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CORPORATE PARTICIPANTS

William Atkins *Calix Inc - CFO*

CONFERENCE CALL PARTICIPANTS

Tim Quillin *Stephens Inc - Analyst*

QUESTIONS AND ANSWERS

Tim Quillin - *Stephens Inc - Analyst*

Good morning. I'm Tim Quillin, Communications Technology Analyst at Stephens. Thank you for joining us. This morning, we have Calix next up on the lineup. William Atkins will be presenting, CFO for the Company. And before we start, I just want to let you all know that I'll be walking through a series of questions, that this is an open forum. If you have a question, please feel free to chime in with your own.

But, William, to kick us off, can you just give us a one- or two-minute overview of what Calix does and what you're all about?

William Atkins - *Calix Inc - CFO*

Sure. First of all, thanks very much for inviting me to this conference. Very, very quickly, Calix is 100% focused on the broadband access space. So, from an investor's perspective, if you want to have a stake in a company that is purely exposed to broadband access, then we're an obvious target.

To the extent that you're focused on fiber rollouts in particular, while we don't break out our fiber versus copper revenue mix or units, it is worth noting that we're more heavily exposed towards fiber than some of our peers are.

We're a small cap company, relatively small company, revenues of roughly $400 million last year, which grew 5% over last year. And the equipment that we sell is basically the equipment that goes at either end of that piece of fiber that is pulled from the telecoms companies facilities, now known as a datacenter, used to be called a central office or the switching center, all the way through to the customer premises, which is where our subscriber-edge devices go.

So, that's essentially -- for a fiber sale, we sell both ends of that piece of glass, the equipment that lights it up back at the datacenter, and then the subscriber-edge or customer premises equipment that sits at the customer end.

And then in copper, we've announced our G.Fast products today, which we're very excited about, which are very much oriented towards multiple-tenant- or multiple-dwelling-type situations. But, other than that, we've got all the usual roster of VDSL2 and other copper-based technologies.

And with those technologies other than G.fast, we do not sell both ends of the pipe. We simply sell the equipment that sits back in the telecoms company's facilities. Again, that's other than G.fast, where we do sell both ends of the pipe. And that is broadly us in a nutshell.

Tim Quillin - *Stephens Inc - Analyst*

And, William, so, you've been at Calix for 15 months or -- .

William Atkins - *Calix Inc - CFO*

-- Yes -- .

Tim Quillin - *Stephens Inc - Analyst*

-- 16 months, whatever it is. And so, now, you've got a pretty good lay of the land. What's your view of the broadband access market opportunity? Is -- are you seeing a trail of breadcrumbs that would suggest an accelerated upgrade cycle, both here and internationally (inaudible) domestically, or is this a market that moves at a relatively measured pace, kind of always has, and so, as we see upgrades it's going to result in modest growth or -- ?

William Atkins - *Calix Inc - CFO*

-- Sure -- .

Tim Quillin - *Stephens Inc - Analyst*

-- Growth?

William Atkins - *Calix Inc - CFO*

Well, first of all, for us in the near term, it really is about the North American market, right, the domestic market, because international's only 12% of our revenues. So, the questions you're asking are really, for us at least, primarily about the domestic market.

And in that context, the unfortunate nature of this sector generally, not just us, but for our peers, is that there's not a lot of visibility out there in terms of our customer spending patterns. And so, it's a frustrating sector in that sense, from an investor standpoint, because you're talking to management teams who genuinely can really only see 90 days out.

Within that context, though, in standing back and looking more broadly away from our own numbers, if you will, and from what I'm hearing from our own people in the field, I'm thinking about the sector more broadly and more deeply, you've got the likes of Dycom, for example, who are out there sounding very bullish. You've got Corning, who are making bullish comments about selling their products to fiber rollouts essentially.

And that fits a natural pattern in our business. The rule of thumb that we use internally largely tracks some of the external data. We use an 80-20 rule. I've seen some studies that show an 85-15 rule, whereby for a typical fiber rollout, some 80% to 85% of the spend is spent on pulling the fiber, ducting it, pulling through aerial plant, putting the splitters on, etc., etc., buying the fiber itself; with that residual 15% to 20% being spent on our products or our peers' products.

So, essentially, you have to pull the fiber first. And then you light it up, and you light it up essentially with a Calix or one of our peers' OLTs back at the datacenter. And then you market it. And as you market that GPON network, you then sell the subscriber-edge devices.

So, both in terms of absolute percentage share of the spend, we're going to have, say, call it 15% to 20% of that aggregate spend. But, we're also going to have the last dollars of that spend. So, as I look at the fact that we're seeing constrained CapEx I think broadly from telcos in the first half of this year, but we're also seeing optimistic notes from people like Dycom that actually doesn't -- those two perspectives don't clash for us, if you know what I mean. That is a very sort of summarized way of describing it.

Tim Quillin - *Stephens Inc - Analyst*

Yes, and so -- but, so, the question is that there's always this desire to constrain spending by the service provider. So, they like -- I think in some ways like to think of themselves as utilities that are generating cash flows. So, how do they weight that against the competitive forces in the market that seem to be changing a little bit as well as the ever-increasing need for speed and need for bandwidth?

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William Atkins - *Calix Inc - CFO*

Sure. Well, I think, thinking more broadly, if you're a telecoms company that's got wireless as well as wireline assets, that's probably the first sort of broad set of decisions that you're going to be making. It's where you're going to spend your capital.

And you can argue that the cost of regulated spectrum keeps going up, as we saw in the most recent auction. Admittedly, there's probably some sort of Charlie Ergen influence on the way the pricing worked. But, nevertheless, I think we would agree that, generally, the price per megahertz pop of regulated spectrum has been increasing for these guys.

So, the capital expenditures therefore inherently required for wireless are probably going up. So, maybe it becomes a harder and harder calculation as time goes on.

I think that, for the telcos that don't have those wireless assets, they're purely focused on wireline; for them, it's an easier decision to invest in broadband access inherently, into fewer buckets, if you will.

But, in both instances, I think you can argue that, ultimately, wireless is going to go to an environment where unregulated spectrum will be where the majority of traffic will flow, whether it's voice or data. It's all going to be IP.

And so, our vision and the vision of people who sort of think deep thoughts as it were about this market is that the subscriber-edge device on a broadband access network is going to be very important for all telecoms companies, whether they have wireless or pure just wireline assets, simply because that subscriber-edge device is going to have an unregulated cloud of spectrum that people will roam onto.

And that's why, for example, you see the likes of Comcast rolling out subscriber-edge devices that have got two SSIDs on them, the public Wi-Fi net and then the private Wi-Fi net.

So, it's a longwinded explanation of saying that, in the long run, we're very confident that there's going to be increased spend on broadband access. And we think, in the short run, if you're a telco that's got some wireless assets, you might in the short term decide to allocate your capital more towards wireless. But, fundamentally, if you're a telecoms company and you're up against cable in any typical market, you are going to lose that battle if you don't have fiber or something close to fiber running to the home.

If we look at net broadband adds, 85% I think recently of broadband adds have been in the cable space relative to the telcos. So, to frame it very negatively, for a telecoms company, the decision on whether to invest in broadband access is really a decision about whether or not they're going to abandon their wireline network because, if you don't invest in broadband access as a telco, you're basically letting the cable companies eat your lunch.

Tim Quillin - *Stephens Inc - Analyst*

(inaudible - microphone inaccessible).

William Atkins - *Calix Inc - CFO*

Sure. And -- .

Tim Quillin - *Stephens Inc - Analyst*

-- (inaudible - microphone inaccessible).

William Atkins - *Calix Inc - CFO*

Yes. Well, I think the issue is down to local market competition, right? That's really what's going to drive the telco's view as to whether or not they want to invest. You've got the likes of Google Fiber and to the extent that that becomes real, to the extent that the broader vision that we're outlining in terms of the subscriber-edge device becoming another means of wireless access, to the extent that those two trends take place, whether it's local market driven or whether it's broader, then you should see an acceleration. But, sadly, because of the lack of visibility in the space, you can't call that curve on the hockey stick.

Tim Quillin - *Stephens Inc - Analyst*

(inaudible - microphone inaccessible).

William Atkins - *Calix Inc - CFO*

Yes, exactly.

Tim Quillin - *Stephens Inc - Analyst*

We're still waiting?

William Atkins - *Calix Inc - CFO*

Yes, although -- .

Tim Quillin - *Stephens Inc - Analyst*

-- (inaudible - microphone inaccessible).

William Atkins - *Calix Inc - CFO*

I wouldn't agree in theory, and I'll tell you why, because you're seeing the likes of Dycom making warm and fuzzy noises about this market. So, you're seeing real dollars being spent in this market, just not on us, which is normal if you think about the way that these rollouts happen.

So, whereas I think four -- three or four years ago, you wouldn't have heard Dycom making warm comments about rollouts, I think that is the difference. And also, three or four years ago, you wouldn't have seen Google Fiber sort of agitating, if you will, for more broadband rollouts. So, those are the two sort of concrete factors I would point to as being different.

Tim Quillin - *Stephens Inc - Analyst*

(inaudible - microphone inaccessible).

William Atkins - *Calix Inc - CFO*

Sadly, yes, that's exactly the question that I asked, too. You would not be surprised. And I don't get a solid answer because, is it rural? Is it suburban? Is it urban? Is it brownfield? Is it greenfield? I'm like: Guys, just give me -- is it nine months? Is it 18? And the only rule of thumb I hear, which is totally artistic and not scientific is down to: Gee, within a year of pulling fiber, they should be out marketing. I'm sorry. I wish I could give you more precise information, but it's a very nascent sector, and we don't have a broad pool of data to draw on.

Tim Quillin - *Stephens Inc - Analyst*

And then -- so, couple different questions on Google. One is the reaction to Google more specific, countermeasures when Google announces they're going into a city. The competitor in that city feels like they have to upgrade to put up a billboard that they also have gigabit-per-second service, as opposed to more proactive upgrades to kind of stem the general tide of what Google is hoping to accomplish.

And the second on Google is, do you have an opportunity to sell directly to them? And if not, why not?

William Atkins - *Calix Inc - CFO*

Well, we don't comment on people that we sell our equipment to unless they make comments, if you know what I mean. So, whether it's Google or anybody else, I can't answer the second half of that question.

But, on the first half, what you're talking about, basically, is success-based marketing essentially. We're seeing more and more operators take a look at that and see that as being indication of how to be more CapEx efficient. So, certainly, in terms of the noises that we're hearing from our customers, we're hearing them focus more and more on that. But, they're not doing it in a splashy way as, say, Google are.

Tim Quillin - *Stephens Inc - Analyst*

And how about -- what are you hearing from your customers in terms of the ROI on the fiber projects that they are building out right now, so to the point of your -- the pullthrough at the end for you is them selling a customer and you getting an order for an ONT. How well is that happening? And are your customers that are deploying fiber happy with their decision to do so?

William Atkins - *Calix Inc - CFO*

They are happy with their decision to do so. First of all, they see, at the front end, that their share of broadband adds dramatically changes in the market, right? So, that's the first thing that happens.

Secondly, they see churn fall, inevitably. And those two points are linked. They see operating expenses falling. And they see average revenues per user increasing. So, overall, it's a good investment for our customers. But, in terms of specific ROI numbers, they don't give them to us. So, we don't have those estimates.

Tim Quillin - *Stephens Inc - Analyst*

Right. Then -- so, as you said at the beginning, you're more closely associated with fiber build outs and really like to lead with that when you talk to customers. There's still some debate about what is the best technology and especially for different areas. So, you have the G.fast announcement this morning. How do you see the world shaping up, especially domestically, copper versus fiber? And is there still a significant opportunity for you on copper upgrades?

William Atkins - *Calix Inc - CFO*

I think, on copper, there are two ways that copper I think is an opportunity for us. One is, if you look at VDSL2, for example, where we've been selling a product now for two years -- we've got a VDSL2 label on it -- it's very good for areas where you've already got essentially a DSL copper plant, and you're simply experiencing more demand within an already built network, as it were, or already built loop. And so, what VDSL2 does, for example, is it allows you to deal with essentially denser fiber -- it's denser broadband users, if you will. So, that's an area of possible opportunity. It's one where we sell into.

For us, I would say that the larger opportunity is probably G.fast in the sense that G.fast is a great technology for handling very short copper runs. So, specifically, inbuilding is the best way to think about it. And I think that a lot of telcos have pulled fiber, have essentially pulled fiber past buildings that would otherwise be broadband deserts because the landlords of those buildings are not going to pull fiber to each of the individual units, residential or office, within those buildings.

And so, you have a number of cities in America where fiber's been pulled past the front of an apartment building or a multiple-unit office building where there's not fiber offered all the way to the tenants, to the individual tenants within those buildings.

And with G.fast, you can basically put one of our units in a LAN cupboard in the basement or on the outside of that building and then, using G.fast technology, essentially feed GPON-like speeds through to one of our GigaCenters that sits at the other end of that twisted pair. And it gives people an experience that is very, very close to a GPON experience. So, in terms of a new copper technology, that's one that we're very excited about.

Tim Quillin - *Stephens Inc - Analyst*

And if you just talk a little bit about some -- I think especially in the tier two space, what you're seeing from your customers. So, Frontier is buying some Verizon property. That might create an opportunity. Windstream has converted to a REIT. I think that frees up some CapEx, might create some opportunities.

Federal funding may have -- may be more of a distortion in the market than actual help in the market. But, we've rolled off a broadband stimulus. Cap funding starts to kick in. So, cap might be -- help with some of those tier two customers as well. But, maybe you can describe some of the opportunities you see there.

William Atkins - *Calix Inc - CFO*

Sure. Well, Windstream's conversion to a REIT. I think, generally, people would agree that CapEx tends to go up when you convert to a REIT structure. And so, that inherently must be good for us.

And then in terms of Frontier, there's no doubt that, when a Calix customer acquires more lines from somebody who's not a Calix customer, that's a good thing for us. We also think that Frontier will be faster in their sort of integration of those assets into their network than they were previously because they've done it once. They know how to do it. They're going to do it faster this time around.

And then in terms of CAF2 funding, it is I think probably going to impact the tier two space more than the tier threes. Certainly, as we look at our own customer base, that's what we see probably happening. But, even with tier ones, you see I think Century Link -- and I'm using round numbers -- are looking at, what, $0.5 billion potentially of CAF2 funding that they could qualify for. And I think, of that number, roughly -- and again, these are round numbers -- $160 million is estimated as being the incremental spend over the universal service fund spending that they would've had anyway.

So, you can argue that CAF2 is incremental. We are not going to do because of similar arguments to the point that somebody made earlier in this room about their hearing the same song earlier. We're not going to repeat the same song that we sang and we and our peers sang earlier about government funding being incremental because, with the broadband stimulus program, we were wrong. And so, we're not going to make that mistake again. I'd rather call it in the rearview mirror than try to call it looking out.

Tim Quillin - *Stephens Inc - Analyst*

Yes. And I won't ask you too many very near-term questions.

William Atkins - *Calix Inc - CFO*

Sure.

Tim Quillin - *Stephens Inc - Analyst*

But, I am curious how your customers' CapEx is shaping up, especially in terms of a second half versus first half perspective.

William Atkins - *Calix Inc - CFO*

Visibility sadly still isn't there for me to call the second half. So, I think, if I can answer it as sort of -- with a broad brush as we talk about the sector, where we see telcos spending less than anticipated in Q1 and into Q2, but we're also hearing a number of those telcos still holding to their guns in terms of aggregate CapEx numbers for the year.

So, that inherently must imply that their second half spending's going to be stronger. But, the nature of this business, sadly, is you don't get to see through to the second half, even now, even as we're in early June, the way that I would like to.

Tim Quillin - *Stephens Inc - Analyst*

Right. Is CapEx shaping up for the current quarter as you thought?

William Atkins - *Calix Inc - CFO*

Yes. Again, I'm not going to -- I guided earlier. And that's all I'm going to do is just say that I guided earlier. So, to the extent that I would change my guidance, I would do so, but I'm not.

Tim Quillin - *Stephens Inc - Analyst*

Yes. No, and I think that, to a certain extent, the slow start of the year was that Century Link set their CapEx relatively late in the quarter. And that would be one where, yes, if the CapEx is the same for the whole year, the tempo would seem to shift to the back half. Is that -- how big of a factor is that when you think about we should have a better third and fourth quarter than we had the first and second quarter?

William Atkins - *Calix Inc - CFO*

That inherently is a factor, right, because, just to take Century Link as an example, their aggregate CapEx they guided to I think was $3 billion -- .

Tim Quillin - *Stephens Inc - Analyst*

-- That's true -- .

William Atkins - *Calix Inc - CFO*

-- For the year. And in Q1, I think they were 8% down historic Q over Q, which I think was a surprise to most observers. And so, that therefore would imply that there must be an increase in spending in the second half.

Tim Quillin - *Stephens Inc - Analyst*

And you'd kind of suggested on the conference call that there -- you were starting to see the order flow improve. Is that -- how does that ramp up? Is there a kind of a predictable tempo to the ramp?

William Atkins - *Calix Inc - CFO*

Sadly not. I've gone back and done analyses of past years to see if I can discern either sequential Q-on-Q patterns or year-over-year patterns. And unfortunately, they don't exist. So, I can't call it.

Tim Quillin - *Stephens Inc - Analyst*

I think also, it backs the point that the trail of breadcrumbs that's leading to this upgrade cycle is not quite happening. Your revenue with Century Link last year was actually down a little bit in an environment where Century Link seems to be rolling out more fiber to the home. Can you just explain why you wouldn't see more growth associated with those fiber rollouts and what part of the spending with -- their spending with you might be going down?

William Atkins - *Calix Inc - CFO*

I understand. Well, yes, if you look back since 2011, I think their aggregate spending -- if you assume that their broadband access spending broadly defined is essentially the same as the numbers that we and ADTRAN disclose in our 10-Ks, and you just add those together, right?

And I think, in 2011, the combined spend on the two companies is around -- and again, these are round numbers, and they're based upon percentages. Everything's derived anyway. But, I think they're around $250 million back in 2011. And I think we're there at, like, $180 million for 2014.

So, we were pleased that we increased our market share in every one of those years. And in absolute terms, even though in each of those years the aggregate spend declined, up until last year, our absolute dollars increased. And then last year, we sort of finally caught the tide, if you will. And even though we pressed it above 50% share, our absolute dollars did fall.

I think that, there, what you're looking at possibly -- I don't know. But, I would say possibly is the same sort of pattern that I talked about earlier, namely where those $0.85 of every $1 are being spent on pulling the fiber and on buying the underlying glass, if you will, with the residual of $0.15 being spent on our equipment.

Some of these networks have been put in place for a while. And it's important to note that, as much of our spend is related to waiting for the build out of the network, it's also to wait for the marketing of the network, right, because, broadly, more dollars are going to be spent on subscriber-edge devices with us on a GPON rollout than back at the datacenter.

You put in place an optical line terminal. You've lit the network up. You then are going to sell those subscriber-edge devices to each of those homes that you pass. And so, you also have to market the network as well. So, there can be a lag there as well.

Tim Quillin - *Stephens Inc - Analyst*

Right. And I think you've been maybe reluctant, or is it that it's a complicated calculation to say what is the revenue potential per home pass and the revenue potential per home served? So, but, it should be relatively easy to think about, what's the OLT for lighting -- your revenue for an OLT for lighting up of the network and getting that revenue (inaudible) low level I'm assuming. And so, a lot of it would seem to be on the customer premise equipment, the ONT, as you have success.

And maybe it's just simple as what is the range of revenue from an ONT. What is the ASPs in that business? And then maybe we can do the calculations that way.

William Atkins - *Calix Inc - CFO*

I understand. I would say, first of all, there's a whole bunch of ways I can answer that. Let's talk about margins first. That's probably -- and then we can sort of pull back and talk about revenues.

Inherently, the original sale of the OLT will normally be at a lower margin than the follow-on sale of the line card that goes into that OLT. So, the expansion CapEx that the telecom company spends, once they've got the OLT installed, is going to be a higher margin sale for us.

This business broadly defined can be described as a razors/razor-blades business. So, as the line cards go in, our margins will go up on network expansion. And also, when we move into a new customer, then inherently, that OLT sale will be at a lower margin than a normal OLT sale because you're basically seeking to gain access to literal real estate inside somebody's facilities. And so, a new customer inherently initially has a lower margin than an existing customer.

And then finally, on the gross margin point, I'm talking about the subscriber-edge devices, a device like a GigaCenter, for example. That's a nice high-margin business for us generally. You haven't asked the question, but we're very comfortable talking about how we're looking to have gross margins in excess of 50%, date unspecified. And we continue to feel optimistic about that, even as we increase our sales of subscriber-edge devices.

But, then turning to your sort of more top-line question, namely the share of dollars spent between the subscriber-edge devices and the datacenter devices, a rule of thumb that is not verified -- very important that I state this -- is a rule of thumb that is used at least internally by us is it's roughly a 90-10 split in terms of dollars spent between subscriber-edge and the devices that are put in place at the telcos' datacenters, very roughly speaking.

Tim Quillin - *Stephens Inc - Analyst*

So, 90%.

William Atkins - *Calix Inc - CFO*

Again, that's a very rough -- whether it's -- the bottom line is -- exactly. That is a way I would be more comfortable describing it is it's certainly not a 51-49 split. It is -- the vast majority of dollars spent on our products will and do tend to get spent on the subscriber-edge devices over the devices that are put in the datacenter. But, that also -- remember, some of that involves expansion CapEx, which inherently does involve not only putting subscriber-edge devices in place, but also those line cards that go in to facilitate that expansion.

Tim Quillin - *Stephens Inc - Analyst*

Right.

Unidentified Audience Member

(inaudible - microphone inaccessible).

William Atkins - *Calix Inc - CFO*

It's pretty anecdotal because the carriers don't necessarily tell you, right? So, the way that you can do it is you can say, well, they built out in City X, and yet they aren't ordering as many line cards from us, for example. And you can go in and look at a carrier and determine what the fill rates are of line cards per optical line terminal. And that can give you a rough idea as to how dense, in a sense, they're getting that network and, therefore, how well they're marketing it. But, it's very anecdotal, unfortunately.

Unidentified Audience Member

(inaudible - microphone inaccessible).

William Atkins - *Calix Inc - CFO*

Well, broadly, I think you can -- other than saying TDS, you can basically say, if you look at our customer base, they're all pure wireline, right, essentially. Century Link don't have a wireless play. And the tier threes inherently don't, right?

Unidentified Audience Member

(inaudible - microphone inaccessible).

William Atkins - *Calix Inc - CFO*

Not currently. Not currently.

Tim Quillin - *Stephens Inc - Analyst*

Maybe that's a good opportunity to talk about tier one opportunities -- .

William Atkins - *Calix Inc - CFO*

-- Sure -- .

Tim Quillin - *Stephens Inc - Analyst*

-- Which take a while to develop, understood, get full customers to [sell] into, understood. But, are there concrete steps you can take and any realistic expectations to think that you can get in with an AT&T or Verizon over time?

William Atkins - *Calix Inc - CFO*

The short answer is yes. And I'll sort of also give you an answer a little bit about R&D because that also lies behind a lot of the decision making that led to us to increase our R&D spend this year. We believe strongly that, in order to expand the customer base for this company, it's obviously important for us to not only broaden our share within customers, but also to add new customers to the mix.

And we think that a way to break into new customers, whether it's international or domestic tier ones, is to develop products that aren't just me-too products. So, to take the easiest illustration of that, if you look at the next flavor of GPON, which is something called NGPON2, we are spending R&D dollars on that.

In a sense, we would actually do that anyway because we're in this space. But, it also is in anticipation of the larger telcos having a technology refresh. And when they do that,that is when they tend to invite new suppliers into the mix. Okay?

So, in order to, in a sense, stay current if not slightly ahead of the curve technologically, we're positioning ourselves for what we regard as being an inevitable sort of RFP process, which we might or might not win. But, that's sort of a natural way to get slotted into those customers' procurement cycles.

And then you've got a product like G.fast. I don't want to overemphasize it. But, we did come out with a release today. So, it's very timely to talk about it. That is a product which, again, can help us to penetrate incremental customers that we haven't been able to penetrate before because it is genuinely a new use case for a technology for all telcos. And therefore, it gives telecoms companies a chance to have people like us come in and sort of show them what we can do.

Tim Quillin - *Stephens Inc - Analyst*

So, that [syncs] pretty well into the notion of just generally increasing OpEx faster than you're growing revenue right now.

William Atkins - *Calix Inc - CFO*

Yes.

Tim Quillin - *Stephens Inc - Analyst*

So, I think that, in the first half of the year, you -- based on your guidance and for 2Q, you expect to grow revenue by 2%. You're growing operating expenses by 17%. Part of that is some nonreimbursed legal expenses.

William Atkins - *Calix Inc - CFO*

Yes, exactly, which are out of the picture.

Tim Quillin - *Stephens Inc - Analyst*

But, what's driving the elevated spending in the face of that [muted] sales growth? So, you mentioned some of the factors that maybe create -- that you have to position for these opportunities. But, what else is going into the thinking when you grow expenses at that level?

William Atkins - *Calix Inc - CFO*

Sure. Well, I've been careful to emphasize the subscriber-edge nature of our business, in particular the way that we look at our business. G.fast I'd mentioned, which you can argue is a subscriber-edge-type application. The GigaCenter which we launched earlier this year and which I think last time we announced the number of customers, we'd went over 200 customers who'd placed orders relative to I think over 100 as of the end of last year.

That's an example of R&D spend where I would say anecdotally our Wi-Fi expertise, say, three years ago in house was a great deal less apparent than it is today. And so, that's an area where you inherently want to increase your spend because the Wi-Fi experience is really key to the way that the end user interfaces with the broadband access network.

And these days, wirelessly, you can literally stream 4K TV, which is pretty remarkable. We also think that the subscriber-edge device, if it's sufficiently sophisticated, and if it's sold with the appropriate piece of software, gives the telecoms operator an understanding of what's going on with their consumers' usage patterns and gives them an understanding of how to help their subscribers manage their home networks, which they didn't have before.

And so, we see that as being sort of the next battleground, if you will. And that is why, broadly, we're ramping R&D. That's the way I would put it.

Tim Quillin - *Stephens Inc - Analyst*

Yes. That's fair. How about on the sales side? So, I think sales are also expected to grow -- sales expenses expect to grow faster than revenue, at least in the first half of this year.

William Atkins - *Calix Inc - CFO*

Well, some of that gets a little bit clouded by how you pay accelerators relative to performance. So, sadly, Q4 and Q1 tend to be sort of periods where it's hard to discern underlying trends because of those year-end accelerator payments.

I would say, broadly, in international, if you look at us over the past year, we have expanded our spend on our international sales force and sort of related people helping our sales effort internationally, like sales engineers and the like, faster than we have domestically. And that's simply because we've been putting dots on the map internationally.

And while we will be making some expansion in that international workforce going forward, it's not going to be nearly to the same extent as we have over the past year or so. So, we will be having some incremental spend going forward. And we'll be having some incremental spend possibly on focusing on tier one accounts. But, that's not really a huge number of heads, as you can imagine. So, it really is more of an R&D story looking forward than it is a sales and marketing story.

Tim Quillin - *Stephens Inc - Analyst*

Right. And you mentioned the GigaCenter, which is an interesting set of customer premise equipment. Is the way to think about the addressable market there as really just in an upsell versus a traditional optical network terminal in the sense that the way to size this up is the ASP of the GigaCenter versus the ASP of a traditional ONT?

William Atkins - *Calix Inc - CFO*

Well, if you were to, if you were to go for a really dumbed down ONT, like literally the things that look like cigarette cases because they're so small, those can cost 20 bucks, right? That's not what we're talking about. The GigaCenter's a much more sophisticated -- the opposite end of the spectrum from that, right?

And so, the ASP on that is inherently a great deal higher. I think that the GigaCenter, for us, represents an opportunity, not only for our customers to install a better device but also, when it's combined with Consumer Connect, which is part of our Compass suite of software, it gives that operator a much better window into what is going on in their customer's home network environment.

And you made the comment earlier that these guys see themselves as being utilities. Well, they do, but they don't see themselves as being, say, an equivalent to a water company, right? The intimacy of the relationship with the end user is a little bit higher than, say, that type of a utility.

And if you look very broadly at the space, I think we would all agree that the last walled garden, whether it's cable or telecoms, is video. And video's increasingly moving to an over-the-top environment. And so, the value-added nature of the services that are being sold by telcos are really broadband, ultimately, in the future.

And if you subscribe to that belief, as we do, and we're not the only people in the space who subscribe to that belief, then the intimacy of the relationship between the service provider and their end user is going to be much more around managing that broadband network than it is about sort of forcing them to buy ESPN and the Golf Channel at the same time, to take an extreme example.

So, what that therefore means is understanding the usage patterns of your customers. And also, helping your customers manage their own home networks is a way to maintain that intimacy and to differentiate yourself. And so, that is also one of the underlying reasons why we see the GigaCenter as being a strong product to sell.

And then finally, with the GigaCenter, it is possible to take one of our GigaCenters and essentially turn it into a unit that, instead of taking a fiber optic feed, takes an Ethernet feed into it. And once you do that, it means you can sell a GigaCenter to a telco who can in turn ship it to their customer, with no truck roll.

They literally ship it in a cardboard box to the customer. And the customer can place it essentially downstream of an existing optical networking terminal. So, you don't have to go in and rip out a piece of equipment that you've already installed. You can enhance your visibility into your subscriber's usage patterns. And you can enhance the subscriber's experience without having to go in and tear out equipment that's already been installed. And so, again, we see that as an opportunity to potentially expand the customer base.

Tim Quillin - *Stephens Inc - Analyst*

Right. So, I think -- and I understand why customers would find that attractive and should help with churn reduction and customer satisfaction and all that. So, it sounds like, though, that there is an opportunity to go back into all of the install base and potentially upsell to a GigaCenter.

William Atkins - *Calix Inc - CFO*

I would -- it depends upon when they rolled out. But, yes, it is possible to go out to people who've already bought Calix equipment and possibly our competitors' equipment, right, and to have them put a GigaCenter that's got an Ethernet feed into it upstream of a Calix device or one of our competitors' devices. So, yes, there is that opportunity.

Tim Quillin - *Stephens Inc - Analyst*

Is it more of an -- this is an aftermarket sale, I would call that, than a new build sale, so, like, where there's new networks and they're selecting what kind of ONT they might use. This looks pretty attractive.

William Atkins - *Calix Inc - CFO*

Yes, and the aftermarket sale is a way for us to potentially penetrate new customers who might have procured their equipment elsewhere, for example.

Tim Quillin - *Stephens Inc - Analyst*

Yes. And so, can you answer the question, though, in terms of ASP, where it shakes out versus other ONT's lineup?

William Atkins - *Calix Inc - CFO*

It's inherently going to be the more expensive end of our lineup is the way I would put it. We don't call the ASP -- .

Tim Quillin - *Stephens Inc - Analyst*

-- With the range -- .

William Atkins - *Calix Inc - CFO*

-- Geez -- .

Tim Quillin - *Stephens Inc - Analyst*

-- Specifically, but what's the range?

William Atkins - *Calix Inc - CFO*

A high-priced optical networking terminal can be as high as 300 bucks or as low as 200 bucks. And then the cheaper ones can be down at a $20 end if they're just pure ONTs and nothing else. And then there's a whole range of products in between.

Tim Quillin - *Stephens Inc - Analyst*

Okay.

William Atkins - *Calix Inc - CFO*

And I'm -- .

Tim Quillin - *Stephens Inc - Analyst*

-- That's fair. That's fair. And then international, you touched on some efforts to build out there, to build out the sales force. But, we haven't seen the fruits of that labor. So, do you tweak things this year? At what point do you feel like you're not getting bang for your buck?

William Atkins - *Calix Inc - CFO*

Well, having now put the dots on the map, the point is to increase productivity of those individuals who we have out in the field, right? And so, having essentially expanded, call it, last summer and into the autumn of last year, that would imply -- generally, with a salesperson, you can say, what, it takes a year for somebody to sort of have the chance to settle in. And that would therefore imply that we're focusing on enhancing productivity per head this year to ideally see results next year.

But, I would say, on international, I don't see it -- ultimately, international should grow faster than domestic, right? Inherently, it has to. And the productivity, as you would expect of our international sales force, is worse than our domestic sales force. But, that's natural. That's a normal part of any expansion plan.

So, yes, we do see international revenues increasing. But, I don't see them as being something that's going to move the needle in the near term. International's turning into a game of inches for us, where you're just -- you've put your dots on the map, as it were. And now, it's a question of increasing the productivity of those dots. So, it's just -- it's a question of -- as I said, a game of inches internationally.

Tim Quillin - *Stephens Inc - Analyst*

And maybe not specifics, but can you talk about the nature of the opportunities that you are seeing right now internationally and kind of the timeline sort of for bringing those across the goal line?

William Atkins - *Calix Inc - CFO*

I can't really name anything specific. They run the whole gamut of, say, working with Ericsson, who are our global reseller partner and who are more oriented towards tier one opportunities. And so, with them, we tend to see more tier one opportunities, if you will. And that can also be a customer base that's been buying products from Ericsson previously.

So, they'll tend to buy sort of the larger-scale products, if you will, than, say, some of the newer accounts, which tend but are not always to be Calix direct or via regional value-added resellers. And those tend but are not always -- those tend to be sort of tier two and tier threes telcos internationally sort of in a sense the counterpart of companies we've been selling to domestically. And so, the inherent spend per each one of those accounts tends to be smaller.

Tim Quillin - *Stephens Inc - Analyst*

Right. And then in terms of margins, you -- gross margins have definitely come a long way over the past few years, 36% up to 49%, most recent quarter. You mentioned 50% plus as a target with no timeframe. But, you're awfully close right now. So, why isn't there a timeframe, and what the barrier is to getting a little bit closer to that level? Is it just mix?

William Atkins - *Calix Inc - CFO*

It's just -- it is literally a product and subscriber mix. We could, I imagine -- I'm not calling it. I imagine that we could crest over 50% at some point. As you say, we're getting pretty close. But, I can guarantee you that, if we do crest over 50% in one quarter, we'll slide back in another because it's a choppy business.

And it really -- remember, we're only a $400 million revenue company. So, a single customer's orders can have a meaningful impact on a specific quarter's gross margins, which is why we'd like to call it over sort of the longer term, if you will.

But, we do see, for example, sales of our E-Series increasing as an overall proportion, as you'd expect. It's our latest and greatest product family. We're also seeing sales of the subscriber-edge devices increasing as an overall proportion of our sales. And yet we're also saying that we're going to see improving margins. So, inherently, the margins on those two sort of groups of products, if you will, are good.

Tim Quillin - *Stephens Inc - Analyst*

And if we look into 2016, should we see leverage on operating expenses?

William Atkins - *Calix Inc - CFO*

I'd like to think so. R&D, as you know, is not a dollar that you spend today for a return today. In some instances, it's a two- or three-year timetable. And in fact, the GigaCenter reflects prior years' R&D efforts. And we've also put a lot of R&D into underlying operating systems (inaudible). That is dull inherently at this stage, but is very helpful to us as a business, which should start to yield efficiencies as we go forward.

So, yes, I would like to think that 2016 is the year where we're going to start to see some operating leverage, but I can't really call it because we're going to see how -- first of all, how variable the top line is to people like us.

And ironically, if we were to penetrate, say, an incremental tier one, then you would -- because it's a new customer, you'd see deterioration of gross margin on sales to that specific customer, right? And you could potentially see an increase in OpEx to meet the R&D needs of that customer.

And yet, I think the people sitting around this table would probably see that as being a healthy development. So, I don't want to get sort of backed into, in a sense, a corner of calling that if there are other aspects to our business that are improving.

Tim Quillin - *Stephens Inc - Analyst*

And the only -- maybe the concern I've heard from investors, especially over the past few months, is that that gross -- the nice gross margin improvement over the past five years has been offset fairly completely by a rise in OpEx. And is this a market where you just have to treadmill and you have to grow OpEx to keep up with the Joneses, and you can't get off that treadmill?

William Atkins - *Calix Inc - CFO*

Yes.

Tim Quillin - *Stephens Inc - Analyst*

Is there a point where you can get [lever]? So, it's more philosophical.

William Atkins - *Calix Inc - CFO*

Yes, look, I understand, right? That inherently is the question, right? As you look at this Company, and I think this is the same question you've asked about the space, is our base business only growing at, say, a 5% year-over-year growth, which is what we showed 2014 relative to 2013, roughly?

Is there this trend? Is Dycom sort of the canary in the coal mine in a good way? Are we seeing maybe the secular trend actually happening, right? And then finally, will this Company expand its customer base, sort of back to the Company-specific aspects?

If we were only reliant upon the first aspect, then frankly, we could moderate R&D spend and deliver better operating margins. But, because we are focused on the latter two parts of the investment thesis, that is why we've increased operating expense.

And therefore, inherently, I'm saying, no, we don't believe the business is the way that you sketched it out. I know you're painting a -- sort of creating a straw man, if you will. But, no, if we saw that the business is one where you simply had to spend R&D spend along the lines of what we're doing and stay where we are, then, no, we wouldn't be doing it.

Tim Quillin - *Stephens Inc - Analyst*

(inaudible - microphone inaccessible).

William Atkins - *Calix Inc - CFO*

Yes.

Tim Quillin - *Stephens Inc - Analyst*

(inaudible - microphone inaccessible).

William Atkins - *Calix Inc - CFO*

Well -- .

Tim Quillin - *Stephens Inc - Analyst*

-- (inaudible - microphone inaccessible).

William Atkins - *Calix Inc - CFO*

Well, I understand. I think we don't worry about the inherent volatility quarter to quarter. You can see in the way we've ramped R&D, right? So, you can regard that as a bug or a feature. But, that's right.

But, I think you're asking sort of a broader question about tech in a way, right, which is focused tech companies versus companies that are part of larger groups. Obviously, I'm a member of the management team. And therefore, I have the courage of my convictions. And my opportunity cost and exposure, if you will, is very focused on this particular business.

I would say that that, being focused on broadband access, particularly at a time where we're having software-defined networking becoming an increasing trend and where you have network virtualization becoming an increasing trend, really benefits players like us because it gives us the chance to break into new accounts much more easily, whereas being an incumbent, which is inherently the diversified entity that you're talking about, as an incumbent in this space, you are essentially locked into, and your customers are locked into, proprietary systems. And so, in the broader context, I think, as an incumbent, you're less well favored than a guy like us is. We're very focused on taking advantage of this network virtualization trend.

Tim Quillin - *Stephens Inc - Analyst*

That's perfect. Thank you very much, William. I appreciate your time and hope you have [great meetings].

William Atkins - *Calix Inc - CFO*

Thanks very much. Thank you for inviting me.
