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# EDITED TRANSCRIPT

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

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## CORPORATE PARTICIPANTS

**David Zinsner** *Analog Devices Inc. - SVP, Finance & CFO*

## CONFERENCE CALL PARTICIPANTS

**John Pitzer** *Credit Suisse - Analyst*

## PRESENTATION

**John Pitzer** - *Credit Suisse - Analyst*

Why don't we go ahead and get started. I see the clock is counting backwards. It means we should get started. I'd like to welcome everyone to the session this afternoon. It's my pleasure to introduce to my immediate left David Zinsner, who is the CFO of Analog Devices. We're going to go through a fireside chat over the next 20 to 25 minutes. If you have any questions, please raise your hand and we have mics that are floating around the room and we'll try to make this as interactive as possible. Dave, as is typical in a fireside chat format (technical difficulty) obligatory first question in case there are any new investors in the room. May be you can spend the first couple of minutes just kind of positioning ADI. What's the core IP, what end markets do you address and kind of what's the core philosophy of the Company?

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**David Zinsner** - *Analog Devices Inc. - SVP, Finance & CFO*

So ADI, we've been around -- we are actually celebrating our 50th year as a company. We're founded in 1965. We've been doing pretty much the same things since the beginning, which is focused on signal processing. What we do is connect the real world of light, sound, temperature, radio waves, what have you and convert that to digital. So all the applications you use, all the applications that are in other end markets used to digitize that process pattern, provide some output.

We virtually touch every end market that utilizes electronics and hardware in some way. Our biggest end market is industrial; it's about 50% of our business. And this is all long tail customers, we probably have almost 100,000 customers in the industrial space, not one of them makes up a significant portion of the revenue within industrial, so it's a highly fragmented business. And then we have three other end markets that make up the other half that are roughly depending on the year and the quarter closely around the same percentages, which are automotive, consumer and communications. Communications for us is actually the communications infrastructure, portion of communications and we participate both in the wireless communications, base stations and so forth and on the wireline side in terms of fiber optics.

In consumer, we have a number of different sub-markets within the consumer space, but our largest one and the one that's driven a lot of the growth recently is the portable space, but we have a lot of -- we're in cameras, we're in kind of prosumer type applications like (inaudible) been actually over the course of last five years one of our fastest growing end-markets.

We're very profitable, our margins are in that kind of mid-60s level. Our operating margins are in the mid 30s and the beauty of the market that we participate in relative to lot of the semiconductor markets is it's a very low capital-intensive market. Our business so, we spend about 3%, 4% of our revenue in terms of CapEx. So at the end of the day what this business does is, it generates a lot of cash flow, lot of free cash flow. We generate anywhere between high 20s to low 30s as a percent of revenue in terms of free cash flow and what we do is we use a little bit of that to do periodic acquisitions and then we give the rest of it back in the form of either a dividend or a buyback and we've been -- what I would say is relatively high dividend payer relative to the industry, we've grown our dividend 12 times in the last 11 years. And then on the buyback side we're kind of in and out depending on whether the stock is kind of moving weaker or strengthening and just kind of periodically buyback stock when it makes sense.

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**John Pitzer** - *Credit Suisse - Analyst*

Dave, when you talk a little bit about the core IP, because a lot of analog companies out there, the vast majority focusing on power. You guys have kind of a unique real estate in the semi market, given your position in A to D converters. What makes that such a difficult sort of application to do well. What's your share in that market and kind of how big and wider the modes in your business.

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**David Zinsner** - *Analog Devices Inc. - SVP, Finance & CFO*

Well I actually think analog in general is really hard to do, so they are parts of the market that we aren't particularly strong and that we have a tough time getting into because analog is different than digital, in that it takes a long time for the engineering teams as they come in as new college grads, get ramped up to a level where they really are performing at a high level and kind of can innovate.

And on top of that, it's very much a building block kind of approach. You start out with kind of base technology and you build on that and not having done those first layers makes it impossible to jump to like the fifth layer to be able to provide a solution, so it's the fact that you're in it for a long time, you build up these teams over a long time that they've been doing it for a long time that allows you to be able to be successful in this business and then also a lot of businesses have these long life cycles. So -- and it takes a long time from the time you get the design to the time you actually even see revenue. So it's got a long payback period. So a lot of companies don't try -- don't enter this market because by the time they ever saw a return on their investment, they would be bankrupt and so that kind of inhibits people from getting into this and then as you just kind of build-up more and more capabilities over time, that enables you to make the solutions more elegant, higher performance, more innovative and without that kind of base understanding it would be very difficult.

Where we try to hit a beachhead in analog is in data converters as you mentioned. Depending on which market study you look at, we're anywhere from kind of mid 40s to 50% of the market in terms of data converters, that's the area we focused on from the early days when we had a semiconductor business. And I think intuitively, maybe both -- a lot of people were kind of -- when digital really came about, really focused on digital. I think people well before me at Analog recognized that hey, everybody is going to need some ability to take real world signals and convert them, so these digital systems work. Everyone's going to need a data converter, so we should continue to invest in that and it was a brilliant move because that's exactly what happened.

It's hard to do -- a lot of these data converters either have to operate at very high speeds, have to have unbelievable precision, have to be very low power in terms of usage, low power intensity, have to work in noisy environments, extreme environments, where temperature is an issue and all of that takes a lot of understanding about the nuances of how data conversion works and we just built up that expertise, which has enabled us to not only drive a lot of barriers to entry, but also get a good return on investment for those products.

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**John Pitzer** - *Credit Suisse - Analyst*

Dave over the last sort of three plus quarters, your end market exposures changed pretty dramatically, relative to the outsized growth you've seen in the consumer market, which has gone from around 10% to now almost 25% of total revenue on the back of the Force Touch application and your success with sort of the single customer, which is a little bit different than kind of the rest of your business model, diversified customer base. Clearly, there's been some angst, but that's created with the investment community. Talk a little bit about your decision to go after that application, why you think it's sticky, sustainable, why you like that revenue stream?

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**David Zinsner** - *Analog Devices Inc. - SVP, Finance & CFO*

Okay. So we really -- I'd love to say that we have this whole planned idea of okay we're going to have this much of this customer and this much of the next customer. It [can't] be orchestrated quite to that level. What we focus on is innovation. We go after innovative technology, wherever that is and there is a core set of customers and this is one of the customers, and they've been a large customer of us -- of ours for a long time. We go after those customers and try to find the pockets of really, really difficult things to solve that require lots of innovation and those are the areas we focus on and of course I'd say in general that kind of distributes itself over a wide set of customers and really [doesn't] put us in a place where we're concentrated with any one customer. In this particular situation given the level of where the technology was going, it positioned it to where it drove a little bit more revenue and a bigger customer.

And that's -- we'll follow innovation anywhere it goes, if toaster ovens decided -- they decided to make toaster ovens innovative and we would go after the toaster oven market. But this just happens to be the market where a lot of innovation is happening and we were able to identify some good opportunities and that drove a lot of growth and we're pleased with it quite honestly. I would say we have -- we are working hand in glove with this particular customer, not only in this technology and the future generations of this technology, but also on other things that this customer wants to do with this application and other applications in the future.

And I think it's a very strong relationship, it's a relationship that goes all the way up to our CEO and up to high levels within that organization. And so I think that this is a very stable business, a business we should won, it's a business that generates good cash flow and good return for our shareholders and so I'm kind of happy -- hopefully over time, the success that we had here with this particular OEM, we'll be able to replicate in some other OEMs in some other markets that will be equally as impressive and drive equally the equivalent level of growth and so over time what seems like relatively high concentration risk for us, which is probably not very high concentration for most companies, will start to normalize down to levels that gets under the thresholds of 10% (inaudible).

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**John Pitzer** - *Credit Suisse - Analyst*

I think one of the concerns I'm sure you've heard this question voiced is the idea that away from you the module for Force Touch has had some yield issues and we've all been trying to look at your consumer revenue over the last three or four quarters and back into a unit shipment number and try to understand whether you are over-shipping or under-shipping kind of the publicly available numbers for your customer. I think the flaw in that analysis is we ought to make an assumption on ASP, and you're not really helping us out there, and I get that, but in lieu of that, can you help us get more comfortable with where you think you are in the inventory situation, the yield situation with that customer? Have you been over-shipping? What's your guidance for the January quarter? A catch up so that by the end of January, you think you'll be more shipping closer to demand or how do you think or do you think you've been shipping closer to demand all the way through?

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**David Zinsner** - *Analog Devices Inc. - SVP, Finance & CFO*

Well, I think clearly this is true probably for any product. You ship in a certain unit volume, by the time it goes through all the supply chain steps along the way to the end consumption, there is always losses. I don't pretend to know exactly what this customer experiences along that supply chain, but I'm going to guess that it is below what we're shipping. So there is certainly a little bit of a disconnect there and that probably means that when you look at the end customers' end demand, we're going to be shipping at a higher unit volume than that.

The other thing I'd point out is that when you look at the ramp -- I think this is true in a lot of the consumer customers. They tend to ramp up in advance of the launch, just because they want to have a lot of inventory ready to go for when the demand happens and they always have this kind of trajectory that says, okay, it's going to kind of ramp up in it. It ramps down in the first quarter sequentially and then picks back up in the -- maybe it levels off in the second quarter and picks back up in the third and fourth quarter.

I think the way this trajectory is going is the way and we dealt with this consumer customer in the past is exactly the way it always goes with this consumer customer. So it's not abnormal, it's not different than anything we would have expected. Obviously you have the challenge of how successful their product is and you got to kind of read the tea leaves and [watch their] forecast to us and modulate the supply chain based on what you're seeing. But it's looking pretty much exactly as we had anticipated going into it. Now we were obviously cautious and that's partly why the guidance is a little bit more cautious, because we thought we weren't sure and a couple of weeks of orders shifting from one quarter to the next, it would be meaningful in this case and we don't want to provide a range that wasn't an achievable range. And so we hedged our battle a little bit there, but I think it's pretty much as expected.

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**John Pitzer** - *Credit Suisse - Analyst*

And then Dave I know you're not going to give specifics around ASPs, but just hypothetically speaking, does your content scale with screen size as you think about watch versus phone, the smaller form factor phone versus the larger form factor phone. And if this application proliferates into other products, will you expect there to be some sort of linear scaling to screen size on the Force Touch application?

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**David Zinsner** - *Analog Devices Inc. - SVP, Finance & CFO*

Honestly, I don't know the answer to that. I suspect that different screen sizes would require different solutions. I don't know whether that means multiple chips or that the same chip with a different algorithm or different architecture. I don't really know that. I would -- I guess we're just hopeful that as this technology proliferates at this customer, we benefit from it in some capacity as they roll it out further.

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**John Pitzer** - *Credit Suisse - Analyst*

I think one of the things that's kind of hurt the perception that your big -- customer concentration is at the time that this customer's been ramping some of your other businesses also have been somewhat cyclically depressed. Can you talk a little bit about just the broader macro read around your industrial auto and infrastructure business?

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**David Zinsner** - *Analog Devices Inc. - SVP, Finance & CFO*

That's a good question. Let's start with industrial. Industrial I'd say in the second and -- or rather the third and fourth quarter has been a little bit weaker. It's not surprising; I think a lot of the guys have supplied on a broad-line basis to the industrial market have seen weakness. The advantage I think we've actually done a little bit better I think and that's because our aerospace and defense business has really carried the load there for the last couple of quarters. And a lot of it is due to the acquisition of Hittite. So, Hittite came to us at exactly the right time when it comes to industrial, because it really did help kind of manage the volatility in the industrial business.

I would say at this point, industrial has kind of stabilized and the guidance that we provided for the first quarter was really kind of normal seasonality and really when you look at the third and fourth quarter, it was within the seasonality range but was on a weaker side of seasonality. So, I think that's a positive and we talked to our main distributors and some of our big industrial OEMs. We get the feeling that we'll see growth there. It might not be huge growth, but we kind of track along GDP lines and I think that's what they're expecting. I think we'll kind of track along with them.

In the automotive business, that business was, kind of hung in there in the fourth quarter. It is also expected to be down sequentially kind of mid-single digits. But again that's pretty seasonal for us and I think that business is in pretty healthy shape despite data points out there that would suggest maybe it would be a little bit weaker. It looks fine to us and then the real wild card in our business ironically has been the communications business. That business has been up over $200 million a few quarters ago and as China kind of stalled out as they go through this investigation of fraud and then really in North America, things have kind of softened a bit for one reason or another.

We saw kind of a pretty rapid decline partly declining because demand declining and partly declining because now everyone suddenly had inventory. They didn't need to have to kind of work that down. It looks like [it troughed at about]

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**John Pitzer** - *Credit Suisse - Analyst*

Dave, you mentioned earlier Hittite, which was an acquisition you guys did about a year and a half ago or is it longer than that?

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**David Zinsner** - *Analog Devices Inc. - SVP, Finance & CFO*

In 2014.

**John Pitzer** - *Credit Suisse - Analyst*

So great acquisition. Great asset. I wouldn't say it's subscale but you clearly have a bigger footprint than they do. Are you starting to see revenue synergies there? Is that something that's still on the come because of just the long design cycles and if it's the latter, help us understand how we should expect the growth rates in Hittite start to look as you can leverage that IP through your footprint?

**David Zinsner** - *Analog Devices Inc. - SVP, Finance & CFO*

Yes. I tell you that that business has done great for us. It was flat with the prior year, 2015 was flat to 2014, but they were [40% exposed to] the wireless infrastructure space, which was weak for us and they really rallied through it partly because they were also a portion of our defense business that's really doing well. So they really had a great result in 2015 from the defense business. So we're very happy with it from -- in terms of what it achieved for us, just in terms of revenue that it provided and then we got all the synergies we expected. So from accretion perspective, it hit or it checked all the boxes.

The real synergy that we really care about is the revenue synergy obviously and most of these products that Hittite did are kind of long cycle time between when you start to design and when you ultimately get revenue. I mean it is definitely years particularly in defense and instrumentation, which are areas that they are heavily focused on. But the way we track it is just looking at the opportunity pipeline, watching the conversions into what we call design-ins, which ultimately convert into design wins, which ultimately convert into revenue and it's tracking way better than we expected.

I would say the buzz we got from our customers and from our sales people was tremendous on this and they were really excited about it. And we started winning things in terms of opportunities like right out of the gate. And then on top of that, we've rolled all those products into distribution. So distributors can put that as part of the line card and the distributors were really excited about having that. It was kind of a hole in there. They're offering that they couldn't provide that. So they've done a great job I think on top of our design activity, adding additional design activity that I think will ultimately translate into revenue.

So we'll see how all this plays out; it takes a long time before it kind of works its way through, but I think we'll get our synergies earlier and at a higher level than we originally anticipated.

**John Pitzer** - *Credit Suisse - Analyst*

I'm going to put you on spot a little bit. Does anybody try to quantify them because clearly when you initially made the bid for Hittite, as part of your valuation calculation, you had to have some expectation of the longer-term growth rate for Hittite. And it's coming in better. I'm just kind of curious you quantify that.

**David Zinsner** - *Analog Devices Inc. - SVP, Finance & CFO*

What we thought we could do is we could bend that curve by 2% relative to what they were growing at. I'd say it's -- we're probably mid-single digit percentage, maybe in high-single digits, ultimately, if you look at it over a long enough period.

**John Pitzer** - *Credit Suisse - Analyst*

Successful with Hittite, talk about your M&A strategy from here. (inaudible) sort of find really good IP, bring it into your company. Is there a need or desire for you guys to try to do M&A around scale and clearly given your footprint in converters, would scale around power be something that you would look at or help us understand the M&A strategy from here?

**David Zinsner** - *Analog Devices Inc. - SVP, Finance & CFO*

Well, we ask customers all the time and I think for us what drives a decision around M&A is around what do the customers want, what do they want us to do. I'd say when you start talking to them about things that are more about broader catalogs and more scale, we get kind of a tepid response to that from customers. What they really care about for us is that we can provide technology that helps develop systems for them, that's more than what we can do today. And Hittite was a perfect example in a lot of areas. Let's take instrumentation, instrumentation we were providing a lot of the signal processing, but they needed microwave. It was an important component.

So we can now provide that and they were begging us to do it. This was a big deal for them. So those are the areas that I think we'll focus on, is power a part of that. It hasn't been a significant part of that over time (inaudible) but that remains to be seen. I think there are lots of other parts of the signal processing and even beyond that in terms of algorithms and software that would make more security. That would make our systems more robust that I think most of which will be able to do organically. Some of which we won't be able to, and those are the areas we're going to focus on for acquisitions. We're not looking for broken companies that we got to roll up our sleeves and fix, we're looking for companies that are already performing at a high level, like Hittite was that we can turbocharge and perform at an even higher level.

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**John Pitzer** - *Credit Suisse - Analyst*

Is there any questions from the audience? Dave I'll continue. Industrial is sort of catch all phrase for a lot of semiconductor companies, and tongue-in-cheek definition of industrial is, it goes -- in places we are not quite sure where to go. And I think you guys probably have 13 or 14 different sub-buckets within Industrial. One point autos was the sub-bucket of industrial and it got large enough to actually be broken out. I guess help us understand within industrial, one of the sub-buckets you think that are most likely to be kind of the next big enough bucket to maybe be a standalone break-out on your P&L?

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**David Zinsner** - *Analog Devices Inc. - SVP, Finance & CFO*

Yes, that's a good question. Well, we even have an industrial other, which is the catch all of the catch all. So there is these broad, really broad ones that I think will be tough to define like factory automation and instrumentation that I think will always be just grouped into that at industrial bucket. But healthcare is an area that we're going to see an evolution towards clinical grade vital signs monitoring at the home; at the doctor's office that I think could be a big market.

Healthcare business for us has been growing at a pretty good clip and there is an opportunity to see that potentially be broken out over time. Ironically, I think, aerospace and defense might be one that we might want to break out over time, given how much it's grown. And then lastly, I'd be remiss if I didn't mention the one that everybody likes to talk about which is IoT.

IoT for us is tough to define because it touches all those markets and some of the other markets that we serve. But there are probably some ways to pivot there and talk about that business in a way that I think helps investors understand the magnitude of what we've got. I mean that is several hundred million dollars of revenue right now and we're really just getting started into that space.

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**John Pitzer** - *Credit Suisse - Analyst*

Dave on the medical side, how many years out before we can get medical grade into things like what I'm wearing in my wrist today?

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**David Zinsner** - *Analog Devices Inc. - SVP, Finance & CFO*

Good question. The leading OEMs that are focused in that, I would say have a plan that would get them there in the kind of 2018, 2019 time frame. Now whether they get there and they get the adoption and they get all of -- whatever approval they need to get, we'll see how that goes. But at least from a targeting perspective, that's where they are focused on. What will be interesting I think is some of the ones that are actually -- those are the big OEMs that already focused in healthcare. What will be interesting is some of these OEMs that are more consumer oriented, and that's one of the reasons why we have to participate in consumer, because very likely they could move up into the clinical grade part of the market as opposed to some of these larger OEMs kind of moving into it or holding it.

So we're obviously in some of those devices and we're in some of the OEMs that want to be in clinical grade vital signs monitoring and hopefully those companies are successful too and that will make the business even bigger.

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**John Pitzer** - *Credit Suisse - Analyst*

Great. With that we've run out of time in this session. I want to thank Dave and everyone in the audience for participating this afternoon. Dave, thank you.

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**David Zinsner** - *Analog Devices Inc. - SVP, Finance & CFO*

Thank you.

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