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# EDITED TRANSCRIPT

ADI - Analog Devices Inc at Credit Suisse Technology, Media & Telecom Conference

EVENT DATE/TIME: NOVEMBER 27, 2018 / 10:00PM GMT



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## CORPORATE PARTICIPANTS

**Vincent T. Roche** *Analog Devices, Inc. - President, CEO & Director*

## CONFERENCE CALL PARTICIPANTS

**John William Pitzer** *Crédit Suisse AG, Research Division - MD, Global Technology Strategist and Global Technology Sector Head*

## PRESENTATION

**John William Pitzer** - *Crédit Suisse AG, Research Division - MD, Global Technology Strategist and Global Technology Sector Head*

I'd like to welcome everyone to the afternoon fireside chat with Analog Devices. My name is John Pitzer. I'm the semiconductor and semiconductor capital equipment analyst here at Credit Suisse. It's my distinct pleasure this afternoon to introduce Vincent Roche, the Chief Executive Officer of Analog Devices. We've got 20 to 25 minutes of sort of a fireside chat in this setting. We do have a mic that's floating around. So if you have a burning question, please raise your hand, we'll get you the mic and allow you to ask the question.

## QUESTIONS AND ANSWERS

**John William Pitzer** - *Crédit Suisse AG, Research Division - MD, Global Technology Strategist and Global Technology Sector Head*

But Vince, I'll kick things off. And it's kind of an obligatory first question, the first question in a fireside chat in -- chat environment, especially if there's anyone new in the room. I wonder if you can just spend kind of a few minutes positioning ADI. What's your core IP? What markets do you go after? What's the core strategy?

**Vincent T. Roche** - *Analog Devices, Inc. - President, CEO & Director*

Yes, great question. Thanks, John. So ADI, we're in business now for almost 54 years. We specialize at the physical edge, the analog edge between the world, the physical, and the world of the cyber or the world of the -- the world of physical and digital. So that's our specialty. We're a \$6 billion company, and we have very high standards in terms of our financial returns. So we've 70% gross margin plus model for margin. And then operating profits, we expect them to be in kind of the mid-40s. So we're able to do that because we have a very fragmented, diverse business. We play in the cutting edge, and we've got an innovation premium essentially for the products that we develop. So I've been in this business -- I've been with ADI almost -- I've been with ADI just over 30 years now at this point in time, and never have I've been so optimistic about the semi sector or ADI's prospects. So we, for example, provide critical technologies to radio base stations, so 4G, 5G, whatever comes beyond that, anybody here who's got a car, who's got ADI technology in the infotainment system, the safety systems. Industrial machines are big users of our products. And health care is an area of very strong growth for the company, a relatively modest size in our overall business, but we supply critical technologies for diagnostics and wellness care. So that's the company in a nutshell.

**John William Pitzer** - *Crédit Suisse AG, Research Division - MD, Global Technology Strategist and Global Technology Sector Head*

It seems like every 3 or 4 years, this conference gets hijacked by the semiconductor cycle question. We're clearly going through a period of correction. Most companies in their Q3, Q4 reports saw estimates come down. I'd love to kind of get your perspective on the health of the overall cycle but probably more importantly, some of the positive puts and takes at ADI that are helping to cushion some of the softness that you're seeing out there.

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**Vincent T. Roche** - *Analog Devices, Inc. - President, CEO & Director*

Yes. I think those who know the semi business for more than 2 decades, say, always refer to the cycle. I don't think there is a classical cycle anymore. The cycle was kind of intrinsic. It was driven by the inability years ago to manage the supply chain correctly, to monitor demand and line the supply chain up around the real demands. I think those days are largely behind us, and the industry is far more about the macro than it is now secular cycles, okay. What we're seeing as a company, we're -- 90% of our business is B2B, 10% in more consumer-type application. So we're highly diversified. Half our business comes from industrial and health care spaces; and even though we're highly diversified, tens of thousands of products, tens of thousands of customers. And what we're seeing right now is the softening of the automation part of that business, okay, and -- but we're seeing strength in aerospace and defense. We're seeing strength in health care. We're seeing strength in electronic test and measurement for 5G systems, battery formation and so on. So there's an ebb and a flow in that industrial business right now. And if I was to say there is a specific area where the softness is more pronounced, it's in Asia right now at this point, in the industrial area. Automotive for ADI was -- in '18, the fiscal year just passed, was really a story of stabilizing the business and getting it back on a solid growth track again particularly in the electrification area. We've got a slew of new products coming in, radar, for example, for advanced driver systems applications. So my sense is the growth rate of car sales is probably not going to be very pronounced in the next few years, but the content story is getting stronger for semis, in general, and for ADI as well, specifically. So I think it's, right now, steady for ADI. It's been -- it produced growth in '18, and I think it will produce growth again in '19 driven by battery and safety applications, in particular. In the communications infrastructure area, that's a point of distinct growth for ADI right now. We've been investing heavily as a company in R&D for wired and wireline as well as wireless applications. And with the acquisition of Hittite we made a few years ago, we've got a tremendous breadth of technology now that makes us unique in the world of base stations, for example, where we can architect complete radio systems from end to end. So with the onslaught of these new 4G systems with massive MIMO and also 5G coming on the tail of that, we see tremendous secular tailwinds in that business in '19 and beyond. So that's an area, I think, of very distinct growth.

**John William Pitzer** - *Crédit Suisse AG, Research Division - MD, Global Technology Strategist and Global Technology Sector Head*

Let's drill down a little bit. Every year, we do an investor survey to kick off the conference, and interestingly enough, after being off the radar screen for the last couple of years, 5G was sort of picked as the most investable theme for the coming year interestingly even though investor don't really see the inflection coming until 2020. I really want to drill down into your market opportunity in the comms infrastructure business, first, with massive MIMO and, secondly, with 5G. How should we think about the content growth of sort of core ADI from 4G to massive MIMO, massive MIMO to 5G? Question #1. And question #2, what does the Hittite acquisition add to your TAM abilities in massive MIMO and in 5G?

**Vincent T. Roche** - *Analog Devices, Inc. - President, CEO & Director*

Well, let me try to unpack your question and also unpack the space a little bit. So the next 5 years in terms of communications with wireless infrastructure is largely about the 4G platform being augmented with new technologies, like massive MIMO, for example. And then we'll start to see classical what we think is 5G, which is the millimeter wave technology with the software-defined networking, if you like, processing unit behind that. That will, I think, begin in earnest in the early 2020s, 2021, '22. So in the meantime, it's largely going to be 4G platform augmented with new technologies like massive MIMO. So what Hittite has brought to ADI is the RF and microwave technology with a much greater breadth. ADI is the mixed signal software-defined transceiver, for example, in massive MIMO, and that brings content gain to ADI probably 2x as we move up the chain from the classical 4G to the newer 4G or quasi-5G systems. And when we get to 5G, classical 5G with the millimeter wave technologies, my sense is the content possibility gains are 4x. So what I've been committing publicly is that my sense is with the products we have on hand, with the designs we've got on hand, we probably can double this business in the next 4, 5 years thereabouts, this -- the wireless part of base station.

**John William Pitzer** - *Crédit Suisse AG, Research Division - MD, Global Technology Strategist and Global Technology Sector Head*

And as you look at the profile today in communications, what does 5G represent as a percent of revenue? My understanding is it's still relatively small, maybe 5% 2 quarters ago, still less than 10%.

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**Vincent T. Roche** - Analog Devices, Inc. - President, CEO & Director

I think 5G today for ADI is considerably less than 5%.

**John William Pitzer** - Crédit Suisse AG, Research Division - MD, Global Technology Strategist and Global Technology Sector Head

We'll spent a little bit of talking about your acquisition of Hittite. You did a little bit of a larger acquisition more recently with Linear Technology. I believe...

**Vincent T. Roche** - Analog Devices, Inc. - President, CEO & Director

A little bit more money, too.

**John William Pitzer** - Crédit Suisse AG, Research Division - MD, Global Technology Strategist and Global Technology Sector Head

It's a little bit more money. I'm curious to get sort of your report card on how that acquisition is going from an integration perspective. And I guess, more importantly, from here as we think about the cost synergies being realized, how do we think about top line synergies in terms of cross-selling opportunity?

**Vincent T. Roche** - Analog Devices, Inc. - President, CEO & Director

Yes, a good question. I'd like to step back and just talk for a second about Hittite. We acquired Hittite about 3.5 years ago. And when we acquired the company, their trailing 12-month exit rate was around \$270 million. In our fiscal year just closed a couple of weeks ago, that revenue was -- it topped well over \$400 million. So we've got very, very good synergy on the top line. And we're using the same formula again to extract the top line synergies from LT. Just to simplify the story, we've largely captured a lot of the cost synergies already. We're well down the track, capturing the last tranche here. But when we acquired LT, the opportunity we felt was available to us for cross-selling, okay, between getting LT's technology into ADI's larger customers. We felt that was across the board around \$1 billion. It is now around \$2 billion. We've got to capture it, but at least the opportunity value has grown significantly. And my sense is we can take what was a 3% annualized growth rate for LTC. We can -- I think we can double that over the next -- it takes a while for these designs to mature and materialize, but I think we'll start to see meaningful top line additional growth in the 2020 time frame. We're going to production now with some automotive, power opportunities as well as communications infrastructure. So I think the early signs are good, and we'll make some solid progress there.

**John William Pitzer** - Crédit Suisse AG, Research Division - MD, Global Technology Strategist and Global Technology Sector Head

Vince, one of the questions I get is whether or not the cross-selling opportunities with Linear is just a function of you're willing to live with a lower margin profile than the old Linear management team was willing to live with as opposed to really adding incremental value by putting an ADI part and a Linear part together. How do you see sort of the driver of revenue synergies? Is it really just your ability to go after a broader TAM because of your margin profile? Or is it really because the 1 plus 1 equals more than 2?

**Vincent T. Roche** - Analog Devices, Inc. - President, CEO & Director

Well, I think it's the latter that we've got to create something greater than the sum of the parts. And of course, the LT sales force is very well-versed in selling value. So nobody is going to give anything up. And of course, when it comes to margin as well, it's got 2 sides to it. It's got price and it's got cost. So the ADI cost structures make the products more competitive. So in the aggregate, we expect to be able to get the broad base of business, the 1 plus 1 greater than 2 at the margin levels that we're accustomed to. That's the expectation that we have.

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**John William Pitzer** - *Crédit Suisse AG, Research Division - MD, Global Technology Strategist and Global Technology Sector Head*

It didn't go unnoticed by a lot of investors, myself included, that on the last conference call, you talked about in future guidance that you're going to talk more about operating margins and not gross margins. Is that just a natural evolution as you try to get more aggressive with the Linear portfolio? What were you really trying to message with that changing guidance philosophy?

**Vincent T. Roche** - *Analog Devices, Inc. - President, CEO & Director*

Well, I think, obviously, we're going to report gross margins. In retrospect, we report results. It's just very, very hard to predict gross margin with any accuracy in a given quarter given product mix changes and so on and so forth. So that's the reason. It's nothing to do with LTC. It's just the difficulty in trying to predict margins ahead with any degree of accuracy.

**John William Pitzer** - *Crédit Suisse AG, Research Division - MD, Global Technology Strategist and Global Technology Sector Head*

Got it. On the auto space, we talked a little bit about the comms drivers, which I think everybody agrees is very strong. On the auto space, you've kind of been undergrowing in the market. I think core ADI, the historical problem was that you were really in the MEMS sensor and that was a much more competitive space. I think that's gone from like half the revenue maybe 5 years ago, and autos is now down to closer to less than 10%. What do you think are the key drivers for autos today? And to what extent are you banking on Linear regaining those BMS sockets versus more drivers from the core ADI business?

**Vincent T. Roche** - *Analog Devices, Inc. - President, CEO & Director*

Well, the core ADI, we have 3 fundamental parts to our automotive business. We have infotainment, which has been growing. It's based on ADI's DSP, a mixed-signal building block component for high-end audio, mid audio and so on and so forth, our A2B technologies that are the media transport units that partner with these digital signal processors and solutions. That business has been growing comfortably in the high-single digits now for several years, and I expect it will continue in the years ahead as well. When it comes to safety, I mentioned MEMS was something that we've been kind of extracting. We don't invest in the MEMS units, the commodity part of that anymore, but we have IMUs now that are being used in advanced safety systems. We have new radar technologies that are coming, and we also have some LIDAR solutions that we've been involved in early days in terms of building blocks. We're also bringing a solid-state LIDAR solution to market at some point over the next year. So we see -- I think nobody is looking for less safety. Everybody wants more. So it's a good place for performance franchise like ADI to be playing. On the powertrain side of things, the big story is really battery management systems, the electrification. And my sense is that we've stabilized that business. We actually got the LTC BMS technology, the products, into double-digit growth territory towards the end of 2019. I expect that will -- or '18, I should say. I expect that to continue again in '19. And given that electric cars have something like 1% or 1.5% penetration of the overall car output, I think that's a great space for the long term. We've got some new products coming, we've just sampled a new product, and we've a whole new architecture coming towards the end of 2019, which will change the game there. So I think when you put all this together, the ADI business has been growing at high-single digits, the LTC business at low-single digits. You put the whole thing together with a new set of products and business logic. My sense is we can grow that business in the mid-single digits within -- on a compounded basis, collective basis into the high-single digits over the next 3 to 5 years.

**John William Pitzer** - *Crédit Suisse AG, Research Division - MD, Global Technology Strategist and Global Technology Sector Head*

I want to switch gears into industrial. And I have several questions on the end market. You mentioned earlier that industrial China has been sort of the nexus of the weakness that you've been seeing. Some of your peers have kind of talked about this idea that things stepped down in that market late September, early October. But from those levels, it's kind of stabilized. Is that kind of how you're seeing your business play out right now in that China industrial market?

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**Vincent T. Roche** - *Analog Devices, Inc. - President, CEO & Director*

Yes. I think we're not seeing anything unnatural in terms of order patterns. I think there has been a step down. There's been a deceleration clearly, but I think it's steady. I think -- and we're talking about specifically the automation side of the business here. I think on a global level, it's steady. I think with all the kind of the macro uncertainty as well, that's an overhang in terms of optimism, which drives desire to invest in these high CapEx-oriented businesses. So I think when -- I have no fears, by the way, about the long term. There's no question that we're automating plans and processes at a more aggressive rate. We're bringing a lot of new technologies, like time of flight or cobotic systems. I'm not concerned about the long term at all. I think right now, the fog and the uncertainty around tariffs and trade tensions, that's causing, I think, the biggest part of the issue right now. But I think it's -- at least from a demand standpoint, it's steady.

**John William Pitzer** - *Crédit Suisse AG, Research Division - MD, Global Technology Strategist and Global Technology Sector Head*

When I think about the trade tariff, I think about 2 impacts to demand. One is sort of what I'd like to call demand dislocation versus demand disruption. There's clearly going to be an element of demand disruption around these tariffs. But relative to the dislocations and specific to your -- in fact, your automation business, every industry across the world that manufactures in China is now rethinking how much of that manufacturing capacity they want to have in China. First thing you do when that happens is you stop building. But at some point, if you're going to relocate capacity into other regions, you're going to have to start building. As you talk to customers, is there any indication of the time line before we start to see potentially -- if not building in China, building in Malaysia or the Philippines or Mexico, is there any sort of those conversations going on within your factory automation vertical?

**Vincent T. Roche** - *Analog Devices, Inc. - President, CEO & Director*

Well, I think you've got to kind of unpack that a bit as well. There is going to be -- in China, PRC, there is going to be a multiyear cycle of bringing automated machines into place to replace human labor. I think that's without question. I don't hear a lot of conversations at the present time about looking to dislocate manufacturing in China, say, into other parts of Asia. I think it's a wait-and-see situation. When there's more clarity on what's going to happen with tariffs, trade tension, then I think people will start acting, no doubt. We're all looking at contingencies, but right now, I don't see any actions behind the contingencies. I think it's kind of a wait-and-see process right now.

**John William Pitzer** - *Crédit Suisse AG, Research Division - MD, Global Technology Strategist and Global Technology Sector Head*

If you go back to pre-financial crisis, most semi companies had their auto business at the subsector inside of industrials. I often joked that industrial sometimes means stuff that we sell and we're not quite sure where it goes. But I think the entire industry has gotten better at trying to subsector the industrial bucket. And you mentioned factory automation. You also talked about health care. As you look at the sub-buckets inside of your industrial bucket, which one has the opportunity of being the next auto, i.e. a stand-alone bucket within your business model?

**Vincent T. Roche** - *Analog Devices, Inc. - President, CEO & Director*

Yes, it's a great question. I think if I were to pick one, I would pick health care. It's only a 5%, 6% business for ADI today in terms of composition of total, but the business is growing double digits. And I think for the first time, certainly in my time with ADI, the economic needs and the technology capabilities are converging. And I see a lot more deployment of technology in wellness, care, in diagnostics, using -- for example, we're shipping products today that change the footprint of things like CAT scanners, digital X-rays with -- where we can produce higher image performance with lower dosage X-ray systems. So my sense is that's ripe for taking advantage of the economic issues that we're dealing with in the health care space with spiraling costs, and we're making these machines better and cheaper all the time. So I think that's an area that will continue to grow at double digits. It's becoming a significant business for ADI today. But more so, I think the secular trends are now the tailwinds are behind it.



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**John William Pitzer** - *Crédit Suisse AG, Research Division - MD, Global Technology Strategist and Global Technology Sector Head*

Do you have any questions in the audience for Vince? The microphone up here.

**Unidentified Analyst**

You said that you're at a steady level now that whatever downturns started or happened, are you depleting your backlog at these steady levels? Or is your book-to-bill close to 1? Is it around 1? Is it lower than 1?

**Vincent T. Roche** - *Analog Devices, Inc. - President, CEO & Director*

Well, do you mean for the industrial business or in general?

**Unidentified Analyst**

Why don't you tell us both?

**Vincent T. Roche** - *Analog Devices, Inc. - President, CEO & Director*

Well, I think if I look at the industrial business, it's -- the automation part is below unity. We talked with that at the earnings call. And I think between the -- if you look across the company, it's about unity at this point in time across all the businesses. Some are stronger than others. Our communications business is particularly strong. Automotive is steady. And then there are ebbs and flows in the industrial business. That's kind of the picture.

**John William Pitzer** - *Crédit Suisse AG, Research Division - MD, Global Technology Strategist and Global Technology Sector Head*

Any other questions for Vince? Vince, one of the high-class problems your business has, there's just a lot of free cash flow that it can generate. Can you talk -- even during periods of softness. Can you talk about cash priorities vis-à-vis paying down debt versus a buyback? And on the buyback, if I go back 2 or 3 years, you've always had a buyback system in place, but it was kind of a rigid matrix, which never would have let you execute on the buyback. Has the philosophy there changed at all?

**Vincent T. Roche** - *Analog Devices, Inc. - President, CEO & Director*

Well, if I just talk about we've got a strong commitment to our dividend and we've been increasing that dividend at about 7% a year for the last several, we will continue to do that. We are more aggressive. We've just bought back about \$0.25 billion worth of our shares in the last 3 months or so, and we will continue to that. So we'll probably be a bit more aggressive. But we also use forward-looking and trailing metrics to make sensible decisions, but we will continue to look for opportunities to buy back the stock. And we'll pay down the debt at a steady rate, but we'll probably not get to a zero debt or a positive cash situation on the balance sheet at least for the foreseeable future.

**John William Pitzer** - *Crédit Suisse AG, Research Division - MD, Global Technology Strategist and Global Technology Sector Head*

Great. With that, we're coming to the end of the session here. I'd like to thank everyone in the audience for joining us but especially thank Vincent for spending time this afternoon. Vince, this was great.

**Vincent T. Roche** - *Analog Devices, Inc. - President, CEO & Director*

Thank you, John.

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**John William Pitzer** - *Crédit Suisse AG, Research Division - MD, Global Technology Strategist and Global Technology Sector Head*

Appreciate it.

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