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<<Alex Henderson, Analyst, Needham & Company>>

My name is Alex Henderson. I'm the networking and security analyst at Needham. I've been following Ciena for just 25 years plus, something in that range. And it's a pleasure to have them here at the Needham Growth Conference. Today, we were going to do a fireside chat with David Rothenstein, who is the Senior VP of Strategy at Ciena and therefore, uniquely positioned to talk about the broader trends and demand and supply dynamics and things of that sort. So thank you for joining us.

<<David M. Rothenstein, Senior Vice President, General Counsel and Secretary>>

Thanks, Alex. Thanks for having me here.

<<Alex Henderson, Analyst, Needham & Company>>

So let's start off for people who don't know the company. You had a fabulous October quarter. You had a horrible July quarter. Can you talk about the last two or three years trajectory into that and where we are today looking at the rearview mirror just to make sure everybody is on the same page.

<<David M. Rothenstein, Senior Vice President, General Counsel and Secretary>>

Sure. Thank you for the blunt honesty, Alex. Good afternoon, everyone. Yes, so I mean, it's been a choppy several years for Ciena, obviously, and for everyone, but particularly going into the pandemic and then the past 12 to 18 months of significant supply chain constraints have brought about a lot of different changes in our industry and in our business. And the way I kind of think about it over the past three years, after a couple of years of hyper growth in 2018 and 2019, the past three years have been largely flat in terms of top line growth for the company. And that was for a lot of different reasons, but particularly with COVID in the first few years, you had network operators really constraining their spending across the board. And so we've been around $3.6 billion in the past three years.

In 2022, in particular, we started seeing some significant impact from supply chain challenges initially from semis broadly. And then in Q3 and Q4, Alex, what you're referring to is some [Audio Dip] with availability of certain integrated circuits, particularly power management ICs that really gated the manufacture and shipment of modems for us. And what you've seen is even though the vast majority of our supply chain is actually performing to what they have told us in terms of volume, in terms of timing, the volatility of a small number of component suppliers for these integrated circuits can have significantly unfavorable effects like it did in Q3 or consequently – correspondingly favorable effects in Q4.

What we are seeing kind of as we're into our Q1 now, where November to October fiscal year is continued movement from a supply chain standpoint. We are seeing more and more suppliers delivering what they said they're going to do, but still some degree of volatility amongst those. We have been able to start seeing the benefits of a lot of our mitigation efforts on the supply chain side in terms of qualifying alternative sources of supply, having some product engineering redesign efforts come through as well as improvements in production capacity. So all those mitigation efforts are bearing fruit and led us to result in Q4 significantly above our guidance.

<<Alex Henderson, Analyst, Needham & Company>>

So looking at the mechanics of that, a single de-commit late in the July quarter, uncertainty around the October quarter, your guide there almost by definition has to be fairly conservative because you're not sure what it's going to look like and then better than expected results. Is that a function of them having de-committed and coming back in and if I average those that's the rate of supply that you're getting? Or is it that they are in fact seeing better availability and more consistency, so you'll actually see sequential gradual improvement as we go forward quarter-to-quarter-to-quarter?

<<David M. Rothenstein, Senior Vice President, General Counsel and Secretary>>

I'd love to say we had complete line of sight in terms of all those different dynamics and in case how some of these suppliers do their own allocations, particularly among industries. I do think that, certainly in the middle part of last year, there was some allocation heavily toward under industries. And with some of the higher inflation and recessionary impacts, could that have an impact in terms of allocation going forward I think directionally perhaps, but I wouldn't take that to the bank.

I think overall, we can control what we can control, which is, as I said, really trying to continue to drive the mitigation efforts and offset whatever ongoing volatility, we'll continue to instantiate. What I do think is that overall, more broadly is from a supply chain standpoint, I think we are going to see continued improvement, but it's going to take time. There's not going to be a switch that gets flipped in one particular quarter or a month that says all of a sudden supply chain issues are behind us, and we can now just focus solely on demand. I think it's going to be a multiple quarter effort.

<<Alex Henderson, Analyst, Needham & Company>>

Well, probably a multiple year effort...

<<David M. Rothenstein, Senior Vice President, General Counsel and Secretary>>

Yes, potential multiple year. That's right.

<<Alex Henderson, Analyst, Needham & Company>>

Yes. So looking at the backlog, just to remind us, you entered a couple of years ago, your normal backlog is, what, four to eight weeks. Is that kind of...

<<David M. Rothenstein, Senior Vice President, General Counsel and Secretary>>

The normal product delivery times are – have been before – before all the supply chain issues were four to eight weeks for the majority of our portfolio.

<<Alex Henderson, Analyst, Needham & Company>>

And what is it currently?

<<David M. Rothenstein, Senior Vice President, General Counsel and Secretary>>

The average of the portfolio is around eight to nine months right now with variation.

<<Alex Henderson, Analyst, Needham & Company>>

So as supply improves, the duration of the orders should come in?

<<David M. Rothenstein, Senior Vice President, General Counsel and Secretary>>

Yes. As supply improves, I think a couple of things are going to happen. One, I think you're going to start seeing our extraordinarily high backlog start coming down, which, by the way, is a very good healthy thing. It's – we entered this fiscal year at $4.2 billion, which is a historical high for us, not just in terms of absolute numbers, but in terms of relative in terms of percentage of our demand plan for the year. It is almost the entirety of the demand plan for the year, which is highly unusual. And it's a function of the longer lead times and frankly the forward ordering by several of our larger customers. And the hope and expectation is that as we start to service that demand, backlog will come down and order growth, I wouldn't say it's going to slow down or decelerate. I think it would normalize to where it can and should be going forward.

<<Alex Henderson, Analyst, Needham & Company>>

So when portfolio managers hear the word massive backlog, biggest in the company's history, there's almost a Pavlovian response to that, which is, oh my God, I'm selling the stock.

<<David M. Rothenstein, Senior Vice President, General Counsel and Secretary>>

Yes.

<<Alex Henderson, Analyst, Needham & Company>>

That's probably been borne out of history. A lot of semiconductors and other component companies have seen significant corrections in their backlog is double or triple ordering have evaporated. That's not the case with Ciena. Historically, you've almost never seen backlog be

canceled. Can you talk about the stability and predictability of actually shipping what you have in backlog because it's a critical piece of the puzzle?

<<David M. Rothenstein, Senior Vice President, General Counsel and Secretary>>

Yes, it's a really good point. And I would caution anybody in terms of reading through the way semis are ordered and procured versus system solution sales, which is what Ciena does. The reality is our products, while the majority are commercial off the shelf, they are highly bespoke. We have over 11,000 SKUs in our product portfolio. And in the vast majority of cases, the solutions are specifically configured for a particular customer's network architecture or network application. And in many cases, it can be a multi-quarter effort on the part of the network operator to actually run an RFP or an RFQ and make a selection process and then do the network design as part of that.

So you take that on top of the fact that, two, these are incredibly expensive system solutions. These are not jelly bean commodity parts that can be easily replaced. And three, given the fact that during the pandemic, many of the operators did run their networks, particularly hot, you take all three things together with the fact that the vast majority of our order backlog is, frankly, contractually non-cancelable. But even if it weren't, I'm not sure it would change the dynamic. But you take all those things together and you say, you know what, there really – there really isn't where I think you're going, any material risk to degradation of the existing backlog.

<<Alex Henderson, Analyst, Needham & Company>>

So going back to the point of availability causing duration stretching that caused your backlog to go from $1 billion to $4.2 billion over the last two or three years, the worse is obviously going to happen at some point during the next 18 to 24 months. As that happens, how do we think about what happens when you get upside availability on components, then the duration by definition narrows. Therefore, the time they have to order ahead diminishes and therefore the orders declined. So there's kind of a multivariable equation there that's a little bit difficult to solve. But if we assume, say, 5% or 10% upside due to the revenues, just hypothetically, you'd still have orders that are reasonably healthy in a typical year that would allow you to bring that backlog down, maybe bring it down a couple of two, three months, but you'd still exit 2023 with a backlog significantly above normal. Is that mechanically reasonable?

<<David M. Rothenstein, Senior Vice President, General Counsel and Secretary>>

Yes, I think the thesis is absolutely correct, Alex. And frankly, your view in terms of having to thread the needle in terms of some of these forward expectations and projections is correct, right? I mean, I would keep pointing out though that all of this is frankly healthy, right? The backlog is inflated right now for the reasons that we know. Our inventory is inflated right now for the reasons that we know in terms of building up materials waiting for the golden screws to turn it into finished goods. All of that is and should normalize over the course of time and that's a good thing. Where I think you're going is, where is it going to end up, anybody's guess.

I think certainly for fiscal 2023, I don't see a return to status quo ante. I don't see backlog returning to where it was before supply chain challenges. I don't see inventory returning back to where it was before supply chain challenges. I think it will start normalizing. And you layer that against the fact that we like, frankly, any global multinational who's worth their salt, they're rethinking their supply chain operations going forward. And so instead of this 25-year journey toward just in time supply chains focused on operational efficiency and cost, we're seeing and looking at how we balance that with a greater degree of resiliency and redundancy in our supply chain, which will likely need some degree of higher inventory to take account of some of the risks that exist.

<<Alex Henderson, Analyst, Needham & Company>>

So embedded in all of this is a need to get parts that are often almost impossible to get and what parts became available are often at incredibly inflated prices. So how much costs are you absorbing currently as a result of the supply chain and logistics challenges that once it normalizes, we'll come back out of the margin structure?

<<David M. Rothenstein, Senior Vice President, General Counsel and Secretary>>

Yes. So what we said about margins is our – we've said for quite some time actually, our long-term target margin is in the mid-40s. We did see at the beginning of pandemic, several quarters of very high margins in the high 40s as a result purely of product mix. I mean the reality, Alex, any question about margin, the answer is product mix, one way or the other. And so we saw virtually no operators undertaking new builds. And as a result, a huge proportion of the sales were capacity adds, which carry higher margins.

That has now regressed a bit specifically with the supply chain challenges that you're talking about, what we've seen is – what we said generally with the semi shortage is about 400 bps of impact to the margin line, and that's a function of a couple of different things. One, it's – instead of the typical cost reductions we would get out of the supply chain, we've actually seen cost increases from some of our component suppliers as well as the fact that we've seen the need to pay to your point higher premium to brokers on the open market to procure alternative components as well as for a time, higher shipping and logistics cost. It just cost more to get product anywhere around the world, given the shipping lane challenges that we had over the past year or so.

So all of those things, as I said, about 400 basis points. And then on top of that, there was maybe an additional 100 or 200 bps of impact from the specific integrated circuit challenges that we've had. What we've said for 2023 is we've guided to a margin of around 42% to 44%, which is roughly flat year-over-year. We do expect and we are starting to see some of those supply chain challenges, as I said, improved, which is resulting slightly lower costs but they're still elevated. So what we said is around 200 to 300 basis points this year of margin impact because of these ongoing dynamics.

<<Alex Henderson, Analyst, Needham & Company>>

But theoretically, that could fall out over, say, 2024 and then into 2025 timeframe.

<<David M. Rothenstein, Senior Vice President, General Counsel and Secretary>>

We think it will. And as we've said, we expect in that timeframe to return to our target mid-40s margin.

<<Alex Henderson, Analyst, Needham & Company>>

Yes. And in addition to that, it sounds like there was a pent-up demand for footprint build, which obviously the chassis are much lower margin than the blades and transceivers. So to that extent, are we seeing a mix that stays that way over the next year? Or is it going to start to normalize on the mix as well as we exit 2023?

<<David M. Rothenstein, Senior Vice President, General Counsel and Secretary>>

I think there is a lot of different dynamics at play. We had both in Q4, what we're seeing at least at the beginning of Q1 with the increased availability of some of these integrated circuits, our ability to manufacture and ship more modems than we had certainly in the middle part of last year. But we're also starting to see, and it's one of the reasons why we guided to margin the way we did, a shift in product mix where we're starting to see more and more line systems and early builds and new deployments coming online, which is great because now we're starting to see some of these new wins we've had over the past few years come to fruition, which is a good thing. It's a healthy thing. And so the mix shift, again, trying to predict it quarter-over-quarter is super difficult exercise, but we do see that dynamic starting to normalize a bit better.

<<Alex Henderson, Analyst, Needham & Company>>

So based off of what you're saying, it sounds like if the supply – if the economy decelerates, most, I think, portfolio manager would argue that the S&P Industrials is going to earn 235, 240 in forecasts, but actually the estimates are all too high and they're going to have to come in the 200 to 210. That's the mindset that's out there. So the Street is bracing for estimate cuts. But if the economy decelerates, you would think you would get more parts, maybe even at a better price resulting in potential upside to your revenues, some upside to your gross margins, and you're leveraging your OpEx. So you could theoretically beat and raise because the economy slowed, logically speaking, that's a reasonable premise, yes?

<<David M. Rothenstein, Senior Vice President, General Counsel and Secretary>>

It's not a bad syllogism. I think a couple of things. Yes, we have postulated that with potentially the higher inflation rates and recessionary impacts, certain industries like, for example, consumer electronics, could that be an opportunity for some of the key integrated circuits to be allocated to other industries, including our own? I will tell you we're not privy to exactly how the component suppliers allocate among industries. So I can't predict exactly how that has happened and will happen. But there's certainly any more allocation that we would get would certainly go a long way toward accelerating a return to some degree of normalization on supply chain. The flip side,

of course, is trying to predict what impact current macro dynamics we'll have on any particular customers, CapEx decision-making is a different story.

<<Alex Henderson, Analyst, Needham & Company>>

But ironically, an industry that's known to be a cyclical industry, it actually looks like it's because of the supply chain problems over the last two years, it may actually be countercyclical this year…

<<David M. Rothenstein, Senior Vice President, General Counsel and Secretary>>

There is some…

<<Alex Henderson, Analyst, Needham & Company>>

…in there, right? So let's shift over to the demand side of the equation. That's obviously an area that people are concerned about. Why don't we start off with the cloud side of the business? There's been a fair amount of discussion about potentially some of the cloud companies having overstocked inventory. There has been some comments from some of the cloud companies that they're going to slow data center builds and maybe even cancel a few of them. So have you seen any of that? And do you think you will see any of that, not just in 2023, but as we go through 2023 and get the orders for 2024?

<<David M. Rothenstein, Senior Vice President, General Counsel and Secretary>>

Yes, well, like you, Alex, we're certainly watching very closely in terms of what our customers are doing and saying. And there has been a fair amount of media attention as of late in terms of things like mass layoffs and travel freezes and hiring freezes and talk about different spending changes. Honestly, at this point, we are not seeing any of that have any visible impact to us, not just now, but going forward. Given the size of our backlog, this really isn't issued to 2023 for us. But certainly in terms of what our sales account teams are saying, who are closest to our customers, at the end of the day, I think what's really important to remember, Alex, with any customer, it's not overall what they're doing or how much they're spending. It's where they're spending their money on…

<<Alex Henderson, Analyst, Needham & Company>>

Exactly.

<<David M. Rothenstein, Senior Vice President, General Counsel and Secretary>>

…where their investment efforts and intensities are going to. And as of right now, we see with the cloud providers, and they're not a homogeneous market segment, I know that, but I'll talk about them as one for now. We are not seeing any change in their demand profile at all. Because the reality is the amount of cloud applications and cloud services that they're going to need to host on their platforms continues to proliferate. They're going to continue to have to refresh their

data centers. Yes, they may slow or cancel a data center build in the future, but that's a leading indicator. It doesn't change their demand needs right now. And what we're seeing is they are continuing to invest in their cloud infrastructures. Their cloud revenues are up. I mean some of them, their ad revenues are down, but cloud is up.

<<Alex Henderson, Analyst, Needham & Company>>

Yes. So what was AWS's growth last quarter? Was it at 37%?

<<David M. Rothenstein, Senior Vice President, General Counsel and Secretary>>

It was.

<<Alex Henderson, Analyst, Needham & Company>>

And oh, by the way, their backlog went from $100 billion to $105 billion.

<<David M. Rothenstein, Senior Vice President, General Counsel and Secretary>>

Aren't too many companies who wouldn't take that?

<<Alex Henderson, Analyst, Needham & Company>>

I think that's the largest backlog in the history of anything. I mean I don't know if there's ever been a larger backlog. So what about on the service provider side? Obviously, people can make their decision on cloud. I think it stays reasonably healthy and continues to grow at least at the rate your guys are forecasting growth at. But service providers' spending is more constrained to start with and their business model is more constrained. Have you seen any change in their behavior? And how do you think – how should we think about what they're doing? Verizon, in particular, was mentioned as a company that's talked about cutting back on CapEx a little bit as we go forward. How what are we seeing in there?

<<David M. Rothenstein, Senior Vice President, General Counsel and Secretary>>

I think I did deliberately talk about cloud provider homogeneously service provider can't be spoken about in that way because Tier 1s in North America are fundamentally different from tiers in 2, 3s versus international service providers. So I think it's hard to generalize, Alex, in that regard. But if you're insisting that I do so, I think by and large it's the same answer. We are not seeing really any significant shift as of right now in CapEx spend. Could there be a push out of a route or a build here or there? Absolutely.

Could there be a redirect of a route to a competitor who's offering a slightly quicker delivery lead time? Sure. But by and large, the discussions that we're having and we rely heavily upon our sales force, who are as close to our customers as anybody and in fact, in many cases, know our customers' networks better than they do, are continuing to say and believe that the demand is there. The demand is robust. So just like the cloud providers have demands upon them, the

service providers are going to have to continue to invest to figure out a way to modernize and monetize their network assets at the edge to automate connectivity. That is not going to change.

And so you could have here or there, you mentioned Verizon in particular. It's a good example. Verizon, to quite a lot of fanfare took their CapEx down year-over-year, but it was actually inflated in 2022 because the spend on wireless spectrum. And in fact, their spend on cloud infrastructure is not going to change. So again, it's another example of where they're spending is what's really important to think about when you're thinking about Ciena.

<<Alex Henderson, Analyst, Needham & Company>>

One of the areas that people don't spend a lot of time thinking about is the subsea market which are three, four, five-year projects. You guys have had a lot of success in subsea. It's – what percentage of your business now what 15%, 20% of your…

<<David M. Rothenstein, Senior Vice President, General Counsel and Secretary>>

It's a bit lower than that. So, submarines standalone. And again, we only play in the SLTE, the Submarine Line Terminating Equipment is about high single digits.

<<Alex Henderson, Analyst, Needham & Company>>

High single digits?

<<David M. Rothenstein, Senior Vice President, General Counsel and Secretary>>

8% to 9%. But it is a really important proxy as well for the cloud providers because we talk about cloud providers in terms of direct data center interconnect, but cloud providers also come through in terms of carrier managed services with a carrier owns the fiber and provides a managed service for the cloud provider, which shows up as carrier revenue and subsea, right, where in many cases, the cloud providers are now being the primary dictators of where that submarine cables are going and where they're being upgraded. So we feel very good about subsea. We see a significant number of new build opportunities out there around Africa in particular ones that are interesting for us. So we're very excited about the subsea space.

<<Alex Henderson, Analyst, Needham & Company>>

The access side of the business is an area that you've spent a lot of time building capabilities in and expanding into somewhat of a new TAM, and that's growing much faster than the company's whole. Can you give us some sense of the size and growth rates of demand in that side, and what have you done to create that opportunity?

<<David M. Rothenstein, Senior Vice President, General Counsel and Secretary>>

Yeah, I mean, it's a good question. I mean, I think the way I think about – I think about routing and switching more specifically, you talked about access. It's a component of it. And we refer to

it more colloquially as next generation metro and edge, which is covering everything from fiber broadband access to cloud connectivity, software defined edge, and of course the convergence of IP and optical. All of that we see as far and away the fastest growing TAM expansion opportunity for Ciena over the next several years. Not that optical won't grow in terms of its TAM, not that software won't grow. But in terms of the CAGR, we see NextGen Metro and Edge significantly outperforming and outpacing the other areas. And as a result, for the past several years, we've been doing a couple of different things.

One, we've been undertaking a number of organic growth initiatives. And so you've seen us come out over the past few years with us at of purpose-built cell site routers for cross sell applications, which we hadn't had in previous cycles. You've seen us talk more heavily about the convergence of IP and optical, in looking at some form of purpose-built switch routers. You've seen us build out our broadband access solution now with the acquisitions of Tibit and Benu. So it's a combination of organic and inorganic things that we're doing to really solidify our position. And where if optical we're the hunted, in routing and switching, we're the hunter. We're looking to be the disruptor and the challenger against some very big, well-established players. We're not naive about the opportunity, but we see huge TAM expansion opportunities for us…

<<Alex Henderson, Analyst, Needham & Company>>

So, what size is that business at this point? And what kind of growth rate are you seeing in the orders of that business over the last year?

<<David M. Rothenstein, Senior Vice President, General Counsel and Secretary>>

Yeah, so routing and switching, so NextGen Metro and Edge, large routing and switchings about 10%, 11% of our business today. It grew year-over-year at a very high clip, almost 50%. That was in part because of the acquisition of Vyatta, the virtual routing software platform they acquired from AT&T. So that growth rate won't continue. But we do see the growth rate of routing and switching potentially outpacing optical over the next.

<<Alex Henderson, Analyst, Needham & Company>>

It's 20% plus type growth…

<<David M. Rothenstein, Senior Vice President, General Counsel and Secretary>>

Could be, I mean, maybe not that high, but certainly higher than corporate average.

<<Alex Henderson, Analyst, Needham & Company>>

Okay. One of the other areas that we need to touch on a little bit is the 400-gig ZR as a market. And is that a threat at all to cannibalization of your 400 gig product where you're the market leader. And then second your 400-gig ZR product line, and what kind of demand you're seeing

for it? And could you address whether there's any with cannibalization there or any impact on you that you're seeing?

<<David M. Rothenstein, Senior Vice President, General Counsel and Secretary>>

Yeah. So let me just, so 400 ZR, there's a lot of talk about that and has been for several years. I remember back in 2018, there was some, there was a thesis out there that it was going to cannibalize 50% of our system solutions, right? That was five years ago. It has not 400 ZR, I mean, there's a number of different use cases. The primary ones that people think about is data center interconnect where you've got high bandwidth capacity requirements with very specific switch to switch interconnect demands in terms of low power small space, low latency. And so what has that that's resulted in is a different form factor. So in WaveLogic 5, the current generation of our coherent WaveLogic chipset, we have two instantiations.

We have WaveLogic 5 Extreme, which is the purpose-built solution for our telcos. And 5 nano, which is the power and footprint optimized version for direct data center interconnect. It is, I think, and we think it's best in class in terms of power consumption, all the different other specifications in the market. It's still a relatively small piece of our business. And as we've said before, that's not surprising because we think it's a small piece of the overall market. It's a cloud provider play mostly. And that's going to take some time. In terms of your direct question about cannibalizing to the extent it does cannibalize any system sales going forward, that'll be more than offset by the route against switching and expansion opportunities that we have in that regard.

So we feel very good about our positioning on 400 ZR and then ZR Plus when you start changing ranges and reaches and things like that. But we feel very good about our positioning in that space. I should also point out that there are telco use cases for 400 ZR as an on-ramp and for universal aggregation. Again, that'll take much longer to instantiate in the market. It just always does.

<<Alex Henderson, Analyst, Needham & Company>>

So not a lot of discussion about the technology. It used to be, we hear about the 800 gig cycle and the 400 gig cycle. What's the situation in terms of the competitive landscape at 800 gig? Is there, other than Infinera and yourself, is there anybody else that's shipping any meaningful volume? Or are you guys still own that marketplace as the cutting edge leader?

<<David M. Rothenstein, Senior Vice President, General Counsel and Secretary>>

Well, I think we own the market. I mean, with it's hard to say with well over a 100 customers, over 50,000 port shipped. I mean, it's a significant market share of single wavelength, 800 gig. Infinera is with another solution. And for those operators who want a second source, they're a viable alternative. I do believe Huawei has a solution in market. Your qualification on meaningful volumes. I don't think they're there for a whole bunch of different reasons, but we don't see anybody else in this space.

<<Alex Henderson, Analyst, Needham & Company>>

What about Nokia and NEL, have they managed to ship anything at 800 gig? Or are they still 600 gig or above?

<<David M. Rothenstein, Senior Vice President, General Counsel and Secretary>>

We have not seen it.

<<Alex Henderson, Analyst, Needham & Company>>

All right. So essentially it's a two horse race and everybody needs to service the supplier, and you're the lead player. And it's not just an 800 gig product, right? It's flex coherent. So it ships at an 800 gig if you want it there, but it can be 400 gig, 200 gig, 100 gig, whatever.

<<David M. Rothenstein, Senior Vice President, General Counsel and Secretary>>

Yeah. I mean, look, the reality is client rate is a function of how far you can carry the signal without regenerating it. And not every operator needs a single wavelength 800 gig solution. Not every operator has the infrastructure to support it, and it's expensive to do so. So, yeah, I mean, I think your thesis is right. There's a lot of hero experiments out there even now with things like 1.2 terabits.

<<Alex Henderson, Analyst, Needham & Company>>

That was going to be my next question. Is there any reason to believe that 1.2 terabits will be any more successful than 600 gig, which was a total flop?

<<David M. Rothenstein, Senior Vice President, General Counsel and Secretary>>

No, I don't think so. I mean, if you want me to be direct.

<<Alex Henderson, Analyst, Needham & Company>>

I like direct.

<<David M. Rothenstein, Senior Vice President, General Counsel and Secretary>>

I think 600 gig, looking back, it was always an odd multiplier for the client rate. It really didn't provide a step function up across any number of different specifications of both 400 gig. And if I'm being candid, I think that there were a lot of promises made that were underdelivered in terms of its specifications and performance capabilities. Do I think 1.2 is going to be different? Obviously, now I'm looking into the future. I'm not so sure. I still think a lot of those dynamics play that I just said about 600 would apply to 1.2 terabits. It is free to put out a press release and put on a slide deck. I think if you look at Ciena's history over five and soon to be six generations of coherent optical technology, I think the proof is in the pudding. And the fact that frankly,

given, the current dynamics, our past two years in terms of order growth have been 29% and 26%. The reality, Alex, is our customers are voting with their wallets.

<<Alex Henderson, Analyst, Needham & Company>>

So what about Huawei? We don't hear a lot about Huawei these days. But it's pretty clear that they're challenged at a minimum. And there are some markets like in North America, like in EMEA and India that have been pushed out. You have – they had a 25% share in India, you have a 20% or so share, and that's a nice opportunity. So what's going on with Huawei, in the supply constrained environment, is that giving them some time to continue in the marketplace? And now we're going to start to see that the supply improves and lead times come down that you actually can penetrate that a 20% plus up footprint get done?

<<David M. Rothenstein, Senior Vice President, General Counsel and Secretary>>

I think people are scratching their heads about Huawei. There's certainly have been no shortage of ink that's been spilled about them and China more generally over the past several years in terms of the risks with respect to network security and so on and so forth. And people are scratching their heads as to why after all that Huawei still has 18% of the global optical share ex-China. And I think it's a function of a couple of things. One, things don't turn on a dime in our space. Again, these are not wireless space stations in our space that you can just swap out. These are in some cases six foot racks that sit in a central office somewhere that are interconnecting with a lot of other pieces of equipment.

Two, I think the reality is Huawei, even before the Trump administration started using legislation and regulations to it started impeding their progress from a network security standpoint. China had already basically told the world what they were going to do, which is to look to stand up their own domestic optical supply chain. They're not shy about telling you what they're going to do. They set and as a result, even before those regulations started going into place, they were buying up significant amounts of inventory across the board. And I think that has enabled them over the past several years to maintain the ability to ship equipment to customers.

I think also to your point, there are jurisdictions that have effectively excluded Huawei from new build, a new business. So there's been that loss of business they've been able to redirect elsewhere. There are also plenty of countries and operators around the world who don't have the same issues or concerns with Huawei or China Inc., that the U.S. and Western Europe and India and Japan have.

And so all those things I think Alex have allowed Huawei to continue to survive and not just survive. They're still doing $18 billion a year, whatever it is in revenue in this space. So they're certainly still around, but it's hit them pretty hard. And I think it is and continues to be a tailwind for Ciena. I don't think it's multi-billions of dollars tomorrow. I think it'll be gradual over the course of time, but we do see it as an opportunity that we have taken advantage of, but others are seeing it as well.

<<Alex Henderson, Analyst, Needham & Company>>

So let's stop there and see if there's any questions from people in the room.

Q&A

<Q>: Is the composition of the backlog similar to revenues by telco [Question Inaudible] on the hyperscaler or it's not going to come back or indexed in that backlog?

<Q – Alex Henderson>: Repeat the question, please.

<A – David M. Rothenstein>: Yeah, so the question was, is there a correlation between the composition of our order backlog with revenues? We don't typically disclose the composition of our backlog other than to say, so for example, with 4.2 entering the year, that's about 3.3 of hardware and software. So the remainder will be services. Some of – most of which will come in during the year, some of which is amortized over multiple years. We don't break out the composition of the hardware and software piece. What I would say and this is something we've said publicly, is that a lot of that backlog was allocated and will be allocated first in, first out, and the tier one North America service providers, plus the cloud providers were ones who got in very early as compared to some of the international service providers. So I do think that if you're going to look for a composition, it's maybe more from a customer segment standpoint, but we don't break it out by a – from a product standpoint.

<Q – Alex Henderson>: Another question? Okay. If there's no other questions from the field in the meantime, can you talk a little bit about the acquisition of the Tibit and Benu?

<A – David M. Rothenstein>: Yes. So we're super excited about this space. Why I spoke earlier about, one of the pieces of NextGen Metro and Edge being fiber, broadband access. I don't think you need me to tell you that there's a significant amount of interest in this space with huge amounts of government stimulus funding in the U.S. and not just in the U.S., but around the world as well in terms of bridging the digital divide. We do expect that, for example, in North America, more fiber to be laid in the next five years than in the past 15 years combined. And so, we look at our existing broadband access solution, which is robust in that we have purpose-built cell site routers, a disaggregated operating system. We have ONUs and ONTs. But there were pieces that we were partnering with, and so we acquired Tibit who we've been partnering with for several years.

<Q – Alex Henderson>: So what does Tibit do exactly?

<A – David M. Rothenstein>: Tibit is a micro plug that fits at the operating line terminal. So basically turns any carrier grade switch into an ethernet to PON device. So that plugs into the switch at the switching center at the central office.

<Q – Alex Henderson>: I think roughly the size of Tibit and their inability to grow is probably because they're too small for most of the service providers.

<A – David M. Rothenstein>: Oh, yeah. I think…

<Q – Alex Henderson>: Now you can…

<A – David M. Rothenstein>: I think, yeah, there's a scale play there for both Tibit and Benu quite frankly, where you've got operators who are preferring one neck to grab and a vertically integrated broadband access solution across the board. And so you take the two of those and we absolutely see a scale opportunity to really leverage the opportunity that is going to be in fiber broadband access over the next several years, and frankly, accelerating our time to market on the development roadmap as well.

<Q – Alex Henderson>: Giving you guys a little bit of time to think of another question, another one on the audience. So if I were to look at the OpEx side of the equation which is more of a managerial decision, then what we're able to see externally, what is the strategy for managing OpEx, managing hiring things of that sort, can you talk a little bit about how you're viewing your spend?

<A – David M. Rothenstein>: Sure. And I think it's under the heading of, again, control what you can control. We are obviously aware of the macro environment. We're being thoughtful about that as we always are. However, our strategic thesis is that the demand for bandwidth, which has grown and will continue to grow at 30% Trump's short-term macroeconomic dynamics.

And because of the strength and durability of those fundamental demand drivers, we're investing into the uncertainty, right? So we are continuing full steam ahead with our organic growth initiatives. You've seen, I'm not going to be shy about doing acquisitions, strategic partnerships. We're being careful and thoughtful and not spending where we don't have to, we're looking for efficiency with digital transformation like every global multinational. But we're continuing to invest in, and we just did it above market merit increase for our people most recently. So our view is that as things return over the next few years, not just the snap back from the past three years of pent-up demand. We absolutely expect to continue to grow share and grow our competitive advantage.

<Q – Alex Henderson>: So OpEx growth is probably dependent on the what degree you get parts. If you – I know you've guided to 17% growth, if you were to suddenly get better availability and ship more of that backlog and were to grow 25%, would you then put some investments in, or would you hold the OpEx trajectory as it was before you got that incremental benefit?

<A – David M. Rothenstein>: I think right now, and we've guided for $325 million a quarter, which is a meaningful increase in OpEx year-over-year for all the reasons that I mentioned. Would we be inclined to jump quickly in terms of substantially increasing that OpEx? Probably not, but obviously that's the decision we'd have to make depending upon the assumption you want to make about supply improvement.

<Q – Alex Henderson>: So it depends on what the orders come in at…

<A – David M. Rothenstein>: Absolutely.

<Q – Alex Henderson>: As well as the supply chain…

<A – David M. Rothenstein>: Absolutely.

<Q – Alex Henderson>: Okay. One of the interesting questions that I think has to be asked of anybody who's in the networking space optical spaces, what's the impact of artificial intelligence on the CapEx spend, the infrastructure intensity of the cloud players? When we look at the growth in GPUs, the capacities going up at two to 3x that of CPUs that network deployment requires massive data inputs to make those AI applications run. The boys over at Arista they are talking about 10 to 20x increase in infrastructure required to run some of these massive data center investments and actually meshing together 125 megawatt scaled out data centers in order to provide that capability. How does that impact Ciena? Is it, I mean, I know you haven't built it into your model and you shouldn't.

<A – David M. Rothenstein>: Thank you. Thank you for saying that.

<Q – Alex Henderson>: On the other side of the coin, isn't that going to drive the traffic growth in which ultimately drives your business.

<A – David M. Rothenstein>: Look, I understand the theory of the case and it's not a bad one, right? When you think about, you mentioned Arista, right? Arista is coming at it from the back end of the data center, right? We're at the front end, right? So they're thinking about the compute engine and the AI algorithms that enable the bigger flows and the greater bandwidth. And on its space, yes, I think that does call for and make a case for coherent optical switching technology in the data center. It's something we're absolutely looking at. We see an opportunity down the road.

<<Alex Henderson, Analyst, Needham & Company>>

Great. I think we need to end it there and thanks everybody for coming in. The bottom line here is I think this company can beat and raise in an environment where you're expecting estimates to go down, via it is only 12x 24 numbers. It's probably going to 15 to 18x, it's going to outperform, and it's my single best idea for 2023.

<<David M. Rothenstein, Senior Vice President, General Counsel and Secretary>>

Thank you, Alex. Appreciate it.

<<Alex Henderson, Analyst, Needham & Company>>

Thank you so much.