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<<Gregory Mesniaeff, Analyst, Drexel Hamilton>>

On the interest of time, I think we need to get started. I'm not sure if the webcasting connectivity is in place right now, but we'll get going with our first presentation. Good morning and welcome to the Drexel Hamilton TMT Conference. I'm Greg Mesniaeff, I cover network and telecom infrastructure for Drexel. One of the companies I cover is ADTRAN. I've covered it for number of years. It is a leading provider of broadband connectivity solutions for carriers and for enterprise customers. We have with us today, Roger Shannon, the Chief Financial Officer of ADTRAN, and we will be doing a fireside chat format for this presentation.

So, let me begin by doing that now, and then we'll open up for questions. Thank you, Roger for joining us.

<<Roger D. Shannon, Senior Vice President of Finance, CFO, Secretary and Treasurer>>

Thank you Greg and appreciate talking to you. Thanks everyone for coming to the session this morning and those listening me here. Just a brief update on ADTRAN, and who we are. At the most basic level, we are a broadband access company in all that that entails. It's an exciting time to be in broadband access is a pretty long mode, that seems like a significant dramatic developments got every day that beat on it, the evolution of network more and more, applications and the uses coming on all the way from the way that consumer demand their containment all the time, three layered speeds through Internet of Things in five year.

<<Gregory Mesniaeff, Analyst, Drexel Hamilton>>

So, when I say broadband access, ADTRAN has already been part of in years passed is a carrier, provider or power company here sometime. ADTRAN goes back about – that goes back 30 year, working through the company, and extremely didn't have a leadership positioned in carriers in the topper, still do and that's still a significant part of our business, but really the company over the past several years has divided and evolved into being really a thought leader in the technology leader and disruptor, continue to advantage of this aspect. One of the things that you've obviously seen some changes in as the company is reflected is in the most recent results and your revenues were up 14% year-over-year, carrier revenues were up 21% year-over-year, that's all pretty good and it's been a challenge to ride it. But one area where it seems to be that you guys are getting more and more involved in is service and support. Can you talk about what the driver are there? How that's playing out? Is it that carriers have lost in-house resources to develop some of these solutions or what is like?

<<Roger D. Shannon, Senior Vice President of Finance, CFO, Secretary and Treasurer>>

I think it's – it is the expansion of their network to their competitive pressures that we're seeing here. As you know, there are pressures from the carriers from and the MSOs where there is wireless, so there is – there is a competitive reaction to one, increase their speeds and receive large Tier 1 that's doing nation-wide electric rollout. That requires a lot of service and support.

Also, they connect America fiber and that's rolled out, so that also is an opportunity for our services business. Services business is something we love. We think it's at an advantage for us. I think we're very good at it, and we think it develops a stickiness in a deeper relationship with customer that is interested in selling the product once and then net sales we're able to work with them on site selection and engineering, all the way up to turnkey of limitations. It is certainly a little strange with the customers we've had and few customers.

<<Gregory Mesniaeff, Analyst, Drexel Hamilton>>

Got you. Now, if you – we dig a little deeper into your, product sales in the last quarter, from a carrier – for carrier, sales we're up 36% year-over-year, which really was, less growth internationally, but your CP here, customer promise and user device businesses was down year-over-year, down 17%. What's the shift in the landscape that you are seeing? Are you guys de-focusing from that or is it that the product landscape has changed? Will you give us some color?

<<Roger D. Shannon, Senior Vice President of Finance, CFO, Secretary and Treasurer>>

And definitely not the de-focusing on customer experience but let me take a minute and talk about the segmentation change that we made last year 2016. Part of last year, we operated in two segments, carrier network segment and enterprise network segment. We focused on the products as you described. As our services business grew and became more than 10% of revenues consistently expected to folded gap requirements is required to great services that's settling.

Actually, what we had done with our business aligned with that so since the acquisition we're focused on the services business. But at the same time we've been looking at our enterprise products. What we've realized is that rather than have sales, network infrastructure, required to build, cover the landscape customer level, idioms by names, is strategically more beneficial for us to be able to build to customers. Here customers were dependent on product, so, what we did as soon as we consolidated and gave away carrier network, enterprise networks, we created a network solutions business, a hardware and software, and that searched, we brought this on – we grew together and no longer separate R&D effort, it will be whole R&D group lot seriously bigger. So, we're able together, we're barrier to customers, telecos, the MSOs and so we can deliver end-to-end solution. They don't care on the CP side it remains, what the value seen. We can deliver that whole solution.

With the reference and can we talk about industrial devices, and now the segments within those categorical segment are access navigation to get in, thus for devices which does include – records that also influence the customer side of the network, so things like OMTs in a GPON network as well as the condition. The reason it was down year-over-year is we did have kind of the large last-time buy once we see it convenient last year, made that top just. We'll say, we talked about this in several calls, we talked for some time about a CPE opportunity or large European Tier 1 and that has significant opportunities to start making, which tier here. So, I mean it's quite the opposite. We see a lot of continuing there giving their customers with full end to-to-end solution all the way from end user customers.

<<Gregory Mesniaeff, Analyst, Drexel Hamilton>>

I think some investor sometimes just you know instinctively associates CPE with the domestic set of situation, and it's really in this case not gradual selling CPE overseas and international. So, on that subject of international sales, they haven't been very strong in the last couple of quarter, especially you know related to telecoms been big. And what's the current you know situation on that? Do you expect that business to continue to be strong or…

<<Roger D. Shannon, Senior Vice President of Finance, CFO, Secretary and Treasurer>>

So, that here – of course in Tier 1 of that instance, a very strong customer before we acquired a very close relationship with them. The majority of their footprint inter – and working with other subsidiaries players in different countries. We do have very good visibility for that customer and as you know they are engaged in pinching up the world's largest vectoring program which we have enjoyed. So, they are – on their stated plan and you can see due to reinforcements, we're seeing discussions like that, is this they finish up vectoring from 2017, they are going to then start rolling into super vectoring. So, vectoring technology, a 100-megabit access across that – that to the customer speed.

The finest part of the initiative, the European Gigabit Society, so they are rolling out 100-meg to their customers. As soon that wraps up in 2017 and they are going to be behind that with super vectoring, which device speeds of up to 350-meg across tower. That's going to go across 2018 and the press releases we have out initially about some work we're doing with them, when you think about that, which remember the anniversaries over copper, over short distance, so think about Germany, Europe, particularly it's very difficult to do fiber to the home and give them the density, the age to build these, all that example within fiber to the home. They would especially, proactive then in using our tech norms, leverage faster and faster speeds.

<<Gregory Mesniaeff, Analyst, Drexel Hamilton>>

Got you. Can we talk about the question of strength in international, so, with that customer rolling into vectoring, G.fast speak about Asia-Pacific. We recently announced the award from nbn for DPUs is to start shipping early next year, so that is – so talk about a significant opportunity for us? And then third area of international that's been basically non-existent over past year is TAM business. You initially had very strong relationships there, but unlike European Tier 1 where we had this ability that tends to be a little bulkier and it

will be large orders and then sometimes will be noticed. So, as they finish up – report through the regulatory issues, the access to their network, that basically has nowhere production.

Could we just swing back on to the U.S. market? Our trends obviously post-them traditionally a telco carrier with a supplier will obviously move to enterprise business as well. But you guys recently have been – making some significant progress into the cable in some market. Last year you brought console business for next to nothing and I guess if I could get an update on what's going on there and what are you doing in terms of holding for this to be MSO?

<<Roger D. Shannon, Senior Vice President of Finance, CFO, Secretary and Treasurer>>

Sure. So, the MSO, we think that the MSO market you know is broadband access MSO market, it bounces about at 60%. We're very strong carrier side. We realized that we need to be playing in that 60%, so we have had short-term strong relationships with some of the large Tier 1 in that from CPB side that we have had. With the acquisition products which you talked about, active EPON, that really did jump start to expand our reach into network MSO. They are able to kind of bring this products together, leverage our stronger relationship historically in the arms, looking hard to give a mix of good player.

Now the cable companies MSOs are taking different approaches, they've had large U.S. Tier 1 who is kind of pursuing more fiber deep strategy DOCSIS 3.1 whereas some of the others are looking to replace and upgrade their EPON network. So, those are all things that we are involved in and certainly growing.

<<Gregory Mesniaeff, Analyst, Drexel Hamilton>>

And probably I know that some other equipment supplier that sell to the telcos, recently they are complaining they have M&A activity getting in the way of some percentages. One of those comes to mind by way, CenturyLink which happens to roll with this to customer, so my question is, does that kind of have any impact on any of this? Do you have margin level for it?

<<Roger D. Shannon, Senior Vice President of Finance, CFO, Secretary and Treasurer>>

It is not, we've not seen any impact on the CapEx side or business with that customer is very strong as I mentioned, and so they are in the process of rolling out their vectoring platform across the U.S. and looking to grow that big. It's a three year plan 2017 to 2019 and very openly sharing comment on vectoring under that rollout. There are few areas always there. They've told us they are expecting changes, but we haven't seen anything but, as we all know, it doesn't happen, so it happens…

<<Gregory Mesniaeff, Analyst, Drexel Hamilton>>

Any updates on the Verizon or NGPON2, I know that's been sort of been renewed in the last…

<<Roger D. Shannon, Senior Vice President of Finance, CFO, Secretary and Treasurer>>

Sure, so that is a – it goes back to my opening comments about partnership, structuring, industry leadership and so we are probably short-listed Verizon, one of two finalist and you know they say, they tend to deploy direct with two network, next generation algorithm NGPON2 network continue to be in trials with that, and spend some limitation recently about awards for ways of this application, we have trials. We have proceeded as well, so that's – is progressing through the lab. It's going to bring in some new technology where our network is 40-gig high, you will have tunable optics, so especially in the – for 10-gig, so there is innovative new technology. So, I put that 10-gig…

<<Gregory Mesniaeff, Analyst, Drexel Hamilton>>

That's great. I got more drilling questions, but anyone here has any questions, I'll start the Q&A. Sure. So, you talked about that 10-gig and we got counter amazed the opposite of super vectoring, what distances is that work over is good. Shouldn't we see to that?

<<Roger D. Shannon, Senior Vice President of Finance, CFO, Secretary and Treasurer>>

Yeah. So, vectoring in single stream is the longer distance reach opposed to G.fast which is 300-foot at last, if I'm correct. So, it's 1000 meters, so it's – it's got a longer reach. So, as fiber to home…

<<Gregory Mesniaeff, Analyst, Drexel Hamilton>>

Sure, I mean, so it doesn't mean its back from the centralized branch office, what is the…

<<Roger D. Shannon, Senior Vice President of Finance, CFO, Secretary and Treasurer>>

From the – from where – so vector is in the latest press release, it talks about being able to deliver that G.Fast and mission G.fast at least for now, it's running fiber to base and then you can, what we call DPU, distribution point unit delivering the experience over the last – for call for the last thing. We just recently demonstrated being able to take fiber to home node, run super vectoring to from the cabinet and see if to building and then making that cheap and we're studying and pushing through wireless or fiber for the run.

<<Gregory Mesniaeff, Analyst, Drexel Hamilton>>

So, how does that compare to any type of number to 5G? Hopefully, now more and more out there, you talk about small cell, there is no wires going in and out? This is Steve. This is still a little bit slower, but that's something that they Comcast the growth don't necessarily need to…

<<Roger D. Shannon, Senior Vice President of Finance, CFO, Secretary and Treasurer>>

Yeah appreciate you brining up 5G and this is the same area you see is basically commentary for us. We think NGPON2 product is ideally suited for 5G. We think about 5G and we understood where small cells radio system, wired but it's all – still acquired from the – so you got back off. I'm afraid it goes back to the CO and we will invite you our two ideas, something that in that, make it celebrity.

Now 5G, we expect will be delivered to both global and thick wireless. But I guess, it's not very good to say that the outliers to NGPON2. Think about the continuous advancements in speed on the copper over the last few years, really 100-meg, 200-meg, 250-meg base and the management is circling this back. It is the economics are so compelling they had to extend the life of that plant compared to fiber installation that I suppose are successful in the beginning set. So, I think it is to be seen on FASB, it certainly it's going to have an impact whether it totally replaces wired access, we're already seeing that, but what I'm saying we are deployed in that area as well.

<<Gregory Mesniaeff, Analyst, Drexel Hamilton>>

What the speed difference? You haven't really noted, compared to what really 5G would do as speed versus your super vectoring?

<<Roger D. Shannon, Senior Vice President of Finance, CFO, Secretary and Treasurer>>

Yes. So, 5G is supposed you have 2-gig, the vectoring 100-meg, super vectoring 350-meg, so 5G certainly can be much faster than fiber to have speed. So, really it depends on the customer needs and the customer uptake. What we've seen is when gigabit comes into neighborhood or an area, you will have some percentage of customers who'll take or gig service, but you've got his table back for many more are opting not built it yet, but go under that, so it's – the drivers for faster speeds are certainly increasing instead of a customer dynamic MSP.

<<Gregory Mesniaeff, Analyst, Drexel Hamilton>>

And the other. So, you probably mentioned a couple of related to you largest customers, now far down...

<<Roger D. Shannon, Senior Vice President of Finance, CFO, Secretary and Treasurer>>

Yes, so we have customers across the Tier 1 and Tier 2 and Tier 3 and Tier 4. We have overs that we can stop counting, we're operating some across 2017 over 400 in that nearing deployment, so we're working with all lights, full ops, that sort of thing. All the way up through Tier 3s, Tier 2s and they are certainly larger to Tier 1s. So, we're truly covered the spectrum there. The connected product is broken down into two segments. First part the roll-out of price gap is in Tier 1s and Tier 2s, which started in 2016. The money for the Tier 3s rate return

here, we actually see kind of just finalized that, pretty much of that, but should start moving before the end of this year, so you can see – we should see that same effect that was since Tier 3 started deploying and...

<<Gregory Mesniaeff, Analyst, Drexel Hamilton>>

Just maybe a difficult to quantify that, obviously the second quarter – years have been pretty good. How much of that you think is from AT&T shipping some other CapEx, recovering first, net responder away and maybe spending money somewhere else that kind of benefited you, would that come back to hurt you next year, or do you still get use from that increased spending too?

<<Roger D. Shannon, Senior Vice President of Finance, CFO, Secretary and Treasurer>>

No, it's really – it's nothing to do with that customer yet. We think the work we have put them, seem sort of how fast we talked about on our last call is just starting to ship. So, expect to see that ramping. We didn't actually see anything that maybe put press release out few weeks back about marketing and selling cheap. They are taking – going to be used into first, something with the threats we deal and mission we communicated throughout. It is about fiber.

It's in the first half of fiber to the home, the economics of that which do not come, they are expensive. The FCC less than count if you got passed as fiber, so it's fiber to the baseline, and then G.fast and so their plan is to you got G.fast and that would mean – that we've seen Q1 and Q2 both from different record portions for the company has been a little more broadly based out of – you are either being – Ian will talk about key customer, talk about that. So, we think about AT&T and those are opportunities that we see coming to another team that we have significantly grow in this space.

<<Gregory Mesniaeff, Analyst, Drexel Hamilton>>

[Question inaudible]

<<Roger D. Shannon, Senior Vice President of Finance, CFO, Secretary and Treasurer>>

So there are about 700 Tier 3 carriers, small carriers. So, when the FCC was finalizing their CAS, program to those carriers, the level – we said all along, that the CAS is – there's been some payment substitution finding, more deeply for the Tier 1s and Tier 2s, they set with CAS funding, that is incremental and they would not fall in those areas having high.

The Tier 3 is a transition USF funding overrated to CAF funding for premature carriers. Of those 700 however, a little over 100 of them selected, what's called the A-CAM mode, the Alternative Connect America model. So, they were – they had a choice to make, so they had a choice to make, you are staying on the return type normal and then on step, or do they build more toward the Tier 1s, Tier 2 price cap model, where they are a set funding, they connect to a certain amount of 100 – a little over 100 chose that A-CAM model and that should start next year.

We're right clock on. Here we got a horrible hurricane already and we have little working its way up to Florida.

<<Gregory Mesniaeff, Analyst, Drexel Hamilton>>

Typically when we get a mass flooding situation, that doesn't impact your equipment carriers, they are pretty flood-proof and service there is not stopped. Also, most of the replacement that occurs after such an event pretty much water tight.

<<Roger D. Shannon, Senior Vice President of Finance, CFO, Secretary and Treasurer>>

I would certainly agree with that. It's certainly our – we're hoping for the best earnings and when it now, certainly lost there some people in Texas and the Louisiana, the way it's still with Sandy for example in your chat, we did see some need with the carrier for replacing some equipment, but you are right, a lot of it is hardened in term of the - but there also is opportunity that for need for replacement, and it just depends on where the water is now, drastic sales.

<<Gregory Mesniaeff, Analyst, Drexel Hamilton>>

Any other follow-up questions from anyone? Okay. That's pretty much it. Roger, thank you very much. And thank you for attending and you get ready.