

POET Technologies Inc. (OTCQX: POETF; TSX Venture: PTK)

Q3 2018 Business and Technical Update Conference Call

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Executives

Suresh Venkatesan – CEO and President
Thomas Mika – EVP and CFO
Rich Zoccolillo – SVP, Strategic Marketing and Product Management
Brett Perry – IR

Analysts

William White - IBK Capital
Kevin Dede - H.C. Wainwright
MacMurry Whale – Cormark

Operator

Good day, ladies and gentlemen and welcome to the POET Technologies Conference Call. As a reminder, this conference call is being recorded.

I would now like to introduce your host for today's conference Mr. Brett Perry, Investor Relations for POET Technologies. Sir, you may begin.

Brett Perry

Thank you. I'm Brett Perry with POET Technologies, Investor Relations firm. I'm pleased to welcome you to POET Technologies third quarter 2018 business and technical update conference call.

After the market closed yesterday, Poet Technologies issued a press release announcing its third quarter 2018 financial results. The release is also available on the company's website at poet-technologies.com.

As previously mentioned, this call is being recorded for replay purposes, a link to that recording can be found on the Investor Relations page at POET Technologies website. Please note there are no dedicated slides associated with today's conference call.

Joining me on today's call is Dr. Suresh Venkatesan, CEO, Mr. Thomas Mika, POET Technologies Executive Vice President and Chief Financial Officer and Mr. Rich Zoccolillo, Senior Vice President, Strategic Marketing and Product Development.

Mr. Mika will give an overview of POET Technologies third quarter results. Rich Zoccolillo -- who was recently appointed as Senior Vice President -- will introduce himself to shareholders and Dr. Venkatesan will provide a business and technology outlook for 2019. We will have a question-and-answer session that will follow our prepared remarks.

Before we begin, I'd like to remind you to review POET Technologies Safe Harbor statement. On today's call management will make forward-looking statements. These forward-looking statements involve risks and uncertainties as well as assumptions and current expectations which could cause the company's actual results to differ materially from those anticipated in such forward-looking statements. You can identify forward-looking

statements by terminology such as may, well, should, expects, plans, anticipates, believes or estimates and by other similar expressions and the company assumes no obligation to update or revise any forward-looking statement, forward looking information or statements except as is required by law. More information about the risks that may impact the company's business are set forth in the risk factors section of the company's filings with SEDAR and the SEC.

Also, all financial numbers discussed today will be in U.S. dollars, and with the exception of revenue are on a non-GAAP basis unless specifically noted otherwise.

Now I would like to turn the call over to Dr. Suresh Venkatesan for opening remarks.

Suresh Venkatesan

Thank you, Brett. Good morning and welcome to POET Technologies business and technical update conference call. Our last opportunity to update shareholders in the public setting was at our Annual General Meeting on June 21st 2018. At that time, we were just a few months into our Optical Interposer development and had announced a product development partnership with Accelink in China and we had begun the transfer of our proprietary waveguide development work to SilTerra, our silicon manufacturing partner in Malaysia.

We had also announced a strategic partnership with Almae Technologies, a France-based manufacturer of advanced photonics products for the core development of transmit device solutions for the POET Optical Interposer platform.

Just under five months later on November 12, we announced our first orders for Optical Interposer base solutions with a total of 18 months from the announcement of our focus on differentiated Indium Phosphide solutions in Datacom and telecom and only 10 months from the announcement of the Optical Interposer.

Today, as a team, we want to outline the significant progress we've made towards executing on our strategic plan. First, Tom Mika, our CFO will review our financial results for the quarter announced last night, followed by a few comments from Rich Zoccolillo, who recently joined POET as Senior Vice President of Strategic Marketing and Product Management.

I will then provide highlights of the progress we have made since mid-year and review the key milestones we expect to achieve in 2019 and beyond.

Now I'll turn it over to Tom for the financial update.

Thomas Mika

Thanks, Suresh and welcome everybody. Good morning. Revenue from the third quarter of 2018 increased by 20% over the second quarter to US \$907,000 which is a 27% increase over the third quarter of 2017. This revenue increase was due to growing demand for DenseLight's photonic sensors for test and measurement applications and an increase in non-recurring engineering revenue.

Company gross margins for the third quarter 2018 were up by 80 basis points to 58.3% compared with 57.5% in the preceding quarter and 51.3% in the third quarter of 2017. Gross margin increases were largely a result of better absorption of overhead from higher sales. Net loss before taxes for the third quarter of 2018 was a negative US \$5 million or \$0.02 per share compared to a negative \$4.74 million, also \$0.02 per share in the second quarter of 2018 and \$3.7 million or \$0.01 per share in the prior year's third quarter.

On a non-GAAP basis, the cash loss for the company was a negative \$3.2 million for the third quarter compared to \$3 million in the prior quarter and \$2 million in the same quarter last year.

Cash loss as defined here excludes non-cash expenses of stock-based compensation, depreciation and amortization and a small non-cash impairment loss in the third quarter. Those amount to a combined \$1.8 million in Q3, \$1.7 in Q2 and \$1.6 in the third quarter of 2017. Our use of cash also included capital investment in plant, equipment and patents of \$1.6 million in the third quarter of 2018 compared to \$1.1 million in the second quarter, but only \$66,000 in third quarter 2017. Cumulatively, the company has invested \$3.7 million in CapEx since the beginning of the year. Predominantly for equipment related to its Optical Interposer production and to replace or augment the equipment set at DenseLight, our Singapore based Indium Phosphide fab.

Total operating expenses for Q3 rose \$1.5 million to approximately \$5.5 million compared to \$4.1 million in the prior quarter. The increase was primarily in research and development which increased by just over \$1 million. The increase in SG&A was about \$251,000, with the remainder resulting from an asset impairment loss.

In cash terms, total operating expenses rose by \$1.2 million quarter-to-quarter from \$2.3 million to approximately \$3.6 million from Q2 to Q3.

At the end of the third quarter 2018, the company had a backlog of open orders for delivery in the fourth quarter and subsequent quarters of \$903,614. I want to emphasize this backlog does not include the orders recently announced on November 12, 2018, a portion of which are also expected to be recognized during the fourth quarter of 2018.

It's now my pleasure to introduce Rich Zoccolillo, Senior Vice President for Strategic Marketing and Product Management. Rich?

Rich Zoccolillo

Thanks, Tom. Good morning everyone. I'd like to spend a couple of minutes introducing myself. I've been in the Optical industry for over 20 years. It has a broad range of positions in both systems companies such as Lucent Technologies and Infinera as well as optical components companies like Opnext and Oclaro.

I've held positions as General Manager and Business Unit President as well as operational roles most recently as a VP of Systems Manufacturing and New Product Introduction for Infinera. This type of cutting-edge operations will give me great perspective on developments in the industry.

During my tenure with Infinera, we rolled out new products to the telecom and data center markets including a market defining datacenter interconnect product which we ran the production for the hyperscale customer base. This experience has given me great insight into the point is vital in growing customer segment.

Prior to my role with Infinera, I was the Business Unit President for Opnext. In this role, I was for the product strategy, leading the product development and the manufacturing of the portfolio, essentially a company within a company. The portfolio includes some of the highest volume and most competitive products the company offered and supported the data center and enterprise markets as well as the wireless backhaul market for the global deployment of the 4G and LTE technology.

I also wanted to share why I joined the POET Technologies team. First and foremost, it's about the people. POET team is made up of the extremely talented optical engineers as well as an executive team from the semiconductor industry. This team has a strategy to take cutting-edge multi-chip semiconductor assembly technology and apply it to the optical market.

I was greatly intrigued by the concept of using known good optical components employing passive alignment, assembly techniques onto known good dielectric interposers and then verifying those assembly operations in a wafer level test. This strategy has the potential to really move the cost needle relative to traditional assembly processes.

In addition to the significant cost advantage, these wafer scale assembly and test processes will enable POET to scale production to address market needs. POET is well-positioned to address some of the highest volume markets in the optical industry with cost effective optical engines. These applications will include data center connectivity, next generation passive optical networks and also the fronthaul and backhaul transport requirements for the imminent 5G wireless market.

I look forward to working with the POET team to transform the industry's conventional assembly techniques and usher in a new era of growth and profitability.

I would now like to turn the call back to Suresh who will give us a detailed review of the company's progress over the past several months.

Suresh Venkatesan

Thanks, Rich. My comments will be segmented into sections for comprehension as we go through this update. Before we discuss the Optical Interposer platform, I would like to spend a few minutes on our Sensing business.

As you know, this business has been our primary source of revenue for the past two years since our acquisition of Denselight semiconductors in June of 2016. In the business, we continued to gain momentum in the third quarter growing our Sensing business revenue 27% year-over-year and we expect to continue with a similar growth trajectory in 2019.

New markets and Gas Sensing and the autonomous vehicles like drones are driving demand for our 16XX class of distributed feedback DFB lasers and our super luminescent light emitting diode, also called SLEDs and these will be key contributors to our growth in 2019.

We have continued to focus on expanding the reach of our products to a broad group of customers and diversifying our customer base. We're pleased with the progress we continue to make on this front. Our recent and anticipated growth is primarily centered in China and we have added a new distribution relationship with Wuhan HTX to sell and promote our products. Additionally, we have added new customers for both our edge emitting LEDs, also called ELEDs, and our narrow line width lasers.

Finally, by incorporating the packaging innovations developed for the Optical Interposer we expect that in mid-to-late 2019 we will be in a position to introduce an additional highly differentiated Sensing product line at lower cost and higher performance.

Now moving onto the Optical Interposer. I would first like to recap the benefits and merits of the Optical Interposer platform technology. The Optical Interposer platform consists of two parts. First, the silicon based Optical Interposer incorporating our passive dielectric waveguides. And second, the Interposer-compatible active indium phosphate devices like lasers, detectors, modulators, semiconductor optical amplifiers and gain chips. When combined on a single platform the Optical Interposer provides our customers the flexibility to integrate optical and electrical components into a single chip scale package.

We believe the Optical Interposer represents the first practical implementation of a Platonic chip Scale package. As with the microelectronics industry, integration drives down form factor, size, power consumption and most importantly, cost. POET's Optical Interposer technology has drawn interest from multiple Tier 1 customers for applications spanning from component-level integration to subassemblies to full integration of optics and control electronics for transceivers. We're also seeing high interest for future applications of our Optical Interposer to enable direct optical interconnect into ASICs.

Now I will talk a little bit about our recent orders. On November 12, 2018, POET made a landmark announcement that we had received our first orders for Optical Interposer-based solutions from leading global communications companies targeting data communications applications. These orders include both sale contracts and development contracts with a value in excess of US \$3 million to purchase current device prototypes, to develop and provide increasingly integrated optical engine components and to systematically address the specific customer integration requirements.

Cumulatively, these orders constitute the single largest order for products and services in the company's history. We expect to fulfill these orders beginning now through mid-2019. This is nothing short of a watershed moment for this company and one which has the potential to trigger a meaningful inflection point for growth. Equally important, these orders represent the first commercial validation of the Optical Interposer technology and its merits from leading global companies. Our ability to deliver disruptive cost reduction to our customers enabled by our innovative Optical Interposer platform was critical to winning these orders.

We believe that we're working with more highly strategic and influential customers than ever before, positioning us for growth and the realization of our strategic business objective. Over the course of the next six or so months, we will be working cooperatively with the customers to address the specific technical integration requirements that will enable our Optical Interposer solutions to be incorporated into the products being offered by these companies.

For example, the core integration of optics with electronic. In order to implement the capabilities, the Interposer has to be specifically designed to accommodate customer specific electronics such as Trans Impedance Amplifiers and laser drivers. Likewise, the waveguide filter designs need to be compatible with the product specific obstacle power budgets of the customer's end device.

The advantage of the POET Interposer platform is that such customization can be done with minimal incremental development. This allows us to leverage our Optical Interposer solutions by increasing the level of integration for our customers' existing or planned data communication products.

We have already aligned with our customers on their production volumes and pricing requirements, so that once we successfully demonstrate the platform capabilities and it is qualified, we expect to receive production volume orders for Optical Interposer-based components and subassemblies for inclusion in customers' products beginning in the second half of 2019.

A few words about the qualification process. All new devices or components in data and telecommunications must demonstrate adherence to both customer specifications and industry standards. Parts of the qualification process are done by both the supplier and by its individual customers. The time period over which device testing occurs varies, but often extends three to six months or longer depending on the device or the subassembly, the qualification test required and the particular customer.

We have estimated that the qualification of active devices or light producing or detecting subassemblies such as our lasers, modulators and detectors on the Interposer platform should average approximately six months. However, with any particular device, tests or customer the qualification period may be shorter or longer. Some testing continues even after devices are shipped, so that data on device reliability can be measured and potentially used as a selling point with other customers.

Fortunately, the qualification process often runs parallel to the customer's engineering activities to design-in the device and to work through changes that may be required for the manufacturing process, so that these devices can ultimately be incorporated into products quickly thereafter.

I will spend a little bit of time now on the market and our product roadmap. The data center market has had an explosion of Internet traffic and it has resulted in a rapid expansion of data centers around the globe and as required

generation-upon-generation of infrastructure components including servers, switchers and transceivers to continuously improve their ability to handle higher speeds and higher density of data.

100G capable transceivers began volume adoption in 2017 replacing prior 40G devices. In the United States, data center operators decided to adopt the standard which did not require the multiplexing of signals onto a single fiber, so-called PSM4, which stands for Parallel Single Mode 4 channel.

The existing markets for these first generation 100G devices are now saturated. Data center operators in China began adopting 100G transceivers this year, but have largely been demanding a transceiver protocol that can handle multiplexing. So, the industry is now at the beginning of the introduction of a second generation of 100G adoption based on this coarse wavelength division multiplexing, also called the CWDM standard.

Market adoption of the first, second and any subsequent generation of 100G transceivers is projected to continue through 2026. As a result, 100G represents the largest near-term market opportunity for transceiver manufacturers and, therefore, POET as well.

Starting in 2019 and likely continuing through 2020, many transceiver manufacturers will also begin designing their first generation of 400G transceivers, which are expected to be delivered in volume beginning sometime after 2020, entering a high growth phase in 2022 and beyond, eventually replacing 100G devices.

This is typically how speed transitions occur in the industry and there is an industry term for it called the “S Curve.” There is a period of design-in and adoption, a period of growth and, finally, the period of saturation and decline. The market for second generation 100G CWDM devices is just now beginning a period of sustained growth with a forecast to grow from 1 million units the year in 2017 to 9 million units per year in 2023. This period is typically characterized by intense competition, falling prices and declining margins.

The 400G market is still in an initial design-ins and an adoption phase, a phase where early movers lock in their architectures. This period is typically characterized by high margins and low volume prior to entering the main stream growth phase.

In 2019, POET will intersect the market for transceivers with optical engines on two vectors. One, the second generation 100G CWDM delivering a significant cost advantage to manufacturers who are already experiencing margin pressure; and two, the first generation of 400G DR4 and FR4 devices where we can be designed- in and provide the benefits of both lower cost and higher performance from the very outset.

The recent customer orders for products and services have resulted in an acceleration of our plan to develop lasers that will be incorporated in a full “transmit-and-receive optical engine” and to furthermore address the requirements of 400G implementations. As a result, from now through the first two quarters of 2019, we expect to devote a substantial amount of our development and operational resources to customers who want to design-in all or portions of the Optical Interposer for 400G applications.

We believe that this process will lead them to understand the substantial benefits that a full Optical Interposer implementation will provide. Moreover, there is no better way to introduce technology to market than with substantial financial and engineering support of the leading companies in these markets, since the Optical Interposer and laser platform are speed agnostic and a single solution supports the requirements for both 100G and 400G, and an acceleration of 400G is completely synergistic with the deployment of 100G and within our development and product roadmap.

Therefore, in addition to our immediate focus on securing follow-on business with our lead customers, POET’s strategic plan continues to include the expected release of our own optical engines for qualification during the year as previously announced, which would further expand our customer base and design wins. Another point to note is

that the total addressable market size for a complete transmit/receive solution is at least four times larger than that for a receive solution only. Therefore, acceleration of the laser development roadmap is critical to accessing the larger market sooner, particularly given the long qualification time for laser solutions in Datacom and telecom application.

A word on Silicon Photonics which is another competing integration platform for photonics integration. The Optical Interposer platform not only provides a versatile chip-scale assembly platform for photonics in general, but it is also compatible with more conventional silicon photonics solution. This has opened up a new opportunity for silicon photonics-compatible component-integrated waveguide solutions in addition to fully integrated optical engine solutions.

Our waveguide integrated active indium phosphide devices that has detectors or lasers which are a critical component of the Optical Interposer platform are also directly compatible with conventional silicon photonics technology. The vast majority of today's silicon photonic solutions do not integrate lasers at wafer scale. Relegated to a diet scale assembly, the true merits and cost advantages of wafer scale integration are lost.

POET's waveguide integrated active indium phosphide components that are developed as part of its Optical Interposer platform solutions provide a light source that can be integrated into silicon photonics devices, enabling cost advantages of wafer scale integration.

Moving onto our milestone and some operational updates. Relative to our roadmap published in July this year at the Annual General Meeting, we have achieved the following. We have successfully completed our internal qualification testing on our 100G Quad Pin device through 3000 hours. Additional qualification including the assembled the receive optical engine will incorporate an enhanced version of our 100G Quad Pin that we believe will be capable of achieving the performance requirements of the 400G market. This development is underway and is expected to be completed in Q1 2019 and represent one quarter of pull-in relative to our original plans.

We have accelerated our laser development timeline for 400G applications and as a consequence expect to have our interposer compatible laser platform ready for qualification in Q1 2019. This is again a one quarter pull-in of our laser development activities. We have maintained are schedule 100G transceiver optical engines and have accelerated our scheduled for 400G of transmit receive optical engine into 2019.

We have aligned our roadmap with Almae, our strategic partner in developing the high-speed modulator technology required for our transmit optical engines. We have successfully transferred the Optical Interposer technology to SilTerra. This includes installing and qualifying the consigned tools and to and also establishing the manufacturing process for the Optical Interposer.

We also continue to make progress innovating across our Interposers platform. We believe our platform, proprietary manufacturing process, and the vertical integration of compatible optical components are keys to our success in the market and we remain focused on building a solid foundation. To that end, we have initiated design activity on the Interposer platform to demonstrate proof of feasibility for the large and growing 10G passive optical networks for telecom. Expansion to PON and telecom remains a strategic priority for the company.

Operationally, in recent quarters, we have taken major steps to advance our development of Optical Interposer-based new products including through the purchase of equipment, improvement of facilities and strengthening of our engineering team with more highly qualified talent and larger staff. All these changes are reflected in our financial statements through additions to fixed assets and increased operating expenses. We may need additional capital equipment to enhance our development production capabilities such as an additional Epitaxial system that we have on order for increased labor production capacity. But we expect only marginal increases in operating expenses over the next three to four quarters.

Importantly, we're fully capable to address the needs of our new customers with our existing engineering staff and production facilities. So much of our NRE revenue will result in relatively high gross margins. The next few quarters will be devoted to the successful completion of funded development programs, the introduction of new devices into qualification cycles with customers resulting from the prototypes ordered and preparation for high production volumes in subsequent quarters.

Moving on to the business outlook. Apart from the orders we have for product developments with our industry leading customers from 400G solutions and offering up 100G CWDM transmit/receive optical engine could have the biggest impact on the company's data communications revenue once qualified and for two to three years thereafter because of the size of the market and the need for transceiver module suppliers to address their margin pressures.

The total addressable market for 100G CWDM transceivers is over 30 million units between 2020 and 2023 for data centers alone, representing a market potential of over \$4.5 billion in the same period. POET expects to have a 100G transmit/receive optical engine in qualification in early Q3 2019. Typical qualification periods for photonic devices and Datacom and Telecom applications range from six months to a year including design-in period with our customers.

Given the qualification period, POET believes that substantial growth through sale of 100G interposer base optical engines will occur in 2020. Despite the 2020 market entry, the disruptive cost and performance benefits of the Interposer remain and what will be an extremely competitive 100G market. We believe that POET's Optical Interposer-based transceivers solutions will continue to provide an architectural superiority over more conventionally assembled modules which will be saddled with higher fundamental cost structures.

We continue to be bullish about our ability to generate design wins in 2019 based on our current customer engagements and garner a share of the competitive market starting 2020 by delivering up to 100% increase in gross margins for our customers enabled by disruptive cost structure.

Specific to 2019, we expect the material increase in revenue to a range between approximately \$8 to \$10 million. This revenue level will be driven by a combination of the expectation of 27% growth on our \$4 million base of Sensing business, the recently secured orders for Optical Interposer, and upside potential for our additional interposer prototype orders.

We believe that a focused execution on our current customers' orders and priorities will unlock a very large business opportunity for POET thereafter, especially given the size, scale and stature of the customers we're working with.

In closing, we are extremely excited about the opportunities resulting from our recently announced orders from leading data and telecommunications equipment providers, as they represent customer engagements with the largest near-term and long-term growth potential.

I've said this before and I will repeat it again, this represents a watershed moment for the company and places the company at the inflection point between development and business growth. You build the business by winning with the winners. We are allied with winners in the communication industry and our products development represent a sizable addressable market value over the next four years. We could not be working with more highly strategic customers to drive growth and the realization of our business objective than we are today.

I will now turn this call back to the operator for any questions that you may have.

Question-and-Answer Session

Operator

Thank you. And our first question comes from Bill White with IBK Capital. Your line is now open.

William White

Thank you very much. Really appreciated the enthusiasm and the update are the most frequently asked question of us is this concern about how you're going to finance the overall growth and specifically the comments on equity financing. The worry is that you might be forced to finance at current prices which of course is not an attractive outcome in terms of the opportunity ahead over the next couple of years. Could you just comment on that concern?

Thomas Mika

Bill, this is Tom Mika. Thanks for your question. You know we've disclosed in the recently filed registration statement the basic outline of our revenue and expenses over the next 12 months and it is apparent that the company will need capital from some source. Usually, it's critical to strengthen our balance sheet in order to be viewed as a reliable partner and supplier to these large leading customers that we are working with. I do want to say that we have a number of funding options that could potentially minimize dilution to shareholders including as I said in the past those warrants that are outstanding which represent a very significant capital influx to the company should they be converted. We would look to those as our first non-dilutive kind of capital source but we're looking at others. And obviously as shareholders ourselves we're interested in minimizing dilution to our other shareholders.

William White

Thank you very much, Tom.

Thomas Mika

You're welcome, Bill. Thank you.

Operator

Thank you. And our next question comes from Kevin Dede with H.C. Wainwright. Your line is now open.

Kevin Dede

Good morning, Suresh, Tom and welcome Brett, glad you're aboard. Folks, first of all Suresh thanks very much for hosting this call and thanks for taking my question. I read through all of the opportunities that you have in front of you and the choices that you make in prioritizing them. And I mean I pick up on some of the timeline you offered so thanks for doing that. Would you mind kind of going back and maybe adding some detail on how you anticipate addressing your current agreement with Accelink in TX RX combo.

Suresh Venkatesan

Good morning Kevin. Thanks for your question. I think with regards to our first development partner that we announced Accelink obviously are interested in both the receive optical engine but more primarily in the transmit and receive optical engine. As you can imagine for customers to adopt our solution in an existing manufacturing line may require or qualify our solutions and they would prefer to minimize the number of times they have to qualify. So their preference would be to accelerate the transmit and receive that minimizes the number of times they have to requalify a new solution. That is inconsistent with our plan to accelerate our laser development activity so that we may be able to minimize qualification costs for our customers. In addition, we have been approached by both Accelink as well as other large companies in China to evaluate the applicability of our interposer platform to a 10G solution and we are in the process of providing them with proof of feasibility for that particular application which rival the data centers in terms of volumes and revenue. So, it is an equivalently large sized market that is of particular

interest in China as they expand their fiber to home and fiber antenna networks and upgraded networks from the current 2.5G to the 10G speed point.

Kevin Dede

Okay. Thanks Suresh, thanks for the extra detail. Can you – did you include local in your prepared remarks and I was wondering if you could elaborate on that and maybe offer some insight on exactly how many folks you're working with and what you see maybe as your most immediate group of customers. How large that might be and how large you see that customer base growing say to be in the next year?

Suresh Venkatesan

Kevin, I missed the first part of your question you came in pretty muffled over the phone. Can you just repeat the first part?

Kevin Dede

I apologize I apologize. I was hoping you could offer little more detail on what I thought you had mentioned in your prepared remarks as local, meaning made in California companies versus China. So can you talk a little bit more about your current customer base and how you see that customer base growing perhaps through the course of the next year?

Suresh Venkatesan

I think the remarks that I made were global not local so I think we are working with global companies which means not just China and but you know rest assured China represents our largest growth opportunity. The largest deployment of 100G CWDM transceivers is primarily in China and that deployment started in earnest in 2018 and is expected to grow beyond that. But we are working with global companies. And so, yeah, I mean the global company and I don't think we can elaborate on the numbers and who for obvious confidentiality reasons.

Kevin Dede

Okay. Fair enough. You also mentioned you expected OpEx to remain very stable I guess with incremental gains. Can you quantify that at all? Say I mean given the two-thirds were before the fourth quarter and what you would expect to see next year?

Suresh Venkatesan

Yeah. As you can imagine I think you know getting product design to develop while tested and qualified requires you know staff and engineering staff and capital and we've made those investments this year which has resulted in our ability to present meaningful data on not PowerPoint slides not promises but real data to customers that allows them to assess our capability and our solution and make commitments and investments in those and put some skin in the game. We've made that ramp this year ahead of revenue but we believe that that engineering resource is sufficient through 2019 to complete the development of the solutions we're talking about prior to high volume manufacturing. So we don't expect a substantial increase in operating expenses beyond this. Of course, transferring the technology into another factory in SilTerra also was a drawn on operating expenses this year. But that is a onetime expense associated with transferring technology from one side to another which is non-recurring. So from that perspective we expect to maintain the operation expenses at our current level more or less at our current level into 2019.

Kevin Dede

Last question for me before I hop back in the queue, Tom. Tom would you mind just commenting a little bit IFRS 15 and how it relates to ASC 606 and the contracts that you have with the -- underneath the current contract and how you intend to recognize revenue?

Thomas Mika

Yeah. We're moving towards actually rather than the requirement to show progress against a plan and milestones and to value those milestones independently based on market values. Most of our contracts currently are written as the delivery devices. And so with respect to those milestones we actually deliver devices that are valued at an arm's length kind of transaction so that we don't have many contracts. We worry about that are service oriented. They are primarily product oriented.

Kevin Dede

Okay. So I wrote bottom line on that is that you can weaponize revenue on the device. This is....

Thomas Mika

Correct.

Kevin Dede

Right. Okay.

Thomas Mika

That's correct.

Kevin Dede

Right. This is having to accrue the software development.

Thomas Mika

Correct.

Kevin Dede

Okay. Thank you very much gentlemen. Appreciate you taking my questions and the more then appreciate that you had this call.

Suresh Venkatesan

Thank you.

Operator

Thank you. Our next question comes from Mac Whale at Cormark. Your line is now open.

Mac Whale

Hi, good morning. When you look at the revenue talked about 2019, can you give us given the fact that it is coming of such a small base? Can you give us an idea of the sort of the exit rate? I'm not sure if we want to do it on a monthly basis or quarterly basis but leaving 2019?

Suresh Venkatesan

That's a good question. You know we have for the first time offered this kind of revenue guidance. Mac, I think you know that. So you know we expect course the latter quarters to involve some production orders and we expect it to increase over the year from quarter to quarter. But. You know I would prefer not to give that kind of guidance as to what our run rate is exiting 2019. Yes, because it largely depends on orders that we're going to receive in mid-2019.

Mac Whale

Okay. And it would be fair to say that that run rate is not you're not exiting 2019 on that sort of the maximum level of that run rate, it's not like what we have what we would see at the end of the 2019. We can think of like start analyzing that for 2020?

Suresh Venkatesan

No, no, no. Since we're in a year of transition and in a year of design-in qualifications in 2019 we're expecting production orders to begin mid-year. And those orders will be substantial -- should be substantially more than that the early prototype orders that we're seeing now. So we expect with that to see an acceleration in 2020 of a different magnitude than we're experiencing between 2018 2019.

Mac Whale

Okay. And then as you look into 2020, you talk about on the call a number of following products that follow up after that. So how does disqualification that those products meanings to do work on those products. How does your spend ramp in '19 versus what we saw 2018?

Thomas Mika

Suresh just answered that question which is that we really except for some very specialized capabilities on the engineering team and maybe a little bit more on the sales team. We don't see any really material increases in OpEx during that 2019. We've already increased from Q2 to Q3. And so I think it's going to be relatively stable through 2019. Now as we see opportunities to go into production on these devices. We have plenty of capacity we have you know operators we have vendors and foundries in place. So I don't think we're going to see any material increases in our OpEx until late 2018 or 2022.

Mac Whale

Okay. Now given I know in the industry the way it appears that the way these contacts like the bases on which you'll be selling is standard in the industry given the fact that you're really at the beginning of the ramp in a whole bunch of products that have been years in the development, whether there's any way or any willingness from those suppliers to sort of prefund some of the expenses like in recognition that you have a very unique product and you're not a normal provider in the sense that this is not product version number, 100, right you're at the very beginning, whether there's any condition that you could have -- or hope to get some form of prepayment or against the margin you'll make because usually typically you're going to structure that the pricing to reflect your investment over the years, but you just kind of can't do that without a big balance sheet. Is there any room for that?

Suresh Venkatesan

Let me take that Mac. I would answer that on the two vectors for 100G implementation, of course, customers already have their solutions locked in and what we're going to do is to replace an incumbent. So, the burden of proof is on us. And so we need to be able to demonstrate the performance capability. And they're already convinced about the disruptive cost structure so that the burden of proof is on us. On -- for 400G, it's a design-in activity and there is potential as we have recently demonstrated through our announcement for customers to put some investment upfront in our ability to both accelerate and demonstrate and get designed in.

Now, I think once qualified, of course, there is always potential to negotiate on working capital needs for ramp and so on and so forth, but at least through the contract that we currently announced, there are customers willing to put some skin in the game and some upfront investment to realize the potential benefits that we can offer them in their architectures.

Mac Whale

And are there any opportunities on some of the product lines where you just go to a different model, it's like a licensing test model where you could get maybe something upfront and give up -- you'd be giving up some longer term value, but at least upfront you get something that allows you to sort of deploy that capital into something you kind of need immediately. I'm wondering if there's any consideration of that or whether it just doesn't work in these particular verticals?

Suresh Venkatesan

I think those are opportunities that we would consider once we validate solutions in customers products that gives us the maximum value that we can extract out of potential licensing opportunities. And I think those would tend to be in potential non-compete areas or areas that are not imminently a strategic importance to our company.

Mac Whale

Great. Okay thanks guys.

Operator

Thank you. And we have a follow-up question from Kevin Dede

Kevin Dede

Hi. Thanks guys. So, Tom, could you be more specific on headcount. Where was your headcount at the end of 2017 and where do you expect it to be the end of this year?

Thomas Mika

I can answer this year more easily; we're at about a 100 people total. And I think we were probably around 70 at the end of 2017

Kevin Dede

Okay. And so based on what I've heard that's probably adding maybe a couple more in sales and then a couple more engineering for next year?

Thomas Mika

We would expect a potential growth in SG&A for sales and marketing as we get these solutions in front of more and more folks. From an engineering perspective, it's minimal. I mean I'm not going to say zero, but that is not a dramatic increase relative to where we are today.

Suresh Venkatesan

I think the nature of the talent changes in all that we will be looking for more people in the liability and the liability engineering and quality going forward as opposed to hardcore front-up architecture and development developments. So, the nature of the kinds of people that we need to ramp within the company changes as the maturity of the product development moves from development to qualification to sales.

Thomas Mika

Also Kevin one of the things that we've emphasized in prior releases is that we've had very significant turnover in our DenseLight fab and some of that was generated by us, some of that was generated by the people themselves. But we've been able to attract very, very, very talented engineering staff into the DenseLight operations. And I can tell you that the results are really amazing relative to where we were say a year or 18 months ago and where we were able to benefit by other companies or the larger companies need to lay off some very senior and very talented engineering and management from one or two other companies in the Southeast Asia area. So the talent really is extraordinary now.

Kevin Dede

Okay fair enough. So help me understand, given the constraint recesses, what's the genesis of the decision to continue to give them a DenseLight and Sensing market with the huge enterprise opportunity in front of you. Just help me understand why we think that effort is worth pursuing?

Suresh Venkatesan

Yes, I think the Sensing opportunity is -- I mean if it is a business unit we will continue to grow, but it's largely a promotion of our existing products to a larger customer base and we're winning especially in China on the strength of our product performance and quality versus what they have been otherwise using.

From an investment of resources, we allocate less than 10% of our total resources to actually the Sensing business and much of that is primarily manufacturing and sales. We said this before our strategic intent is to really attack that market after we have our differentiated assembly capability with the interposer that can be applied to Sensing and there are a lot of customers obviously interested in doing that. And so the Sensing optical engine as we've been calling it is something that is of interest to customers. The Sensing market is not an integrated market like it is for datacom and telecom, it's disaggregated, but it's a very large opportunity. And we also have relied on the customer relationships that we have with the Sensing business and product lines to open doors and some of the opportunities that we're talking about specifically in the Far East have materialized because we are current suppliers to some of these large companies.

Kevin Dede

Okay. The hope is that you can leverage the existing relationships to go with end market?

Suresh Venkatesan

Yes. It's more than leveraging existing relationships that leveraging the decade of high quality product shipments and being able to grow that business based on the strength of the quality of the product and its performance. So, I think

it's beyond just being there and having a relationship it's more about having a track record of delivery of high quality components.

Thomas Mika

And remember those components are manufactured in lab, so their lasers and detectors that don't play in manufacturing for a long time and those are components for the optical interpose.

Kevin Dede

Okay. Could you also maybe Suresh take a step back and just review the interpose in manufacturing process now that SilTerra is integrated in the past but I don't think it had the opportunity to review the process now that SilTerra is add manufacturing capability.

Suresh Venkatesan

Can you...

Kevin Dede

I know that's kind of open-ended pose is the combination of products that comes from DenseLight and processing at SilTerra. So I was hoping if you could just run through the end to end process now that you're close to delivering volume

Suresh Venkatesan

I mean you know I think if I were to just building block a typical you know manufacturing flow. Like I said the platform or the interposer platform solutions requires two items: it requires the base interposer or the silicon wafer that we manufacture at SilTerra that incorporate our dielectric waveguide and waveguides can perform multiple functions that can either be a multiplexer or de-multiplexer or through waveguide splitters, mux vendors, what have you. So those wafers come out of SilTerra. So they have a manufacturing process that allows them to manufacture those wafers for us. Separately, we manufacture we active indium phosphide chips be the lasers, detectors, gain chips, semiconductor optical amplifiers in our factory at DenseLight and these components are specialized in that they are not your traditional laser detectors they incorporate waveguide technology that allows them to be compatible with within interposer and compatible with flip chip wafer scale assembly which is process for manufacturing those devices is different from I guess conventional optical devices that don't typically incorporate these features that enable the passive flip chip wafer scale assembly. When those two sets of devices are completed, we then work with our OSATs and our contract manufacturer that will then assemble them and test them and then singulate them into individual modules or subassemblies for sale. So it would be basically a flow of products from our fab at DenseLight a flow of products or wafers from a fab in SilTerra to our contract manufacturer who then assembles them into individual subassemblies for specific applications.

Kevin Dede

Okay. The merge of your active with the SilTerra generated dielectric happens at your fab is that correct?

Suresh Venkatesan

The marriage happens by design. The assembly happens at a contract manufacturer.

Kevin Dede

Okay, fair enough. Thank you for that distinction. I appreciated Suresh. Thanks again for taking my questions.

Operator

Thank you. And I'm showing no further questions in the queue at this time. I'd like to turn the call back over to Brett Perry for any closing remarks.

Brett Perry

Thank you for taking the time to join us on today's conference call. We sincerely appreciate your interest and continued support of POET Technologies and look forward to providing further updates on the company's continued progress in 2019. That concludes today's call. Operator, you may now disconnect.

Operator

Thank you. Ladies and gentlemen, thank you for your participation in today's conference. This concludes the program and you may all disconnect. Everyone have a great day.