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PRESENTATION

Operator

Good morning. My name is James, and I'll be your conference operator today. At this time, I'd like to welcome everyone to the Ciena Fiscal Q1 2019 Financial Results Call. (Operator Instructions)

I'd now like to turn the call over to the VP of Investor Relations, Gregg Lampf. Please go ahead.

Gregg M. Lampf - *Ciena Corporation - VP of IR*

Thank you, James. Good morning, and welcome to Ciena's 2019 Fiscal First Quarter Review. With me today is Gary Smith, President and CEO; and Jim Moylan, CFO. Scott McFeely, our Senior Vice President of Global Products and Services will join us for the Q&A portion of today's call.

In addition to this call and the press release, we have posted to the Investors Section of our website an accompanying investor presentation that reflects this discussion as well as certain highlighted items from this quarter.

Our comments today speak to our current view of the market environment, our fiscal first quarter financial performance and our outlook for the fiscal second quarter.

Before turning the call over to Gary, I'll remind you that during this call we'll be making certain forward-looking statements. Such statements, including our guidance and any commentary about our long-term financial targets, are based on current expectations, forecasts and assumptions regarding the company and its markets that include risks and uncertainties that could cause actual results to differ materially from the statements discussed today.

These statements should be viewed in the context of the risk factors detailed in our most recent 10-K filing and in our upcoming 10-Q filing.

Our 10-Q is required to be filed with the SEC by March 14, and we expect to file by that date.

Today's discussion also includes certain adjusted or non-GAAP measures of Ciena's results of operations. A detailed reconciliation of these non-GAAP measures to our GAAP results is included in today's press release.

Ciena assumes no obligation to update the information discussed in this conference call, whether as a result of new information, future events or otherwise.

With that, I'll turn the call over to Gary.

Gary B. Smith - *Ciena Corporation - CEO, President & Director*

Thanks, Gregg, and good morning, everyone. With the outstanding Q1 results we reported this morning, we are off to a strong start in our fiscal 2019.

Solid execution of our strategy, once again, enabled us to drive differentiated financial performance in the quarter, including meaningful year-over-year growth in both revenue and EPS.

Additionally, orders in the quarter were greater than revenue and consequently, we grew our backlog. This is a particularly strong performance in what is typically a seasonally challenged quarter.

We are clearly well positioned today with all of the key customer segments and geographies, specifically given our distinct portfolio that is closely aligned to current market trends.

First the webscale players. These are characterized by their rapid technology adoption cycles and deployment of best-in-class technology. They continue to have a significant influence on the industry structure, network architectures and customer consumption models. This key customer segment is already a meaningful driver of our growth and we expect that to continue.

In fact, our webscale business comprise 22% of Q1's total revenues, reflecting a year-over-year increase of 64%.

From a regional perspective, we're seeing very broad demand, and this is enabling us to continue growing our market share and expanding our footprint.

In Q1, we delivered double-digit revenue growth in nearly every single geographic region. In Asia-Pacific, India had another strong quarter, enhanced and supported by continued strength in Australia, Japan and Korea, as well as opportunities across a broadening set of applications.

Year-over-year, Asia-Pacific quarterly revenue was up 20% in Q1, including a significant contribution from Japan.

In North America, we were also up 20% year-on-year and we continue to see further opportunities to drive additional share gains across our diverse customer base, including as a result of new wins and increasing traction with our packet and software portfolios.

We're also seeing new market share capture opportunities in EMEA, where revenue was up more than 30% year-over-year, and CALA also appears to be poised with some growth after a few slower years.

We remain well positioned with our traditional service provider and cable operator customers, particularly, as content moves closer to the edge and spend shifts towards fiber densification initiatives like 5G and fiber deep, in the metro aggregation and access segments of their network.

We continue to expect that these initiatives will be drivers of our business over the medium to long term. And interest continues to grow for our software automation solutions across a range of customers as they look to scale and gain insights from their networks while spending down their cost curves.

In Q1, we secured a key win with a Tier 1 service provider in APAC for a deployment that will span our Blue Planet MDSO and inventory solutions. We also had new wins for our Blue Planet Route Optimization and Assurance solutions. And we have several existing Blue Planet service provider customers purchasing new elements of the Blue Planet portfolio during the quarter.

In addition to those positive market dynamics, the current competitive landscape is providing us the opportunity to take additional share.

In particular, 2 factors are influencing some changes in customer behaviors and their views of the broader vendor community landscape.

First, some of the smaller subscale equipment vendors are struggling from a financial standpoint and experiencing technology lags.

Second, the Chinese equipment vendors are being viewed as holding a disproportionate amount of market share in certain markets and by certain customers.

Whilst, these factors are not necessarily new, however, we are seeing network operators increasingly pursue what I would describe as a flight to quality. With vendors who offer leading innovation, global scale, financial strength and sustainability and a world-class customer engagement model. Clearly, Ciena is well positioned. In fact, we are in a highly enviable position.

With respect to our innovation agenda, we continue to deliver market-leading technology across our portfolio and our customer's confidence in our roadmap has never been stronger.

Not only do we still have the only 400-gig capable coherent technology in the market today, we recently detailed our WaveLogic 5 technology. This will deliver single-wavelength 800-gig systems later this year, which will be another Ciena first in the industry.

WaveLogic 5 will also provide for a range of footprint-optimized solutions, including 400ZR pluggables next year.

Our growth overall continues to be enabled by a diversified business model across products, customers and geographies. For example, more than 35% of our revenues in the first quarter came from nontelco customers. And specifically, our Waveserver platform comprised 18% of Q1's revenue. This platform continues to be a meaningful driver of our growth, including with non-webscale customers as evidenced by our recent news with British Telecom.

And of course, our global scale gives us the capability to invest in both R&D and the front-end of our business to capture additional market share and fuel future growth. These attributes give us a unique advantage over the competition and helped us to both gain 3% of global optical market share in 2018 and deliver a very strong set of results in our fiscal first quarter of 2019.

With that, I'll turn over to Jim for more details on our performance and guidance. Jim?

James E. Moylan - *Ciena Corporation - CFO & Senior VP of Finance*

Thanks, Gary. Good morning, everyone. Overall, we delivered strong performance in Q1 with revenue of $779 million. We had 3 10% customers in the quarter, one of which was a webscale customer.

In addition to our highest ever quarterly revenue in direct sales to our webscale customers, Q1 service provider revenue was up 16% year-over-year.

Our Q1 gross margin was 42.2%, in line with our outlook. Q1 adjusted operating expense was $254 million, also in line with our guidance.

With respect to profitability measures in the first quarter, we delivered adjusted operating margin of 9.6%, adjusted net income of $52.8 million and adjusted EPS of $0.33 per share.

In addition, in Q1, our adjusted EBITDA was $96 million, and we used $14 million in cash for operations. We ended the quarter with approximately $788 million in cash and investments.

Finally, we are executing on our share repurchase plans. In the first quarter, we purchased approximately 600,000 shares for about $21 million, and we are on target to buy back approximately $150 million in share value by the end of our fiscal year.

Looking ahead, in fiscal second quarter 2019, we expect to deliver revenue in a range of $800 million to $830 million, adjusted gross margin in the 42% to 43% range and adjusted operating expense of between $255 million and $260 million.

With respect to the full fiscal year, given our strong first quarter results and our second quarter outlook, we now expect to achieve revenue at the high end of our annual revenue guidance of 6% to 8% for fiscal year '19.

In closing, we have the right strategy for this dynamic business, and we have proven our ability to execute. Our first quarter performance is yet another demonstration of this continued execution of our strategy to deliver the industry's leading innovation, while diversifying our business and leveraging our global scale.

We are taking full advantage of our strong industry position and today's positive industry dynamics to capture additional share, and to continue delivering differentiated financial performance in fiscal 2019 and in the years to come.

With that, James, we'll now take questions from the sell-side analysts.

QUESTIONS AND ANSWERS

Operator

(Operator Instructions) And your first question comes from the line of Paul Silverstein from Cowen.

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

Guys, if I could ask 2 questions, one of which is, obviously, revenue diversification's been an important theme for quite some time now. When you look at the strength in the business, what are you most excited about, Gary? As you look out over the next 12 months and longer term, if you could share it. And then from the other perspective, it doesn't sound like it's an issue, I trust you're going to tell us it's not, but obviously, 600-gig systems are now launching, off of vacation, I believe, [in EL]. Can you comment on what you're seeing in terms of market dynamics? Again, I trust you're going to tell us that there's no pause as it impacts your business with the 800-gig coming, but if you can share any insight that would be appreciated.

Gary B. Smith - *Ciena Corporation - CEO, President & Director*

Well, let me take the first part of that. I think what I'm most excited about is the broad base of demand. We've got to a very diversified customer base, and while certain segments can ebb and flow, we continue to take share and grow, and that's why we're so confident around our outlook for this year, which we've taken up, and also for the 3 years as well. And you can see that in the service provider strength this quarter, you can see it in the geographics perspective, EMEA had a very strong quarter, obviously, webscale. But, you know, webscale will probably moderate. You can't keep growing at 64% year-on-year, your growth, but we expect to have a very strong year in webscale. So it's just really, I would say, the breadth and depth of the overall demand. That's what we're most excited about from a business point of view. Scott, you want to talk about that?

Scott Alexander McFeely - *Ciena Corporation - SVP of Global Products & Services*

Yes. And Paul, in regards to the competitive environment, we have lived in a competitive segment of the industry for some time, as you know. Characterized by a set of customers that are extremely informed -- well-informed buyers. Lots of things go into their purchase decisions, but clearly technology leadership is one that we have led the way with, particularly around coherent optics. They make those decisions with full visibility of what's on the shelf today, but also all the competitor's roadmaps and their track record of delivering on them. And then as witnessed by our position with 400-gig over the last 15 months and our recent WaveLogic 5 announcements around 800-gig which we believe will lead, again, in the industry in terms of performance benchmarks, being available in our system by the end of this year. I think it's clear by the share gains that we have made over the last a little while that those dynamics are playing in our favor, 3 points of share gain in the optical space in a single year, it's quite phenomenal. And you can see by our guidance for 2019 and over the next 3 years that we're quite confident that we're going to continue to gain share in those -- with that competitive environment.

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

So Scott, just to be clear, you're not concerned, not hearing from any of your webscale customers that they're looking to move on to 600-gig and not wait for the 800-gig to come out in terms of how it impacts your revenue growth?

Scott Alexander McFeely - *Ciena Corporation - SVP of Global Products & Services*

No.

Operator

Your next question comes from the line of George Notter from Jefferies.

George Charles Notter - *Jefferies LLC, Research Division - MD & Equity Research Analyst*

I guess I wanted to maybe expand on that last question a bit. As I look at the WaveLogic 5 announcements, both the extreme and nano version, obviously, you've got different products that you'll deliver those WaveLogic DSPs with, certainly Waveserver and 6500. Can you give us any more precision on when the products become available? I know you're talking about by year-end, but does that mean Waveserver? Does that mean 6500? I mean, any more detail on specific product deliveries would be helpful.

Scott Alexander McFeely - *Ciena Corporation - SVP of Global Products & Services*

Yes. We will certainly, like we have with WaveLogic Ai, deliver the WaveLogic 5 family into a number of product sets, so Waveserver for sure. The 6500 family, both -- if you're familiar with it, both the S series and the T series, we'll be hosts for that technology as well. And as we look at the nano platforms, we start to see that rollout in 2020 into -- integrated into our packet portfolio and also available in pluggable form factors for different consumption models.

George Charles Notter - *Jefferies LLC, Research Division - MD & Equity Research Analyst*

Got it, okay. So then is it fair to say that Waveserver and 6500 versions of these products would then be available by the end of this year? Is that the right target?

Scott Alexander McFeely - *Ciena Corporation - SVP of Global Products & Services*

That's correct.

Operator

(Operator Instructions) Your next question comes from the line of Simon Leopold from Raymond James.

Simon Matthew Leopold - *Raymond James & Associates, Inc., Research Division - Research Analyst*

I wanted to see if you could maybe get into a little bit more color regarding which market verticals or market opportunities you see as driving the most growth in the coming year or the current year? I guess, now if I look back at calendar '18, it appears that the webscale group was a huge contributor as well as India. I'm just wondering how much that changes in calendar '19? Whether it's Tier 1s internationally, as just an example. If you could help us understand what are the drivers for the strong growth?

Gary B. Smith - *Ciena Corporation - CEO, President & Director*

Listen, I think to the point around, sort of, broad-based, I think from a geographic point of view, if we look at the sort of drivers of growth, yes, we'll see webscale, yes, we'll see submarine, yes, we'll see Data Center Interconnect, so those will continue to be growth drivers. If you look at it from a regional point of view, we actually expect to have a very good year in North America and strength across the board there. And certainly, in some of the Tier 1 service providers in North America very encouraged by that. EMEA, we're seeing, I think, a market that is basically under invested for the last few years. We're beginning to see an uptick in our new wins there. People like Deutsche Telekom, which we won last year, so getting increasingly encouraged by what I'm seeing in Europe. And then of course, Asia-Pacific is being led by India. But as we saw in Q1, Japan was very strong as well in terms of its demand. Australia we feel quite bullish about as well. So I think we've got a very broad base of growth drivers for the year, and that's why we're already guiding to the high end of our range. So I would say, just a broad-based geographic demand.

James E. Moylan - *Ciena Corporation - CFO & Senior VP of Finance*

It is broad-based, Simon. The other thing I would say is...

Simon Matthew Leopold - *Raymond James & Associates, Inc., Research Division - Research Analyst*

Just to clarify that Gary...

Gary B. Smith - *Ciena Corporation - CEO, President & Director*

Simon?

James E. Moylan - *Ciena Corporation - CFO & Senior VP of Finance*

I was going to say Simon that...

Simon Matthew Leopold - *Raymond James & Associates, Inc., Research Division - Research Analyst*

So I just wanted to clarify what you're saying is that it sounds like what's different is improvement in North America, EMEA led by Deutsche Telekom, Asia-Pac getting beyond India. Sorry, Jim for cutting you off, but I just wanted to...

Gary B. Smith - *Ciena Corporation - CEO, President & Director*

Yes. No. Simon, that's a good summary, yes.

Simon Matthew Leopold - *Raymond James & Associates, Inc., Research Division - Research Analyst*

Jim, go ahead.

James E. Moylan - *Ciena Corporation - CFO & Senior VP of Finance*

No, I was going to emphasize what you just said, Simon. North America is strong. And the big Tier 1 service providers in North America are going to be a nice driver for us, given old relationships and newer wins.

Operator

Your next question comes from the line of John Marchetti from Stifel.

John Warren Marchetti - *Stifel, Nicolaus & Company, Incorporated, Research Division - MD & Senior Analyst*

Gary, I was wondering if you could just go back for a second and maybe expand a little bit on some of your EMEA comments. I mean, obviously, you do have the new Deutsche Telekom win, but it sounds like beyond that you're starting to see a real sort of return to growth if you will or at least a return to spending by some of those customers there. And I was wondering if you could just may be spend a moment there and may be also talk a little bit if that's one of the areas, particularly with your comments about some of the Chinese OEMs and the market share that they had that you think you're starting to see that even out a little bit?

Gary B. Smith - *Ciena Corporation - CEO, President & Director*

Yes. I think, I' characterize, sort of, EMEA in my perspective as really having under invested in the last few years in infrastructure. And I think we're seeing a sort of general improvement in sentiment. We saw that little bit towards the end of last year and that's carried through. I also think you've got a dynamic there where we've got a number of wins, not just -- Deutsche Telekom is one we've talked about publicly. But we've had a number of wins that are coming to fruition now in terms of roll out during the course of the year. And I think you -- this is not a new dynamic, but I think you've seen a sort of perspective around a rebalancing, if you like, of the market shares in Europe, specifically, where you've got very, very high market share of the Chinese vendors. And I think this is just a normal sort of market balance to that. So you've got a number, I think, of positive dynamics happening in Europe. And we actually invested sort of in the downturn, if you will, over the last sort of 18 months in Europe as well.

John Warren Marchetti - *Stifel, Nicolaus & Company, Incorporated, Research Division - MD & Senior Analyst*

And may be just as a quick follow-up to that, Gary, I mean, given that they have under invested for a number of years. Is this sort of the start of something where may be this goes beyond '19 and can be a little bit more of a longer-term driver? Or is this maybe a little bit more of a catch up spend, if you will, to kind of get them back to level?

Gary B. Smith - *Ciena Corporation - CEO, President & Director*

I'm sort of hesitant around, sort of, catch up spend. But I -- listen, I do think this is sustainable and it's more than 2019 for sure. The plans that we're engaged with on a number of these carriers stretch way beyond that. And I think that gives us a lot of confidence in the sustainability of this. And I reiterate again, this is in addition to strength in North America. I think we feel very good about for the year and beyond. And also of course, Asia-Pacific, where India continues to be very strong, augmented by Japan and some other geographies now. So I think we have a very diversified and broad-based demand.

Operator

Your next question comes from the line of Rod Hall from Goldman Sachs.

Balaji Krishnamurthy - *Goldman Sachs Group Inc., Research Division - Associate*

This is Balaji on behalf of Rod. Maybe just on India, if I could ask you to size that a little bit for us. And then we saw that you made those 2 announcements with Bharti and Jio last week on 5G. Do you think those have the potential to continue driving growth in fiscal '19 or are those fiscal '20 opportunities? And then I have a quick follow up after that.

Gary B. Smith - *Ciena Corporation - CEO, President & Director*

Yes. I mean, we've seen very strong growth in India in the last couple of years. We saw actually -- we do see growth in India this year as well. Obviously, you'll moderate this, sort of, rate of growth that we've seen, and that's to be expected as the -- as it gets bigger. But I think in year-on-year in India, to give you a perspective in Q1, we were up 20% year-on-year. So we're still seeing very healthy growth in India. I think the 5G roll out is in front of us. I think it -- we'll see some of that in '19, but that will stretch into '20 and beyond. So we're seeing very solid dynamics in India, and we have a very broad base of customers there as well, including the Department of Defense.

Balaji Krishnamurthy - *Goldman Sachs Group Inc., Research Division - Associate*

Got it. And just to quickly follow on gross margins. It did come down a little bit year-over-year despite 20% revenue growth. What are the puts and takes there, maybe?

James E. Moylan - *Ciena Corporation - CFO & Senior VP of Finance*

There are always lot of variables in our gross margin. Lots of things move in and out. And it's a little difficult to call the direction of margin from 1 quarter to the next. One thing I would say is that we have said and we reiterate that we believe we're a 42% to 43% gross margin company. This year, as we are in the early deployment stage of a lot of wins. We've said that our strategy is to get market share, that certainly proved out. We gained 3 points of market share last year, I think we'll gain some share this year as well. But I would say this, we do think that gross margin is going to improve over time. I think directionally it'll be up in 2020 as compared to 2019, that's my feeling today. And the other thing I'd reiterate is that we are targeting a 15% operating margin in fiscal 2020, although that will come mainly by way of higher revenue growth and a very disciplined approach to OpEx management. Not necessarily getting to a mid-40s gross margin range next year.

Operator

Your next question comes from the line of Tejas Venkatesh from UBS.

Thejeswi Banavathi Venkatesh - *UBS Investment Bank, Research Division - Associate Director and Analyst*

I had 2 questions on OpEx that have come up before. One on sort of the timing of WaveLogic 5. When I look at the prior iterations, WaveLogic Ai and so forth, I think it's taken you more than a year to get to meaningful revenue. Do you expect sort of a similar trajectory here? Or is there something different going on that would sort of compress the trial cycle and so forth?

Scott Alexander McFeely - *Ciena Corporation - SVP of Global Products & Services*

So WaveLogic 5 actually had a very substantial early ramp and continues to ramp -- sorry, WaveLogic Ai had a very aggressive ramp early on. If you remember, we introduced that about 18 -- almost 18 months ago now. We expect the same aggressive ramp on WaveLogic 5. In fact, if I look and I go back all the way to WaveLogic 1, the ramp on a per modem basis, what we call them, has been more aggressive each successive generation, and I expect that to continue with WaveLogic 5.

Thejeswi Banavathi Venkatesh - *UBS Investment Bank, Research Division - Associate Director and Analyst*

And you sort of touched on the Tier 1 spending in North America being strong through the rest of this year. I was curious if you could sort of double-click on that. AT&T was particularly weak last year, do see them coming back? And what's driving the growth?

Gary B. Smith - *Ciena Corporation - CEO, President & Director*

We expect AT&T to be up year-on-year, expect Verizon to be up year-on-year and of course, expect CenturyLink to be up year-on-year as well. And there's a very broad driver of those growths. With a number of them, we have multiple different rollouts characterized as long haul, core networks and specifically around, sort of, converged metro in all of these accounts.

Operator

Your next question comes from the line of Jim Suva from Citi.

Joshua Michael Kehoe - *Citigroup Inc, Research Division - Senior Associate*

This is Josh Kehoe on for Jim. What do you make of one of your competitor's recent comments that the relationship with Verizon continues to expand? Have you seen any impact to your business and position with Verizon there?

Gary B. Smith - *Ciena Corporation - CEO, President & Director*

No. The -- well, quick answer to that question is, no. Verizon was up year-on-year we expect -- in the quarter. And we expect Verizon to be a good growth for us year-on-year. And we are -- basically, everybody knows the sort of structure of the relationship with Verizon across all of the various elements, so can't comment on competition. But Ciena is very confident in our relationship and the strength of our business in Verizon.

Joshua Michael Kehoe - *Citigroup Inc, Research Division - Senior Associate*

Great. And you're 3 10% or greater customers. One was a webscale. Was the other 2 your typical 10% customers?

Gary B. Smith - *Ciena Corporation - CEO, President & Director*

That would be a reasonable guess, yes.

Operator

Your next question comes from the line of Samik Chatterjee from JPMorgan.

Samik Chatterjee - *JP Morgan Chase & Co, Research Division - Analyst*

Just wanted to start off with the dynamics on the Packet Networking side. You guided to a strong outlook over the next 3-year time horizon for that. But we're seeing growth come in towards the lower end of that. But can you just help me understand what's kind of driving the confidence in terms of a stronger outlook for that as well as how should we think about timing in terms of the maturation there?

Scott Alexander McFeely - *Ciena Corporation - SVP of Global Products & Services*

Yes. So a couple of comments about, sort of, where our Packet Business has come from historically. And then where the -- where we see the growth coming from may give you some insights into why we're bullish about it going forward. So historically, we've had strength in wireless backhaul and strength in business services. As we look forward, particularly, in the dynamics and wireless backhaul, you see the fiber densification activities going on by the service providers. We see that becoming more and more of an Ethernet optimized with integrated optics. So starting to play to our strength. So we see substantial growth opportunities there. The same dynamic will pay out I think in the MSO space and fiber deep, a little bit different instantiation of the technology but essentially the same dynamic. So both of those opportunities are still very much in front of us. You saw some growth this quarter, sort of quarter -- year-over-year and quarter-over-quarter. But when we look at the 3-year horizon, and we're very confident about the dynamics that play into our strengths. The other one that is starting to show some positive momentum for us is the whole progression in the service provider infrastructure of their TDM infrastructure moving into Packet. And a number of our service providers are engaged with our portfolio. And particularly, the PTS platform that we launched last year starting to show some revenue. So those 3 dynamics really give us the confidence about our future packet growth.

Samik Chatterjee - *JP Morgan Chase & Co, Research Division - Analyst*

Got it. Can I just ask for a quick clarification on Blue Planet? We saw revenues kind of move to $15 million a quarter, roughly from the $10 million, $11 million that you had. Was all of that growth kind of organic? Or did you see any kind of contribution there from the acquisitions?

Gary B. Smith - *Ciena Corporation - CEO, President & Director*

It was both. And that was -- that's encompassed in our -- I think our guidance for the year is about $50 million, $60 million. We're obviously off to a good start for that out of the gate. Orders were strong as well and we see very positive pipeline and engagement around Blue Planet. So the elements of that coming together both inorganic and organic. We -- the integration has going extremely well, very encouraged by what we're seeing. And I think we'll be on target for the year.

Operator

Your next question comes from the line of Meta Marshall from Morgan Stanley.

Meta A. Marshall - *Morgan Stanley, Research Division - VP*

With the, sort of, kind of, broad base of webscale customers at this point, are there any trends there? As far as -- are they kind of focusing more on international build-outs or subsea or kind of prep for 400-gig, just any patterns that might exist there? And then may be particularly kind of with your 10% webscale customer, is there any kind of digestion, kind of period that may exist, kind of in fiscal year '19 that we should be aware of?

Gary B. Smith - *Ciena Corporation - CEO, President & Director*

Meta, I would say, as I sort of think about your question now we're seeing a very broad-based demand. Particularly, to your point around international, we are seeing a lot of international expansion with the webscale, and that obviously is very helpful to us, in that we can bring a lot of value to them via the submarine elements that we have, we've got #1 market share there. Also a lot of the countries that they want to go to. We've got a very strong footprint and good relationships, so whether they take the fiber directly or depending on the regulatory environment, they have to go with a carrier. That relationship continues to broaden out with all of the -- most of the major webscale players. So we're seeing very broad set of applications for them. I would say, Scott, on the 400-gig?

Scott Alexander McFeely - *Ciena Corporation - SVP of Global Products & Services*

I think in general, first of all, they're not ubiquitous, so they're not all exactly the same. But the one thing that is in common with them is they all have tremendous bandwidth demand growth. And that instantiates itself in a couple of different application spaces. It's in their campus, large metro DCI, for some of them it's in national, core backbone networks. For many of them it's in submarine, and for almost all of them now it's, as Gary pointed out, them trying to put some more attention and focus internationally. And in a lot of those cases it's through a carrier. So in all those case the bandwidth growth, it comes down to cost per bit. So whether it's the state of the shelf today being 400-gig and the state of the shift tomorrow being 800-gig, that's what's really driving the conversations.

James E. Moylan - *Ciena Corporation - CFO & Senior VP of Finance*

And our business last year grew enormously with the webscale players. And we've said before that we expect that growth to moderate a bit this year. But we still see growth in that business this year. And it's just not going to be at the rate that we grew last year.

Operator

Your next question comes from the line of Jeff Kvaal with Nomura Instinet.

Jeffrey Thomas Kvaal - *Nomura Securities Co. Ltd., Research Division - MD of Communications*

Jim, I was hoping to start with a question on the gross margin line. It seems though you have a number of tailwinds going your way, right? Software in general seem to be on the right trajectory. Package, you discussed earlier. Some of these deals from last year ought to be maturing. So I guess, why wouldn't we see a little bit more of that progress pass through the gross margin over the course of this year and next?

James E. Moylan - *Ciena Corporation - CFO & Senior VP of Finance*

Well, I did say that over time we do expect our gross margins to head up. And we've said before, and I firmly believe, we're going to get back to mid-40s gross margin. But we've also signaled that's not going to happen this year, probably not next year, but we're on a trajectory to get back to that point. Everything you said is true, Jeff. All of those things are good for us, but we're still taking share, a lot of share, and we still have early stage deployment. So we think it's good for the long term, taking share is good. And if we experience a little bit of margin difficulty this year, it'll be good for you in the long term, I can assure you of that.

Jeffrey Thomas Kvaal - *Nomura Securities Co. Ltd., Research Division - MD of Communications*

Okay. And then perhaps, Gary, for you. There's been a decent amount of consolidation. Obviously, you're doing it organically but inorganic as well. What's your sense of where things are in the industry? Do you think that there is more consolidation that is likely to happen? I mean, obviously, you've talked about your own, doing it yourself organically, but on the inorganic side?

Gary B. Smith - *Ciena Corporation - CEO, President & Director*

Listen, I wouldn't rule that out. I mean I think what you've seen is sort of a combination of consolidation, it's taken a long time. It's been particularly painful, and you've also seen a number of competitors, frankly just atrophy. And I think you will continue to see that. I think if you look at the players that are taking market share and growing, it's us #1, Huawei #2 and Nokia #3. I would expect that dynamic to continue. And that's kind of the structure of the industry. And that's one, frankly, that is favorable to us, given our ability to focus, our ability to achieve scale and a diversified and balanced business. So I actually think, if we think about the state of the industry compared to 5 years ago or 10 years ago, it is in a much, much better place. And that's how we're able to put the financial performance that we're doing. So when Jim talks about taking share, we're talking about doing that in a very disciplined way, and a gross margin that's between 42% to 43%, it's best we can tell this year. I think that will improve next year as we get the combination of software. And we also get to a point where some of these larger builds get a little more mature, but it's clearly the right thing for us to do. When we can grow with these kinds of percentage on the top line and return the kind of EPS growth we're talking about and we're taking market share that says a lot around the strength of the business.

Operator

Your next question comes from the line of Tim Long with BMO Capital Markets.

Timothy Patrick Long - *BMO Capital Markets Equity Research - Senior Equity Analyst*

Yes, just first, Jim, maybe on the guidance. So just wanted to look into the full year guide here with a really strong first half, kind of implies flat or up a point or 2 in the second half. Could you talk a little bit about that? Is that just difficult compares, is there conservatism, is there something about the aging of the backlog?

Then just as a follow for Gary, particularly in North America and the markets where there are 5G, you've talked about what's driving their service provider strength there? Do you think this is 5G related? Or do you think that is potentially another leg that could keep those markets moving to 5G a little bit more quickly, strong for the next few years?

James E. Moylan - *Ciena Corporation - CFO & Senior VP of Finance*

Thanks, Tim. We started the year by saying we're going to grow 6% to 8%. And then we guided pretty strongly for Q1. And now we're saying that we're going to be at the top end of our guidance range for the year. So what I'd say is that all the signals that are coming out of us are positive for this year. And we've also always said, quarter-over-quarter comparisons can be misleading as far as trends. I think if you look over the 6-month, 12-month period, and look at the growth rate that we have enjoyed, and we expect to enjoy. I don't think you would be concerned about our growth rate. We feel really good about what we're going to do this year and the coming years.

Gary B. Smith - *Ciena Corporation - CEO, President & Director*

So in terms of the North American, what's driving that growth? I think a couple of things. One, I think you saw a little bit of a quiet year last year, if that's the right expression in terms of infrastructure spend overall. And in fact I think the market was probably flat to down, expected to be slightly up, but with our share continuing to grow. It's difficult to draw a bright line on what's 5G and what's the applications as they build in sort of more converged networks. But I would say, right now it's as much around just the dealing with the sheer bandwidth growth and trying to get fiber closer to the customer in its various forms. You know there's network densification in the cable space for fiber deep. It's all of those kinds of dynamics. And some of those resources are obviously going to be shared with 5G. Some of the carriers, it's apparent in their architecture that they're spending in a converged metro-type application with 5G in mind. And probably Verizon and AT&T and CenturyLink, come to mind around that. But I do think, as we start to get to the end of this year and beginning into '20, that you'll see more specific 5G build-outs. My own view on this is this always takes longer than everybody thinks. But I am actually of the view that a very positive set of dynamics in the service providers in North America for the next couple of years.

Operator

Your next question comes from the line of Catharine Trebnick from Dougherty.

Catharine Anne Trebnick - *Dougherty & Company LLC, Research Division - VP and Senior Research Analyst of Data & Internet Protocol Networking*

Gary, could you say that your pipeline for 5G is mostly Asia-Pac, followed by U.S., by then EMEA? Give some color on where you're releasing the most demand for 5G? And then the follow-up question is, you've done very well in Japan. Any particular application stronger in Japan? 400G subsea, other than others that you're seeing in that particular region for the strong growth?

Gary B. Smith - *Ciena Corporation - CEO, President & Director*

Catharine, let me answer the Japan one first and then back into the sort of 5G piece. I think we're seeing a number of dynamics in Japan. We've been there for a very long time. We've invested in Japan, and I think that's beginning to bear substantial fruits to us. We're a trusted partner there. I think you're seeing, on the broader industry structure stuff, some concern around their indigenous spenders, frankly, and the sustainability of them, back to the sort of flight to quality. And I think we're benefiting from that. You're also seeing across Japan a pretty substantial build over the next 18 months or so in terms of infrastructure. They are focused on 5G, they're also focused on things like the Olympics, and that tends to be a catalyst for infrastructure build. So you've got a combination of all of those elements, including some of the webscale players in Japan as well, and you saw our recent announcement there. So I'm very bullish around what I see in Japan moving forward.

Scott Alexander McFeely - *Ciena Corporation - SVP of Global Products & Services*

I think from an application space point of view, Catharine, we've been doing business subsea-wise and that touches Japan for a while. That really hasn't changed much. What has changed actually recently is the infrastructure build that Gary is talking about. And it tends to be metro-regional infrastructure, very much triggered by, I think, 2 things, the general bandwidth demands that everybody else in the world sees, but also trying to build more resilient networks. And there's a lot of emphasis on things like our resilient control play in the agile networks that we're building with some of those carriers there.

Gary B. Smith - *Ciena Corporation - CEO, President & Director*

Catharine, in terms of the 5G question, it is a little difficult for us to sort of discern exactly the application for some of that because it gets converged into their overall network spend. But I would sort of -- if you would -- to push me on it, I'd say Asia-Pacific first, North America second and then EMEA probably third.

Operator

Your next question comes from the line of Vijay Bhagavath from Deutsche Bank.

Vijay Krishna Bhagavath - *Deutsche Bank AG, Research Division - VP and Research Analyst*

My question is on the competition, and your thoughts on the differentiation of Ciena as we head into the rest of the year and next year. And in particular in cloud optical, a lot of competitive products coming out on the pluggable front. How would your Waveserver product continue to differentiate and complete? And then also, in just packet optical, metro optical, once again, many more competitive products coming up. So just give us your idea of the competitive landscape and the differentiation?

Scott Alexander McFeely - *Ciena Corporation - SVP of Global Products & Services*

Yes, so Vijay, I think it goes back to what we were talking about before and actually, what we announced with WaveLogic 5. We do believe we will continue to lead in terms of optical performance in the market with WaveLogic 5 and our 800-gig capability. Performance translates into a bunch of different dimensions. It's amount of capacity you can put on a fiber, it's cost per bit, it's reach, performance, et cetera. So across many, many applications. The other part of WaveLogic 5, of course, was for more footprint power optimized applications within nano, and that's where we will see pluggables come in to play. Pluggables, as you know, is not a new phenomena in the transport industry from a line side capability, we've dealt with them for generations. They have specific application, but they've never been, I'll say, the dominant deployment scenario. I think that will be true going forward as well. I think where they will play is going to be in the campus/metro DCI space. And of course, with our WaveLogic 5 Nano we will have an offer there in the 2020 time frame. I think the other place where that same technology base will play whether it instantiates itself as a pluggable or integrated into a system, the answer will probably be both. But as coherent pushes out into the access network which is a totally new space for coherent optics, as again, bandwidth increases the fiber densification programs of service providers start to take place. Coherent will make its way out there, and it's a new opportunity for all of us. I think what is different this time from previous generations of miniaturization of our pluggables is that it's coherent based. And I think it brings a new set of challenges and opportunities on the technology side. And I think what that will mean is the same players that may have lead in pluggables in the past won't necessarily be the same players that will lead going forward.

Operator

Your next question comes from the line of Paul Silverstein from Cowen.

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

Jim, can you comment on pricing. Has there been any change in the rate of price erosion over the last 90 days? Any visibility going forward? And I trust it's clear from your previous comments, but I'm going to ask anyway, with respect to operating leverage, how much -- historically if you went back years ago, you and everybody else, no one could get below 35% in terms of OpEx as a percentage of revenue. You've obviously proven the ability to do that quarter-after-quarter and to drive it lower. And that raises 2 thoughts, one, you've done it, so I guess it's possible you could do more, one the other hand you are in uncharted territory. So the question being, how much more can you drive from here and how do you get there if you could offer us any detail in terms of where that comes out of, R&D, SG&A, et cetera.

James E. Moylan - *Ciena Corporation - CFO & Senior VP of Finance*

I will take the leverage question, Paul. We are very confident in our ability to continue to drive OpEx down as a percent of revenue. And that provides an opportunity for us to leverage our OpEx, and increase the distribution of our R&D expense across a much higher revenue base. So we're very confident about our ability to continue to drive operating leverage out of this business. And we say we're going to get to 15% in 2020, and we've also said we don't think we're going to be back at the mid-40s gross margin next year. So, that implies a degree of operating leverage that will show improvement.

And on the pricing environment situation, really unchanged. I mean, yes, we've had some things happen. We've had consolidation. We've had discussions about the Chinese and whether they're going to be able to play in some markets. But these pricing trends have not changed significantly over the long term. You see different people come in and out as the price aggressors. But overall, it is a very competitive industry. And you have to show good technology and you have to keep taking costs out of our products -- out of your products, and we have done that successfully over a long period of time.

Scott Alexander McFeely - *Ciena Corporation - SVP of Global Products & Services*

And Paul, just as it relates to the R&D part of the OpEx, as Jim keeps reminding me, I'm one of the bigger consumers of it. So, may make a comment here. I think the fact that we've been disciplined around staying focused on who we are is really, really important and that allows us to put a lot of wood behind the arrows that we are -- that we have. We are not being outspent by anybody in the industry in the key areas. And that's witnessed by the fact that as we look at it, our WaveLogic 5 launch, that 2 parallel DSP and modem investments going on. So we're pretty comfortable at the scale that we are, scale is important, but at the scale we are that we have enough fuel to continue to lead in innovation.

Operator

And with that, I'd like to turn the call back over to Mr. Lampf for some concluding remarks.

Gregg M. Lampf - *Ciena Corporation - VP of IR*

Thank you, everyone. We appreciate your attention today. We're looking forward to following up with everyone during the day today and seeing people at OFC today and tomorrow. Thanks, again. We look forward to connecting with you.

Operator

This concludes today's conference. You may now disconnect.
