 pixel shift filter for high-performance fluorescence microscopy and the 405 nanometer blue laser module, which improves measurement sensitivity in advanced flow cell cytometers, enabling greater accuracy and faster measurements.

In our semiconductor laser portfolio, we announced several new products. These include the red laser module, which enables precise workpiece alignment and process control in high-power laser systems.

In addition, we announced pump laser diodes and modules with higher output power, enabling cost-effective designs of fiber laser and direct diode lasers. And the innovative beam shaper optics to advance the capability of industrial lasers for micro materials processing.

Finally, we introduced to the market a new submarine pump laser module based on our advanced geo line laser chip, which is more powerful and energy-efficient than previous generations.

With that, let me turn it over to Mary Jane.
Mary Jane Raymond - II-VI Incorporated - CFO, Treasurer & Assistant Secretary

Hello. Good morning. The good growth in the quarter was advantageous to the quarter’s profitability and cash flow.

The company’s overall gross margin for Q2 was 38.4%, reflecting a mix shift in the quarter towards more communications revenue. The operating margin was 11.5% or 14.1% adjusted for acquisition-related expenses for the CoAdna acquisition and the pending acquisition of Finisar.

The EBITDA margin was 18.3% on a GAAP basis and 20.8%, excluding transaction-related costs. Regarding the segment operating margin, Laser Solutions saw the benefit of steady performance across their end markets with an 11.6% operating margin compared to 9% in Q2 of FY ’18 and 11.6%, sequentially.

Photonics adjusted operating margin of 15.4%, excluding onetime costs for CoAdna, compares to last year’s margin of 14.1%. The Performance Products operating margin advanced to 14.7% from 11.1% in the same quarter of the prior year due to a combination of favorable mix and higher operating efficiencies, particularly in military and silicon carbide.

The effects of tariffs remained relatively immaterial this quarter. The Q2 record backlog of $513 million consist of $200 million in Photonics, $203 million in Performance Products and $110 million in Laser Solutions. The backlog contains orders that will ship over the next 12 months.

Capital expenditures this quarter were $39 million. The Q2 FY ’19 tax rate was 17%, and we expect a tax rate of 17% to 20% for the year. Our reported EPS in the quarter was $0.44 a share, and $0.71 a share on an adjusted basis. The adjustments include $5 million in share-based comp, $4.1 million in amortization and $8.5 million in acquisition-related onetime costs, including those for the planned acquisition of Finisar.

Our cash is $230 million, and our net debt position is $250 million. We did not repurchase any shares this quarter and still have $31 million remaining on our authorization.

The cash flow from operations at $69 million this quarter and $88 million year-to-date reflects both the work on operating efficiency and on working capital management. We repaid $60 million of the outstanding debt from a combination of acquired cash and the good work to generate the cash on hand.

Turning to the outlook. The outlook for the third fiscal quarter ended March 31, 2019, is revenues of $335 million to $343 million and diluted earnings per share of $0.36 to $0.42, including $0.06 to $0.09 per share of integration costs. On an adjusted basis, the earnings per diluted share is estimated at $0.60 to $0.69, which includes $0.12 for share-based comp, $0.06 for amortization expense and $0.06 to $0.09 for planned integration activity. This is all at prevailing exchange rates.

The weighted average share count is 65.7 million shares. This quarter, the convert remains slightly antidilutive, so we need not add back the 7.2 million shares.

Now as we turn to the Q&A, remember that our actual results may vary based on product mix, customer orders, competition and general economic conditions. I’ll also remind you that our answers to your questions today may contain certain forward-looking statements. We will answer them based on the basis of our best knowledge today, and actual results may differ materially.

In addition, during the Q&A, we will abide by our obligations to protect our customers’ confidentiality.

Mark, you may open the line for questions.
QUESTIONS AND ANSWERS

Operator
(Operator Instructions) And our first question comes from the line of Troy Jensen of Piper Jaffray.

Troy Donavon Jensen - Piper Jaffray Companies, Research Division - MD and Senior Research Analyst
First of, congrats on a really stellar execution of your team. So how about a quick -- first on Photonics, the 18% sequential growth and 44% year-over-year growth is pretty impressive. It sounds like it wasn't aided by 3D Sensing. So can you just talk organically? I'd be curious to know kind of how much CoAdna contributed in the quarter and just the sustainability of the Photonics business.

Mary Jane Raymond - II-VI Incorporated - CFO, Treasurer & Assistant Secretary
So CoAdna probably added in the neighborhood of about $10 million year-over-year. And as for the sustainability, I think you can see, looking at their book-to-bill ratio, that we are seeing the beginnings of what looks to be a very strong market.

Vincent D. Mattera - II-VI Incorporated - President, CEO & Director
Yes, I'll add to it. Thanks, Mary Jane. Troy, our ROADM business was very strong, and it was not only derived from our business in China but also in the U.S. and Europe. I would say it's the strongest we've ever seen it. Coherent, we're gaining market share with the product offerings that we have that are uniquely differentiated. Our access market grew. We basically grew across the board on every cylinder in the optical communications market.

Troy Donavon Jensen - Piper Jaffray Companies, Research Division - MD and Senior Research Analyst
Chuck, would you say the same in the datacom business within optics for you? I know it's pretty small for you, but just curious.

Vincent D. Mattera - II-VI Incorporated - President, CEO & Director
Okay. I'll say this, the datacom was soft, and datacom for us, this is excluding what the DCI -- but datacom was soft due to lower overall demand. And we did experience a little bit of softness compared to the prior quarter. It was down more than 10% compared to the prior year.

Troy Donavon Jensen - Piper Jaffray Companies, Research Division - MD and Senior Research Analyst
Okay. And then how about a follow-up for you, Mary Jane. Just on a gross margins. They were down sequentially here. I understand it's a mix because of the Photonics business. But if that segment is going to be stronger here kind of going forward, especially in March quarter with the price negotiations, can you just give us any kind of sense on how gross margins would trend here in Q1 -- or in the March quarter?

Mary Jane Raymond - II-VI Incorporated - CFO, Treasurer & Assistant Secretary
First of all, we don't forecast the margin. But generally speaking, as I've said before, we continue to remain focused on the margins in the company. I think what's important here is to continue to look at the gross margin and the operating margin in concert. Because sometimes, the management of the cost underneath the gross margin is more important than even the gross margin. But the gross margin remains in our sights, but nonetheless, I'm not going to forecast it forward.
Okay. Understood. And then last one here for Chuck and I'll see the floor. But sorry to ask you, but I just want to. The stock had a pretty violent drop when you announced the Finisar acquisition, and I know you’ve been out talking to a lot of large shareholders. I’d just be curious to know what they’re telling you, what you think the odds of shareholder approval is for this transaction?

Mary Jane Raymond - II-VI Incorporated - CFO, Treasurer & Assistant Secretary

Well, first of all, I think the shareholders have done a good job telling us about what they have to say about this transaction, what their questions are. And we’ve had some very good response from shareholders following discussions with them about what they think they understand better now, honestly. I think this is like maybe a lot of things in II-VI, it’s not actually immediate on the surface right away. But generally speaking, I’d say increasingly, we’re getting good understanding from the shareholders. We are certainly not going to predict what the shareholder vote is going to be, but we are certainly very hopeful that, as the shareholders have come to understand what the combination is, there is a growing understanding that this is a very, very good combination.

Vincent D. Mattera - II-VI Incorporated - President, CEO & Director

And I remain optimistic about it, Troy, for sure.

Ku Kang - B. Riley FBR, Inc., Research Division - Senior Analyst of Optical Components

First question is on seasonality. In the past, I mean, March quarter, it has been stronger sequentially from the December quarter. But based on the midpoint of your outlook, it will be down sequentially. Can you just go over which segment or segments will be down this quarter? And is this more of a trend or exception?

Mary Jane Raymond - II-VI Incorporated - CFO, Treasurer & Assistant Secretary

I think we talked for a while now that the introduction of 3D sensing into the world here changes a little bit what the pattern of the seasonality in the company would be. So for example, for industrial, that has typically been the lowest in the 9/30 quarter. So while I think that probably will remain across the same across the pattern of the year, we’ve talked quite a lot about the fact that Q2 or Q3 could be the lower ones for a number of factors. Number one, whether Christmas is stronger, working over Christmas is stronger or working over Chinese New Year and the opposite, but also that 3D sensing is not a particularly strong driver in the January quarter, not necessarily -- the March 31 quarter, not necessarily a driver we’ve had in the revenue for the past say, 5 years. So that is a new entrant into the mix and I’d say that’s actually part of this as well. So I think what you want to think about here is not to really necessarily upset on a $4 million difference between where we’re landing on Q2 and the big quarter in the guidance and really look at kind of the natural seasonality that's coming in for the end markets that we have.

Ku Kang - B. Riley FBR, Inc., Research Division - Senior Analyst of Optical Components

And Chuck, you talked about some softness in 3D S. I mean, was is it up or down sequentially in the December quarter? And how should we think about for the March quarter on 3DS, excluding consumer -- auto consumer stuff?
Mary Jane Raymond - II-VI Incorporated - CFO, Treasurer & Assistant Secretary
I think as I’ve just said, normally, the 3/31 quarter is lower than the 12/31 quarter, which itself tends to be stronger than the 9/30 quarter. So it was up a little bit over the 9/30 quarter. 9/30 was particularly strong. And I think that’s the sum total of the answer.

Ku Kang - B. Riley FBR, Inc., Research Division - Senior Analyst of Optical Components
Now, you’ve said that 3DS plus consumer was about 5%. Can you give just us a flavor how they break down? Is 3DS bigger than auto consumer or...

Mary Jane Raymond - II-VI Incorporated - CFO, Treasurer & Assistant Secretary
No, I think if you get that level of smallness, we’re not going to get into that. But generally speaking, obviously, the 3DS portion is bigger than most of consumer, but that’s probably the color we’re going to give.

Ku Kang - B. Riley FBR, Inc., Research Division - Senior Analyst of Optical Components
Got it. And then on China, it was about 20% of revenue. Can you give us a split -- rough split between optical versus industrial lasers?

Mary Jane Raymond - II-VI Incorporated - CFO, Treasurer & Assistant Secretary
Well, as I said before, the optical portion tends to be more than half of it, a little bit more than 3/4 of it than industrial.

Ku Kang - B. Riley FBR, Inc., Research Division - Senior Analyst of Optical Components
Got it. And then lastly, on silicon carbide. What were the bookings and what’s the time frame for shipments? I know you said the backlog you mentioned is 1 year, but just wondering the typical shipment timeframe for silicon carbide orders.

Mary Jane Raymond - II-VI Incorporated - CFO, Treasurer & Assistant Secretary
First of all, we don’t give the bookings by divisions. But I will say that for silicon carbide, the bookings remain very, very strong. And generally speaking, we probably have the strongest book-to-bill in the silicon carbide products that we have, equal to or possibly second only to military.

Ku Kang - B. Riley FBR, Inc., Research Division - Senior Analyst of Optical Components
Got it. I have one more question on OpEx. You said you’re investing in silicon carbide in terms of R&D. I mean, how should we think about OpEx going forward?

Mary Jane Raymond - II-VI Incorporated - CFO, Treasurer & Assistant Secretary
So for -- with respect to Chuck’s comment about the investment in -- down silicon carbide devices, I think, at least certainly from the second quarter, you should see R&D start to tick up a little bit for that investment. That’s important. The company is going to continue to work very, very hard on the G&A. Absent, of course, the integration cost required for the pending acquisition of Finisar. But I do think for R&D, we should probably see that tick up against Q3 -- against Q2.
Operator
And our next question comes from the line of Meta Marshall of Morgan Stanley.

Meta A. Marshall - Morgan Stanley, Research Division - VP
First, on 3D sensing. Just wanted to make sure that the change in orders that kind of came in the quarter, that was just kind of what was widely seen with kind of large smartphone customers during the quarter and not due to any kind of change in customer relationship?

Mary Jane Raymond - II-VI Incorporated - CFO, Treasurer & Assistant Secretary
No comment exactly on the customer. But yes, I would say that the change in the orders mid-quarter was due on the information. Everybody saw it mid-quarter right around the time we announced the Finisar acquisition.

Vincent D. Mattera - II-VI Incorporated - President, CEO & Director
And we remain in good standing with our 3D sensing customers.

Meta A. Marshall - Morgan Stanley, Research Division - VP
Okay. Got it. And then just given weaker China industrial data points. Clearly, you guys are still doing very well kind of on the industrial lasers business. But just any change kind of in what you are seeing as far as China customers or China industrial customers?

Vincent D. Mattera - II-VI Incorporated - President, CEO & Director
Our industrial business grew again, Meta, quarter -- for the same quarter compared to last year. I mean, we continue both to serve the fiber laser and direct diode laser customers in China, and we’re expecting that, that business is going to continue to grow.

Mary Jane Raymond - II-VI Incorporated - CFO, Treasurer & Assistant Secretary
And certainly...

Meta A. Marshall - Morgan Stanley, Research Division - VP
And is that -- go ahead, I'm sorry.

Mary Jane Raymond - II-VI Incorporated - CFO, Treasurer & Assistant Secretary
No, no.

Meta A. Marshall - Morgan Stanley, Research Division - VP
I mean, just -- in terms of kind of maybe breaking down growth, is that still same customers growing quarter-on-quarter? Or is it still just from -- or a combination of that and addition of new customers from new kind of laser companies starting?
Mary Jane Raymond - II-VI Incorporated - CFO, Treasurer & Assistant Secretary

First of all, I would say that notwithstanding what’s — all the discussion, I don’t think -- we think about the adoption of Laser Power into industrial applications in the long run. That is not diminishing. I don’t -- we are not going to give the breakdown customer by customer. But I would say that generally speaking, we continue to see our lives across our customer base, including the entrance of new customers.

Vincent D. Mattera - II-VI Incorporated - President, CEO & Director

Yes, it's a large ecosystem. It's a large ecosystem and we've commented in the past we have had a significant customer list. And the demand and the mix of those products sometimes will grow a little bit faster than other times. But it's a -- it's basically a significant market for us in terms of the depth and breadth that we're addressing.

Operator

And our next question comes from the line of Jim Ricchiuti of Needham & Company.

James Andrew Ricchiuti - Needham & Company, LLC, Research Division - Senior Analyst

Just want to follow up again on the tone of business in Industrial just because there’s been so much talk about that and in particular in China. I mean, if I look at your Laser Solutions bookings down year-over-year, and you include in that 3D sensing. So I'm presuming that's had some impact as well. But is there a way for you to give us a sense as to how the overall industrial bookings were in the quarter versus either Q1 or the year-ago quarter just in light of the concerns people have about softening demand?

Giovanni Barbarossa - II-VI Incorporated - CTO & President of Laser Solutions Segment

I would say I -- Jim, this is Giovanni. I’ll give a data point. We just received the numbers about the bookings for aftermarket in North America, and we have a record for the company ever. Of course, that’s the majority CO2 lasers, but that can kind of explain a little bit what the laser utilization would be in the next few months. If you have an aftermarket record bookings in 1 month for the comp in January, I mean, I think it’s significant. Now it’s only North America, but we also see that growing in the rest of the world. So do we have change of our tendency versus the -- versus maybe the first quarter. So there is no doubt that China is still strong, maybe it will not be as strong as last quarter, but we're still relying on the market share growth of our customers in China, which we think are more than 20. I believe they are more than 20. So that -- it’s so diversified, and it goes from micro to macro material processing. It goes through so many applications, it's very diversified. And so that's what we've seen today between China and North America. And you are also picking up on the market sales.

Mary Jane Raymond - II-VI Incorporated - CFO, Treasurer & Assistant Secretary

One of the things, just to maybe point out as well, with the bookings in industrial is that sometimes when the sales of newer systems, newer laser systems, are pausing a little bit or a little bit down, but the usage of the installed base can sometimes go up. And the orders for the replacement in the aftermarket, as Giovanni says, do not necessarily come in for a year. They tend to come in a little bit as needed. That’s what we referred to inside as book and ship. So that's not necessarily going to give rise to slots in the bookings that would cause it to be particularly high. I would say that we consider this book-to-bill to be good and rather normal.

James Andrew Ricchiuti - Needham & Company, LLC, Research Division - Senior Analyst

Okay. That’s helpful. And last question for me and I’ll -- is I’m just wondering if you see any impact at all on the business in the current quarter, if -- from the shutdown of the U.S. government, which is obviously past. But is there any -- or any implications or any parts of the business that we need to be aware of in this quarter or is it really not an issue for you guys?
Mary Jane Raymond - II-VI Incorporated - CFO, Treasurer & Assistant Secretary

I would say that it’s not particularly material to the actual operations of the company. We -- as Chuck was able to announce, the period for the HSR has lapsed. So not something there, but when Chuck mentioned that they’re signing on the effective date, that the S-4 may move, we could see that we have some activity as a result of the shutdown. But generally speaking on the operations of the company, not really much.

Vincent D. Mattera - II-VI Incorporated - President, CEO & Director

Yes. So minor delays in our business proposal activity in our military business. Nothing material.

Operator

And our next question comes from the line of Paul Silverstein of Cowen.

Paul Jonas Silverstein - Cowen and Company, LLC, Research Division - MD and Senior Research Analyst

First off, and I apologize because I know you’ve been asked this question on more than one occasion before including from myself, but can you review the geopolitical risk relative to China on both sides of the equation, both in China and in the U.S.? And then I’ve got 1 or 2 more questions.

Mary Jane Raymond - II-VI Incorporated - CFO, Treasurer & Assistant Secretary

Well, let me start off by saying, first of all, I think it’s probably just about every call we’ve had, at least since I’ve been here, which is almost 5 years, we have talked about the fact that we remain ever watchful all the time about China because there are aspects of that economy that are less easy to predict than others normally, right? So we normally have that. But I’d say that while certainly we don’t love hearing all the trade tensions around. I mean, for us, we’ve really tried to focus on heads down, business as usual and kind of running the business going forward. We obviously have a very large footprint in China. That is not only the Chinese market, but the world market. And we have a large footprint outside of China that also serves the China market. So it’s a very interdependent ecosystem for us and perhaps others. So while we are very watchful about it, let me turn it over to Chuck at this point, I would say that it’s -- there’s certainly more of it than we’ve had in the past, but we are always watchful about making sure we are keeping our ears to the ground on how to manage an economy that can run differently than the U.S. economy.

Vincent D. Mattera - II-VI Incorporated - President, CEO & Director

Okay. I would remind people that we don’t have any 10% customers in the company. That’s one fact. With regard to the tariffs, on Q2, we didn’t have any material impact to our business. And Q3 and going forward, we still don’t have any view of them being material, unless there’s an action by the U.S. government.

Now having said that, I would like to just make a -- just a general comment that managing risk, enterprise-wide risk, is a responsibility of the executive team in this company, and we are focused on it inside the balance of the operations that we control. We’re cognizant of it, and we have a systematic approach to it. But outside the bounds of -- outside the perimeter of our business as it relates to negotiations between governments, that all we can do is stay very well informed and aware and prepared, and that’s the path we’re taking forward.

Paul Jonas Silverstein - Cowen and Company, LLC, Research Division - MD and Senior Research Analyst

All right. One more if I may. You obviously have a very nicely diversified business. What are you most excited about and what are you most concerned about? Your top 2 or 3 drivers? I know there are a lot of different variables, but again, what are you most excited about over the next 12 months from both a revenue profitability standpoint? And what are the greatest concerns?
Vincent D. Mattera - II-VI Incorporated - President, CEO & Director

I think the momentum that we have in Optical Communications is going to continue. I think our silicon carbide business is going to continue to grow. We're simply constraining it at the moment by the amount of capacity that we can add. We're sold out in some of our lines. And so that's a worry about how fast we can add capacity and serve customers. Our Military business, I'm expecting, will continue to grow. I believe that our Industrial and 3D Sensing business will be steady, and our Semiconductor capital equipment business -- now seeing the rest of the impact in the semi cap business here in the December quarter, I'm thinking that we may be looking into the second half of the year for the kind of sustained growth to continue. And on EUV, it kind of feels like on EUV, that it's just going to remain solid. We're adding incremental capacity at the request of the supply chain. So as soon as we can, we're thinking that we'll be able to take that up a notch as well.

Operator

And our next question comes from the line of Tom Diffely of D. A. Davidson.

Thomas Robert Diffely - D.A. Davidson & Co., Research Division - MD & Senior Research Analyst

A couple of silicon carbide questions. Obviously, some nice momentum on the base stations in EUV. Does this technology ever get into the handsets?

Vincent D. Mattera - II-VI Incorporated - President, CEO & Director

Which technology are you asking about, Tom?

Thomas Robert Diffely - D.A. Davidson & Co., Research Division - MD & Senior Research Analyst

The silicon carbide.

Vincent D. Mattera - II-VI Incorporated - President, CEO & Director

GaN on silicon carbide?

Thomas Robert Diffely - D.A. Davidson & Co., Research Division - MD & Senior Research Analyst

In either format, yes.

Vincent D. Mattera - II-VI Incorporated - President, CEO & Director

To my knowledge, the focus for the value proposition is inside the base station infrastructure. So -- and there may be people thinking about it and talking about it. But in the near term, that's not on our radar screen or the radar screen of our partners, not to my knowledge.

Thomas Robert Diffely - D.A. Davidson & Co., Research Division - MD & Senior Research Analyst

Okay. And a moment ago, you had mentioned that there was a little capacity constraint on silicon carbide. What is the lead time right now for you to meaningfully add capacity in that space?
Gary, you want to take that?

**Gary Alan Kapusta** - **II-VI Incorporated - COO**

Yes. Sure, Tom. Lead time in terms of installing a new equipment is probably in the 9- to 12-month range, and we're bringing on capacity based on the long-term agreements we're able to secure with customers and doing it in a very organized and rational manner.

**Thomas Robert Diffely** - **D.A. Davidson & Co., Research Division - MD & Senior Research Analyst**

Okay. That makes sense. And then finally, Mary Jane, you talked previously about some of the old, mature businesses doing well. Just kind of curious, is that a general comment for just the health of the more mature CO2 laser business that you have, the more recurring revenue streams?

**Mary Jane Raymond** - **II-VI Incorporated - CFO, Treasurer & Assistant Secretary**

Well, on the -- so first of all, on the core businesses, yes. I think the whole of the industrial business is doing -- is very, very solid. The military market, which we also count as a core business, had some very, very nice growth in the quarter. And frankly, there's a lot of core on the optical communications market, which also saw some tremendous growth in the quarter. So yes, fundamentally underneath, even if we were to look kind of the product by product, it's a very, very solid base.

And our next question comes from the line of Mark Miller of the Benchmark.

**Mark S. Miller** - **The Benchmark Company, LLC, Research Division - Research Analyst**

I was wondering if you could break down a little bit more your silicon carbide business in terms of sales for electric vehicles and 5G. Does that break out as electric vehicles exceeding that or is 5G a greater part of silicon carbide?

**Vincent D. Mattera** - **II-VI Incorporated - President, CEO & Director**

Okay. I'll be happy to take that, Mark. Thanks for your comments. I think we may have mentioned 1 quarter or 2 ago that to cross over the place where now our silicon carbide substrates for power electronics are actually more than 50% of the revenue generation for this product line. And over time, given the size of the electric vehicle infrastructure and the sheer value proposition of silicon carbide for inverters and for industrial motor drives for power factor correction and the like, it is going to be the biggest part of the market. The good news is that, again on silicon carbide, market itself is growing. And so even our semi-insulating RF substrate business is also growing. But for sure, we see the power electronics basically going to stay and surpass it. 6% of the revenues in the quarter were for the whole of the product portfolio, and more than half of our revenues were for the power electronics. Is that fair?

**Mark S. Miller** - **The Benchmark Company, LLC, Research Division - Research Analyst**

Lumentum indicated last quarter they saw significant weakening in their diode business, which had been very strong for most of the year. I'm just wondering what you're seeing in diodes.
Mary Jane Raymond - II-VI Incorporated - CFO, Treasurer & Assistant Secretary
Well, the laser diodes are used at a variety of end market. Chuck, which market?

Vincent D. Mattera - II-VI Incorporated - President, CEO & Director
Yes, I don’t know for which market, Mark. Is it industrial, 3D sensing...

Mark S. Miller - The Benchmark Company, LLC, Research Division - Research Analyst
They just said it was down significantly. I think it might be coming more from semiconductor. I'm not sure. They didn’t give that much color, but they just said that it weakened significantly.

Giovanni Barbarossa - II-VI Incorporated - CTO & President of Laser Solutions Segment
No, as I said earlier, I think we’re seeing pretty steady demand for whether it is high power lasers for industrial applications or for telecom pumps, we said in the introduction with the submarine. So it’s across the board, all come from the same fab. I think we've seen a pretty strong demand.

Mary Jane Raymond - II-VI Incorporated - CFO, Treasurer & Assistant Secretary
Yes. This has been good growth in Q1, nice growth over the same period last year.

Mark S. Miller - The Benchmark Company, LLC, Research Division - Research Analyst
And finally, I'm sorry if I missed it, did you give out break on industrial sales as percentage of total percentage of sales?

Mary Jane Raymond - II-VI Incorporated - CFO, Treasurer & Assistant Secretary
Yes. It’s just under 30%.

Operator
And our next question comes from the line of Sidney Ho of Deutsche Bank.

Shek Ming Ho - Deutsche Bank AG, Research Division - Director & Senior Analyst
A couple of questions on silicon carbide. I think that in the past, you have talked about the potential growth rate for your bare silicon carbide substrates. Now that you have also -- you’re also going after again on silicon carbide, can you talk about what kind of incremental TAM does that represent for you guys? And can you talk about the competitive dynamics there? Is that kind of similar to bare substrates side?

Mary Jane Raymond - II-VI Incorporated - CFO, Treasurer & Assistant Secretary
So for TAM point of view, I think what we talked about is that the TAM for devices, it’s about 3x as large as the TAM for the substrate. So -- and that’s true between wireless and RF. With respect to the competitive dynamic, I'll let Chuck take that one.
As I understood your question, it's really about the difference between the GaN on silicon carbide device versus the substrate growth. Is that your question, Sidney?

Right.

Right. I think we've said a lot about the substrate. And with regard to the GaN on silicon carbide device, based on the agreement that we have in, which we announced a couple of months back, we will be making GaN on silicon carbide devices for Sumitomo Electric Device Innovations. So they are the market leader today and their ability to continue to drive their growth, including penetration into the overall TAM and our ability to execute timely, is going to basically control our growth in the GaN on silicon carbide market as it relates to the terrestrial market for wireless base stations.

Okay. Excellent. My follow-up question is with regards to the press release you guys have on the 200 millimeter substrates with Horizon 2020. Is that the first announced program using a 200-millimeter wafers? And can you remind us of the cost advantage of 200 millimeters versus 150 millimeters and when do you expect the timing in terms of cost -- maybe cost crossover with the 150?

This is Giovanni here. So I think we first announced the 200 millimeters silicon carbide substrate capabilities about '15 -- sorry? Yes, 2015. Quite some time ago. And we -- I think that we're the first to come out with a size as well as the quality for that kind of size. We -- I think you're right, we believe that the pilot program financed by the European committee is probably the first in the world and we'll be -- as far as we know, we are the only supplier that will be in that program. And as we've said, it's the first attempt to scale from 150 to 200 millimeters. Now in terms of cost, of course, the idea, as we said in the script, is that they will drive cost down for the applications. And of course, the cost per millimeter square of the substrate will come down eventually, too. So we're not going to say what the price for the substrate is today or will be in the near future. But obviously, the expectation is that it will create quite an elasticity in the demand on the market.

It'll take time for the quality to be able to get to the level, that's at 100 millimeter and then 150 millimeter. But it will happen. And when it happens and the device yield and reliability for the devices that have to be fabricated on it are equal to or better, the cost differential and access to 8-inch fabs with any one of the players in the marketplace that elect to focus on is going to drive more demand. And I think, over time, we're going to find that we have customers both at 150 and 200. This is a very valuable program for us to be intimate with the device makers and the innovators in this technology.

That's great. Maybe one last for me. Just switching back to the operating margin, the -- by segment. The Performance Products have a good -- very -- a record operating income on a non-GAAP basis. I think it's also a record margin. If you look forward, how should we think about operating by -- operating margin by segment? Will Performance Product be consistently the most profitable segment and also the fastest-growing segment?
Mary Jane Raymond - II-VI Incorporated - CFO, Treasurer & Assistant Secretary

So first of all, I think I probably said before that those resting range, so to speak, for the operating margin for Performance Products is really probably between 10 and 15 and it may be 11 to 16, but I don't think that you should take this margin and assume that much if we delivered every quarter. I do think that they have a lot of areas for growth. There's no question about it. We've now seen that for probably 6, if not 8 quarters. But I don't know that it necessarily will be the fastest growing segment every single time. I mean, we've seen periods where, particularly with the Military being part of that segment and even the programs Giovanni just said with respect to the Horizon 2020 program, the demand for programs like that are not always steady. They can be more lumpy even in the revenue. So I think that we should absolutely see that the Performance Products segment is really, if you will, kind of coming to its own where really pretty much every product that they worked very hard to develop has come into the light of day and has been sought after by customers at an increasing rate. But we may well see as we've seen, for example, last year, that we see periods of very good growth on industrial or very good growth as we're just about to see here in Optical Communications. I think the margins, with respect to the operating margins for the other segments, I think we've also talked about. The 3D sensing pick-up in Laser Solutions is important for getting them to the high-teens and the Performance Products and the Photonics teams have done just a really masterful job working to keep their margin in the low to mid-teens even though, I think, if they really saw a down period, their margin probably goes to something like 7 to 9.

Operator

And our next question comes from the line of Richard Shannon from Craig-Hallum.

Richard Cutts Shannon - Craig-Hallum Capital Group LLC, Research Division - Senior Research Analyst

Maybe I'll follow up on the topic of Performance Products again, highlighting the excellent margins you had in the December quarter. To what degree was that associated with? Military-type programs versus silicon carbide or other contributors?

Mary Jane Raymond - II-VI Incorporated - CFO, Treasurer & Assistant Secretary

I'd say that certainly the military program can be good margin business. But honestly, given how some of the military work is contracted actually, sometimes it's the operating margin that -- that's the gross margin I was speaking to -- the operating margin that's actually a little bit stronger. So on the one hand, yes, the tick up in the revenue is certainly helping them. I think the same thing is true in the silicon carbide area. What I would say, our total management business fight very, very hard to keep their margins as does the Precision Ceramics team.

Richard Cutts Shannon - Craig-Hallum Capital Group LLC, Research Division - Senior Research Analyst

Okay. That's helpful. Let me jump over to Optical Communications. Obviously, you had a very good end to the calendar year. While you didn't snowed it directly, I guess, about what you're expecting for March. Maybe if you can help us look at that business from a bookings trend point of view. And I know that you called us. Specifically, ROADM is doing well. Maybe if you can split Optical between ROADM and the rest of the business going forward or specifically in the March quarter.

Mary Jane Raymond - II-VI Incorporated - CFO, Treasurer & Assistant Secretary

So first of all, I'm not sure -- we don't forecast bookings for the whole company let alone by segment. And then we can't really for sure give them by price. But I would say it's something that's really worth noting as we have seen some very, very nice bookings from the Photonics and the Optical Communications business now for a while. Honestly, it wouldn't surprise me if what we saw with that really materialized more into revenue and the bookings kind of moved a little bit lower because at some point, people start taking the product, right? But the backlog is very, very strong in
Optical Communications. And as we've said, I think we're saying for the last few quarters, it looks like the beginning of a strong market. Go ahead, Chuck.

Vincent D. Mattera - II-VI Incorporated - President, CEO & Director

Yes. I would add that I spoke to Sunny this morning, at 3:00 this morning. He was happy to report that we had a record-booking for the month of January. And it's just an indicator to us that the momentum is continuing to build. We hope it will continue. And -- but we're really pleased. We're sold out. People are asking us to add capacity. And we're going to do the best we can in the service to our customers.

Richard Cutts Shannon - Craig-Hallum Capital Group LLC, Research Division - Senior Research Analyst

Okay. Great to hear. A couple more questions for me, one on 3D sensing. Chuck, if you could give us a sense of your overall engagements going on with future customers, both in the Android ecosystem and, otherwise how you're doing there? Just any kind of thoughts looking out over the next year.

Vincent D. Mattera - II-VI Incorporated - President, CEO & Director

Yes. Okay. I'll ask Giovanni. That's his business. So Giovanni, please take it up.

Giovanni Barbarossa - II-VI Incorporated - CTO & President of Laser Solutions Segment

Yes. So the engagement for, let's say, new products, new chips, new applications, I would say that has been growing slightly over the past quarter. The designing of new chips continues strongly on our exchange platform to remain -- to obviously be competitive from a capacity as well as cost perspective. And we have a -- in the qualification process with several customers, which this qualification process lasts quite long -- quite some time. And we believe we can consider that, considering the level of interaction, the intensity of interaction. We can consider those basically design wins. We don't believe that after 12, 18 months of interaction, customers will have the ability to go somewhere else other than us with this new engagement. So we think it's going to be a very good opportunity for future growth of our platform.

Richard Cutts Shannon - Craig-Hallum Capital Group LLC, Research Division - Senior Research Analyst

Okay. That's helpful. One last quick question for me, a topic of Huawei is of interest here. Obviously, given the news of recent days here. And while, Chuck, you've been very clear last -- well, I think for a long time that you don't have any 10% customers. I wonder if you could give us a sense of how big Huawei is. I think people are trying to get a sense of that, both standalone and possibly in the combination with Finisar. If you can help us out there, that would be great.

Mary Jane Raymond - II-VI Incorporated - CFO, Treasurer & Assistant Secretary

Well, I think the most that we're going to say about this is that we have no 10% customers. We consider all of our customers important. We continue to serve them and I -- obviously, people are entitled to the presumption of innocence. And I think we will obviously abide by any guidelines that are given. But generally speaking, Huawei, along with other key customers that we have, are all important to us, but we have no 10% customers.

Giovanni Barbarossa - II-VI Incorporated - CTO & President of Laser Solutions Segment

And this is Giovanni. Just -- we are -- we sell components or modules to every single OEM out there. The world will need optical communication gears. So whether or not -- what will happen to Huawei is kind of independent, in my opinion, from the overall market demand. They may lose share, they may gain share, someone else will lose share, will gain share. We'll sell components to everybody.
Client Id: 77

Mary Jane Raymond - II-VI Incorporated - CFO, Treasurer & Assistant Secretary
I think we have time to do one more. Go ahead.

Operator
All right. Our final question will come from Tim Savageaux of Northland Capital.

Timothy Paul Savageaux - Northland Capital Markets, Research Division - MD & Senior Research Analyst
A question following up on the Photonics and Optical Communications area. I'm wondering if you could try and -- I mean you mentioned China ROADM was a big driver. I wonder if you could characterize the Optical Communications business kind of China and ex China, if you will. How predominant was China as a growth driver in the quarter? I mean you had orders in Photonics up double digit sequentially over 50% year-over-year. Were there other contributors kind of ex China, either in ROADMs or elsewhere in terms of the optical telecom strength? And as a follow-up to that, can you characterize what you're seeing in terms of China demand now relative to some of the peaks we saw in 2016?

Vincent D. Mattera - II-VI Incorporated - President, CEO & Director
Okay. I clarified in my comments that our ROADM -- the ROADM demand on us, it grew substantially. It was the strongest growth that we've seen and it came from customers in both the U.S. and in Europe and in China. So it's a broad-based deployment. But what we are seeing, I think, was the first quarter that we saw the China ROADM deployments pick up to a level that we had not seen before. So that's probably the best I can say, Tim, because we're not going to be able to tell you how much of the revenue came from here and there. But the -- clearly, the momentum around these deployments is increasing, and we are a key supplier at the component level and at the subsystem level. And now that we have the addition even of the Wavelength Selective -- low-port count wavelength selective switch capability, we are in discussions now about the road map as well. So I think we're going to continue to see this. I don't think it was just a 1 quarter effect. It feels like it's going to continue.

Timothy Paul Savageaux - Northland Capital Markets, Research Division - MD & Senior Research Analyst
Great. If I could follow up quickly. I think you mentioned kind of a bifurcation in trends in optical within the data center and outside the data center in your data center interconnect. Is that the case? And would you expect that to continue?

Mary Jane Raymond - II-VI Incorporated - CFO, Treasurer & Assistant Secretary
Tim, hang on a second. Please repeat the first part of your question. You said, I think you said...

Timothy Paul Savageaux - Northland Capital Markets, Research Division - MD & Senior Research Analyst
I talked about a bifurcation in trends between what's happening in optical within the data center versus the outside. And that is [20%] inside versus data center interconnect. Just want to make sure I heard that right and asking about that a little bit.

Vincent D. Mattera - II-VI Incorporated - President, CEO & Director
Okay. We've tried to explain how we segment and describe the market. So as it relates to the transport -- transponder, including the data center interconnect, we had a very, very strong increase in demand. And the basis of it is -- includes our flagship micro pump product, which is unmatched in size and has the leading share and gaining in the coherent market and is enabling the growth of this. These coherent transceivers basically drove
a substantial increase compared to the prior quarter and especially compared to the same quarter last year. On the intra-data center and including enterprise and client that we consider datacom, we did experience a slight tick down compared to the prior quarter. Not by much. Thank you. Thanks for your questions. Mary Jane?

Mary Jane Raymond - II-VI Incorporated - CFO, Treasurer & Assistant Secretary

So I think this ends our call today. We want to thank all of you for joining and also your excellent engagement with us this morning. We look forward to updating you on our results on the third fiscal quarter of FY '19 on the call that is now scheduled for Wednesday, May 2, 2019, at 9:00 in the morning. Thanks for joining us, and have a great day. See you soon.

Operator

Ladies and gentlemen, thank you for participating in today's conference. This does conclude the program, and you may all disconnect. Everyone, have a great day.