

Analog Devices “Enabling the Internet of Things” Investor Webinar
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OPERATOR: Good morning ladies and gentlemen and welcome to the Analog and IoT Semiconductor Call Series featuring Analog Devices. At this time all participants have been placed on a listen only mode. We will open the floor for your questions and comments after the presentation. It is now my pleasure to turn the floor over to your host, Tore Svanberg. Sir, the floor is yours.

MR. SVANBERG: Yes. Thank you Anthony and good morning everyone. And, welcome to the second call of the Stifel Analog and IoT Semiconductors call series. As you know we were on about a month ago featuring another company. Today I am pleased to feature Analog Devices who is going to be going through a detailed presentation talking about their IoT business. And then, more importantly, we'll also have a Q&A session at the end. So, with us from Analog Devices we have Dave Zinsner who is the Company's Chief Financial Officer, Martin Cotter who is the Company's Vice President of IoT and Healthcare, and Ali Husain who is the Company's Treasurer and Director of Investor Relations. So, the particular format of this call, we're going to turn it over to Ali to give us a very brief introduction, then Martin's going to talk about Analog Devices' IoT business, and then after that we'll open it up for questions. So, with that, again, thank you everyone for participating and I'll turn it over to Ali.

MR. HUSAIN: Great. Thanks Tore and thanks everyone for joining us here this morning. And, frankly we're excited to have this opportunity to be talking about ADI's positioning relative to what we think is going to be a pretty big mega trend. IoT is already a sizeable capability at ADI today and what we'll try to do during the session is to outline the opportunity available to us and the steps we're taking, and have already taken, over the course of many years to position ourselves to grab the coming opportunity.

Our conversation is really going to be focused on the long term drivers of the business. We're not really going to be talking about near term trends since that really isn't the subject of today's webinar. And, for those of you that are just dialing in we've made a slide deck available to sit alongside today's presentation. I think it's a great idea if you wanted to use that to follow along with us today.

As Tore mentioned the format will be as follows. I'll quickly provide a brief overview of ADI for those that are new to the story. Then Martin, who leads our IoT and Healthcare divisions will tell us about how ADI is positioned to help create value for our customers. And, finally we'll turn it back over to Tore for Q&A so callers on the line can ask questions of either myself, Martin or Dave.

We have to go through some important disclosures here before we start. Please note that the information discussed today will include forward looking statements. Actual results may differ

materially from these forward looking statements as a result of various factors including those discussed in our most recent 10Q. These statements reflect our opinion as of the date of this webcast and we undertake no obligation to update these forward looking statements in light of new information or future events. Our comments today may also include non-GAAP financial measures which we have reconciled to their most directly comparable GAAP financial measures in our earnings releases which we posted on our IR page at investor.analog.com. All right. So, let's get started.

Slide 3

Let's turn to slide three in the IoT slide deck where there is an overview. Analog Devices, we were founded in 1965, 50 years ago in fact. And, that's a pretty good testament to the sustainability of our innovation. There are very few companies around today that were around 20 years ago let alone 50 years ago. Our annual sales in fiscal 14 were around \$3 billion. We're a company with over 9,000 employees in 23 countries selling over 20,000 products to over 100,000 customers. Our core capability is that we help our customers bridge the gap between the physical world, where we all live, and the digital world. And so, really, the investment thesis in ADI is: if you believe that the world is going to become more connected and more intelligent, which we believe it will, then the world needs more sensors to capture evermore real world data. All that data needs a bridge to get over to a processor so something can be done with that information. So, when we think about that bridge between the physical and digital worlds the sort of bricks and mortar of that bridge, are data converters and high performance amplifiers and as you can see in this chart here on the bottom left ADI has about half the market in each of these two key product categories. We lead the market by a pretty meaningful margin. So, as it turns out, ADI is actually pretty good at building these bridges that connect the real world to the digital world.

Now, one of the things we hold at our core is this concept of diversity. And, by that I mean diversity of products, customers and markets. On the top right of the slide you can see that this notion of diversity and sticky products means very long life cycles for our products. In any one quarter we generally have over a third of our revenue that's being derived from products that in fact were released over ten years ago. So this really creates a very sustainable and wide moat around our business. It also allows us, by virtue of a very capex light model, to generate a lot of free cash flow. Our free cash flow yield these days is hovering around 6%, and we're committed to returning 80 percent of our free cash flow to shareholders. In fact, since 2004 as you can see in this chart we've returned over \$7 billion dollars to shareholders either through dividend or buyback. The future for ADI certainly also looks bright and that's one of the reasons why we wanted to have the call. So, that's my overview for ADI. I'll turn it over to Martin now and for the folks on the line that means turning to slide four.

Slide 4

MR. COTTER: Thank you Ali and good morning everybody. Thank you Tore. Thank you for hosting this call. I'm the Vice President of ADI's IoT and Healthcare divisions and as you will see we're very excited about the great opportunities that this mega trend is creating for ADI. When you look at the first two waves here: The first wave being mainframes going to servers and then

creating this great cloud evolution. The second being PCs going to laptops and this great smartphone and tablet initiative. These waves were strong exponential growth drivers for connections, but the third wave is this wave of ubiquitous sensing. Everything and everyone is being instrumented. This measurement phenomena is really ADI's heritage, and the great news about this wave is that it puts us right at the center of this connected IoT world. We see these instrumented devices as combining many sensors, interpreting the data, to connect to the cloud in new ways that generate value. The connection of this measurement to analytics in the cloud is that new thing that transforms businesses. We of course have that 50 years of measurement, and are now combining it with this cloud analytics, that really has the world coming to ADI to solve these toughest problems in new innovative ways. So, that has us very excited about what's happening.

Slide 5

Moving on to slide number five. Just taking a look at what defines IoT. Really to understand IoT you have to understand the information journey which is going from sensor to the cloud defined by sensing, measuring, interpreting, connecting and analyzing. Customers tell us that we are uniquely positioned with this depth of applications insight to predict the problems that happen before they happen and create the greatest value. That is the real essence of IoT. How analytics in the cloud combined with measurement and interpretation at the node solves the most valuable problems.

We're creating this value in many ways for our customers through new revenue streams, increased efficiency and faster response times to trends that happen extracted through analytics. Customers expect that measurement to be trusted, the information flow to be trusted, and analytics to be trusted. At ADI we've been very careful to select the most important problems to apply that deep insight to.

Slide 6

So, let's take a look at our critical capabilities that we've developed on slide six. As you can see here we have all the building blocks to create the best solutions for IoT. Our leadership position in sensors and signal processing is well accepted. We're number one in converters, number one in amplifiers. What's less appreciated is our position in low power MCUs. The fact is that in microcontrollers we've invested in embedded low power MCU solutions for many years. They are typically in very big, vertical opportunities. Many competitors have a portfolio of older, high powered, 8-bit or standard product MCUs which really is not suitable for the IoT problem. IoT requires optimized MCU capabilities that ADI combines with a signal processing solution to generate the best overall outcome on what makes the difference at the node. This allows security to be embedded right at the node and right at the sensor which we will hold intact all the way through to analytics. Our connectivity solutions are tightly coupled to optimize reliability and power, and the needed transfer of data to that critical information in the cloud. It is this ability to use our applications and domain knowledge in a full sensor to cloud solution that sets us apart from competition. Many can optimize any one of these building blocks but customers tell us that the capability to optimize this full solution sensor to cloud is what makes the real difference and we apply this in ever innovative ways to solve the customer's problem.

Slide 7

So, taking a look at slide number seven we see how we're transforming businesses. This transformation of business creates the real value. Early adopters like Wearable and Home Automation are happening now and we're a part of that. But, the real value is how we transform industries. IoT is about new business models. Many businesses at the top of this chart here have high capital expenditure costs and even higher operational expenditure costs making up that total cost of ownership. Our goal in IoT is to transform these business models, reducing the total cost of ownership through greater insight to create higher value. A classic example usually given is the airline industry. Traditionally, people sold aircraft, airlines bought aircraft. Now, they lease engines and they lease thrust. That's an instrumented engine transforming what was once a very high capex industry to a higher value overall opex industry. The great news for ADI is that these industries in blue are where ADI has the strongest position and we are ready to capitalize on this movement to that opex disruption.

One example is Smart Factory, applying vibration sensing combined with very fine precise analysis to a machine in a factory can predict, for example, a ball bearing wearing ahead of time and make sure that the machine never shuts that factory down and delivering higher efficiency, higher output, and cost savings.

Now, think about the future of Healthcare. Today, 60 percent of hospital beds are associated with the top five diseases. Managing those diseases prolongs life, improves lives, and saves cost. With aging populations the healthcare business model has to change. ADI's ability to measure heartrate, mobility, oxygen levels, blood pressure, all connected with a cloud platform allows us to manage disease that will deliver better health at lower costs.

Slide 8

Moving on to slide number eight. We've been busy delivering some real solutions to shape the future of IoT. We took our fabrication plant and instrumented it. The goal being to predict any machine failure and use this data as a real test case, to solve our customers' machine health problems. The results have been very encouraging; our instrumentation costs were a fraction of the value we generated in terms of the savings.

For Smart Building we've developed a solution for first responders. This is a case in a catastrophic event, for example, if there's a fire in the building. The goal is to instrument that rescue worker with a proprietary network. We can tell the position of the worker, the activity as well as reports on the vital signs that allows the all-important intervention when needed.

In Smart City we've developed an occupancy sensing solution that won the Best of Sensors award at the World Expo. This is an integrated, low power, imaging solution that tells where people are, the movement of people, the movement of traffic, or in a city it can tell you where parking availability is. This allows municipals to optimize the most precious resources in a city.

In Healthcare, our success in wearables will transform healthcare as we execute on our

ambition to generate clinical level solutions for mobile health.

To see a bit more on these please take a look at our website that's on this chart at www.analog.com/loT and you'll see many solutions as we develop and mature them.

Slide 9

Just moving on to slide nine. Looking at today's IoT solutions many talk about it as being -- deploying sensors everywhere and transferring all the data to the cloud. Most of this data, it turns out, is discarded. It's not used. Our view is different. So, the IoT of tomorrow takes that deep insight into the best measurement. We couple that with the interpretation intelligence right at that node that allows better prediction of behavior which in turn we can act on. This is the most optimized total solution. The partitioning to have intelligence at the node will have the most value decision the earliest giving us lowest power, lowest delay, and fastest response time. This is key for those markets in Smart Health, Smart City and Smart Factory.

Slide 10

Going to slide number ten. Understanding IoT value is about understanding that information journey from the measurement of data to information transmitted over the network, which generates knowledge and wisdom. The connection between the node on the left to the analytics on the right is the key to that value. We have taken that data capture measurement -- capability, sensing, power, measurement, and connectivity that we've been doing for 50 years -- and added algorithms from our applications and domain knowledge. Those algorithms transform that information efficiently from that measurement at the node to extract deep patterns and insight through the power of cloud analytics allowing us to predict behavior. The goal is to preserve that extra insight connected to the cloud so that the predictive value comes right back into the application. That's why we've been investing heavily in software and algorithms committing to that insight that comes from the cloud right back to the node.

Slide 11

Just taking a look at the deeper capabilities. We talked in previous investor conferences about ADI's "More than Moore" strategy that is fundamental to the best signal processing solution. That capability, it turns out, is even more important in the IoT world. It combines MEMS sensors, precision, high speed signal processing, different voltages, different memory types, passives, and now adds software and algorithms -- targeted at that optimized solution to solve that particular problem. To solve these toughest problems, these highest value problems, you must optimize that full solution securely and in a trusted manner.

Slide 12

Going on to slide number twelve. That great silicon capability has now moved and drawn us up into a higher level. Success at that solution level draws us above the silicon into that full cloud solution. This is our "More than Silicon" capability. We have made acquisitions in efficient predictive algorithms with our acquisition of Lyric and in predictive energy modeling, with our acquisition of Metroic to accelerate this value.

As you can see, this IoT world is not done by a company on its own. We have a host of great partners allowing us to implement full cloud solutions and leverage those analytics. Whether it's algorithms or cloud services, these partners help us to develop that full solution. We view the ability to deploy IoT services as a revenue multiplier. That service goes beyond silicon allowing an even deeper level of engagement with customers, creating more specialized solutions that last over a long time.

Slide 13

Now, taking a look at the next slide, the all-important revenue piece. When we look at the connected sensor definition, not surprising we've been doing this for a long time, and we've generated hundreds of millions of dollars with healthy single digit growth rates going back to 2010. Most IoT businesses today is really about selling more sensors and signal processing, which we are benefitting from, and we continue to benefit from. But, as those industries of healthcare and industrial kick in, with more transformative business models, we will see that growth accelerator. ADI of course is perfectly positioned in these areas to benefit from that accelerator. The knee of the curve is unsure, but we're seeing that design pipeline there. So, this is what has us so excited.

Slide 14

Looking at slide 14 just to give a summary of our view on this space. We are seeing the opportunity presented to us due to our leadership position in that full solution of sensing, measuring, and interpreting – together with our algorithms and software that we have developed in our over 50 years – now benefitting from that insight from analytics. This heritage is what has given us the deep application knowledge and domain insight that has customers inviting us in to architect solutions with them, ahead of what was possible before that predictive analytics capability.

We're committing to investments in those key areas, adding those algorithm, software, and cloud capabilities to solve the toughest challenges. That result is ADI's innovations are transforming real businesses – Healthcare businesses, factories for industrial and cities. So, that was our brief view of IoT. Thank you for your attention and I welcome any questions.

Q&A

MR. SVANBERG: Yes. Thank you very much Martin. Fascinating stuff. Before we open it up for questions to everyone on the phone I'd like to ask a few questions first if I could. And, it looks like ADI's IoT business is already quite fragmented as a sort of typical ADI style. But, if we look at the next 12 to 24 months are there any new applications or new business units that you're seeing perhaps a little bit of a faster adoption?

MR. COTTER: What you can see I guess Tore, we have early signals from what would be wearable devices, and some adoption of that insight we talked about into solving machine health. We're also seeing quite a movement in Smart City. In terms of how quickly these move; each of those industries have their own time constant. So, what you'll see in the next few years is that various different market segments will move at different rates. But, I think the

foundation of the technology is what we're most excited about. We are seeing that wearables define more mobile health, and we're seeing the insight into industrial define things like Smart Cities, even things like Smart Agriculture, and of course we talked about Smart Machines.

MR. SVANBERG: Very good. The other question I had, Martin, is and this is something that I hear from investors quite a bit. There's concerns that in IoT that eventually the hardware gets sort of commoditized and all the value is going to be in the software and the services. Obviously hardware could mean a lot of things but it certainly does include semiconductors. So, how would you respond to that concern?

MR. COTTER: That's a great question. I think there many people have that view of IoT as being 50 billion connected devices, but it turns out that a lot of those connected devices have data that doesn't have a lot of impact. Our view is there are difficult problems to solve and there's a value that analytics brings to solving those really difficult problems. So, in those cases, having the ability to extract the deep insight of the measurement is what makes the difference. While there will be commoditization of some segments -- this is going to happen -- we believe that the industrial and healthcare spaces, where we're most focused in, have attributes that are very different. And, that's where our picture of deep domain knowledge connected to analytics is what really is different.

MR. SVANBERG: Very good. And, moving on to the topic of software. And, not necessarily customer software. But, your software approach. And, you talked about that in your slide on "More than Silicon". This is obviously a very fragmented space. So, there's going to be some customers that will rely on your software. Some companies would obviously have their own library stack. Where do you stand as a company with your own software as far as helping thousands of little industrial customers? Do you feel like you have a robust offering today? Or, is that still an area that you're investing in?

MR. COTTER: Yeah. In that space there we obviously have quite some history ourselves in terms of developing algorithms that are very tied to that measurement solution. The broader software that you talk about, we leverage a lot of external partners. Whether it's some cloud partners, or in some cases, it would be software stacks that come with processors for example. So, ARM would be an example. We have quite a lot of use of different suppliers of technology but with our DSP heritage we have some software capability. The bigger aspect of software in terms of generating, obviously, ease of use is one aspect which we leverage external partners, but the bigger aspect that we are investing in organically ourselves would be that domain knowledge and the algorithms connection to the applications problem itself. We leverage externally some software to be able to connect and to be able to get to cloud solutions and have very strong internal investment in terms of algorithm software to be able to enhance that measurement capability to affect analytics.

MR. SVANBERG: Very good. And, the last question that I have before I open it up for questions is if we look at the -- the building blocks -- and you obviously identified what those are. And, ADI has all of them. I would actually think that the big investors would probably be surprised by

your low power microcontrollers. Obviously you're not a merchant vendor of low power MCUs, but you embed them. But, the one area that I haven't heard ADI talk a lot about is connectivity. So, I was just hoping that you could talk a little bit about ADI's capabilities there. And, perhaps as a follow up to that question is; is there really a chance that IoT semiconductors move into a SoC to the extent that you would really have to have all those building blocks and then integrate them all to one chip?

MR. COTTER: Yeah. That's a great question. The position of ADI in terms of RF and connectivity is obviously very strong. We completed an acquisition of Hittite last year. You look at the era we are at in terms of sub-gig and RF up to six-gig and we now we can stretch right up to over 100-gig in terms of technology. So, RF capability, as you get to 5G type networks, you stretch up into the tens of gig in having to have connectivity. We see ourselves very, very well placed.

Secondly, I think when you look at the requirement in IoT, having radio solutions that are very flexible is what makes the difference. No one radio standard will be the dominant one. There are many different standards that you need to address. I think we see ourselves in sub-gig and in the 2.4-gig space as being well positioned. We are of course continuing to build that out, but overall I think we feel pretty strong about that.

MR. SVANBERG: And then on the SoC?

MR. COTTER: On the SoC we have the "More than Moore" strategy that is all about optimizing the solution for the node that is the best place for that solution to be. So, that's a combination of that partitioned integrated radio, which we're strong in, combined with perhaps an MCU which is implemented at very low power, connected in a package or an optimized solution with something that's on a different node, or even a different technology that will be the sensor. We don't believe that optimizing the SoC on its own is enough. We think you need to couple the insight of the sensor to the measurement and the transmission to optimize that whole solution. And, of course, the extra piece of it is the algorithms knowledge of that insight, affecting an algorithm in the cloud, really, is where the value is generated.

So, we will not sit on one node. We optimize the solution depending on where the piece is required and we have that whole spectrum of technologies to apply between MEMS, sensors, signal processing, higher voltages, and in some of those cases, to the integrated spaces, that augment that measurement and get you to that cloud analytics. So, we feel pretty strong in terms of the overall capability set and we feel that the diversity of technology is a huge strength.

MR. SVANBERG: Very good. So, with that thank you very much Martin. I'm going to open it up to questions from the participants on the phone.

OPERATOR: Thank you. Ladies and gentlemen, the floor is now open for questions. If you have any questions or comments please press star one on your touchtone phone at this time. Pressing star, two will remove you from the queue should your question be answered. Lastly,

while posing your question please pick up your handset if listening on speaker phone to provide optimum sound quality. Please hold while I poll for questions. Our first question is coming from Ryan Carver from Voya. Your line is now line.

MR. CARVER: Thanks for taking my question. Just a quick one on sort of the way that maybe investors are looking at the IoT. I mean, I think it's been a really good buzz word. But, sort of showing how it manifests out in terms of revenue has been I think a tough thing. How do you guys think about being able to sort of segment out, quote unquote, "IoT," revenue? In this last slide you talked about this sort of growth accelerating. I mean, how much is it going to be differentiated in terms of like a really bucketable IoT versus just maybe an incremental growth driver within another segment? Be it industrial, or auto, or test and measure. I guess is there potential for this idea that IoT has this large growth to be somewhat disappointing but manifest itself in an acceleration within another end market bucket?

MR. ZINSNER: Okay. This is Dave by the way Ryan. So, I'll take a crack at this and Martin or Ali can chime in if they'd like. I think you're right in that we have end market businesses, and actually internally we hardly ever really mention IoT because it's somewhat amorphous and doesn't really define what we're doing. At the end of the day these are solutions that are tailored to individual markets. So, a lot of it, as Martin talked about, will find its way into industrial applications and that will be a key driver of the broader industrial growth. Some of it will find its way in the healthcare verticals and that will drive healthcare growth. And, of course we have at this point some traction in the consumer space and that obviously helps drive the consumer business. And so, we really, in fact, we don't actually necessarily measure this collectively. In fact, in order for Martin to come up with a number here, which we didn't even feel comfortable posting, we had to kind of piece together all the areas where we provide this sensing, analytics, and connectivity and pull that all together and come up with a total. It's in the hundreds of millions of dollars. But, to define it specifically is very difficult.

But, I do think this market is important because the trend of virtually every customer we're talking to is that they need to find different revenue streams for themselves. They need to lower the cost of operation for their end customers in a lot of cases, and this idea of using sensing together with analytics and bringing it at some point up to the cloud, and doing more analytics around that is an important part of the way they are going to generate new revenue streams and the way they are going to generate lower costs of operations for their customers. So, I do think this is a macro growth driver and will be a driver of the growth which will ultimately manifest itself for us hopefully in this 2x to 3x GDP growth rate that we're looking to achieve.

MR. COTTER: I agree Dave. That's the exact way to think about it. What we're most excited about is, it's not the picture of 50 billion devices we talked about, but it's more how these solutions are transforming those really important businesses. So, a lot of people I think have disappointing pictures of growth because they track just those number of what might be for example a lot of consumer low value sensors. But, our position is very different. We see this as solving real problems in those businesses Dave talked about.

MR. CARVER: Great. And then one last question for Martin. You mentioned that at the node a lot of the data is compiled at the node and even some of the data that is available is perhaps not collected. How do you think about the trend of that going forward in terms of being able to collect or utilize more data that's generated at the nodes? Do you think that that's a function of the processing at the nodes improving? Is it a matter of the connectivity from the nodes to maybe a central processing getting faster? So, like a centralized data repository can then handle that more. Or, do you not see the collection of data or the growth of data at the node level is necessarily going to increase over time?

MR. COTTER: Great question. I think, obviously everything is being instrumented. More data is being generated. We could choose to transmit all that data, but the simple fact is the power that would take is not worth that data being transmitted because a lot of it can be turned into information right at the node. Simple example: You could take an ECG signal, transmit every piece of that signal, and then try to determine what the heart rate was and what the condition was in a cloud. Or, you could run that algorithm at the node, transmit the heart rate, transmit stability, and transmit those vital insights into the signal, which gets you more information at much lower power and much better response. So, I think that's the difference.

A lot of solutions to this point have just been simple – transmitting all the data. The real difference is going to be made when you take the insight of that measurement and transmit just the information. You save a lot of power on that transmission and you also get a lot more reliability in transmitting what's really needed. So, I think the partitioning of that information journey is a key part of the value that's going to be created. When we've looked at some of these applications we can see very efficient ways of solving those problems that have value we talked about.

MR. SVANBERG: Anthony, do we have other questions?

OPERATOR: Yes. Our next question is coming from Evan Wang from Stifel. Your line is now live.

MR. WANG: Yes. Hi. Thanks for taking my question. A lot of people are very concerned about security when it comes to the internet of things, devices and networks. Could you just talk a little bit about what kind of work you're doing in that area? And, how are you stacking up against your competitors?

MR. COTTER: Yeah. So, I think the security requirements here are central to what's needed. The real problem is solved by driving security right back to the sensor. And, that's our mission. When you look at doing things like device authentication at the beginning when something gets booted up you need to make sure that it is the right function, right sensor, and right place to be so that security tag gets held intact all the way through. So, I think we are committed to implementing the highest levels of security not only in the micro but all the way back to the sensor.

There's a possibility that we'll be able to take the fingerprint of whatever's being sent. There is always a signature of what's being sent. We are the ones who know how to measure and know how to sense so I think we can go further than the typical security and be able to even identify a particular person in some cases, or a particular object. That's the ultimate in terms of security. Getting that real connection to what's being measured and getting it as close to what's being measured as possible. So, we're obviously using a lot of our technology in terms of microcontroller to implement security at each of those stages. That's pretty exciting that we're able to maintain that trust from the sensor right to analytics in terms of security when a lot of others can't.

MR. WANG: And, my second question is about your growing emphasis on software. Does that change your business model in any significant way?

MR. COTTER: The requirement of software, obviously when you look at the picture we've talked about with extra services, we are seeing the possibility that in some businesses as they transform there will be revenue that would come to us from having that software capability. Now, it's not proven. Right? So, the timeline and the real proof of those capabilities is unsure. We have gone ahead and taken some real solutions ourselves and we're right now testing what kind of business models best work. There's no magic to picking a particular way to monetize. The key piece of it is the value that's generated. We do recognize that our business will change similarly to our customers' business models will change, and we just have to be ready to match that change. So, while it might generate services revenue it might just be monetized on high value sales of our products or it might also be monetized over a long time service contract. It could be many of those ways. Maybe Dave wants to comment more.

MR. ZINSNER: Yeah. The only thing I would add is that we have had instances even now where we sell our embedded algorithms into the hardware and of course that algorithm doesn't carry a cost of sales component to it. So, it ends up being very, very high margins and really drives the gross margins of the end product up quite a bit even from what normally is relatively high margins or gross margins that we get. So, if anything, from at least from a financial model perspective, I see this as being beneficial to the gross and operating margin story.

MR. WANG: Thanks.

OPERATOR: Our next question is coming from Robert Harrington from Espalier Global. Your line is now live.

MR. HARRINGTON: Hi there and thank you for doing this call, this is very helpful. So, as you sort of step back -- from an investor point of view we go to conferences and there are some companies that want to explicitly talk a lot about IoT and try and breakout potential revenues like Silicon Labs and so forth. And, that can be helpful. And there are companies -- a competitor of yours like TI who almost don't want to talk about the theme and kind of laugh when IoT itself explicitly comes up. How do you -- and I appreciate what you're saying in the sense of -- if you were to aggregate all of the revenues together it would be in the hundreds of millions of

dollars. But, it's really more important about how it drives your individual businesses like consumer and medical and so forth.

But, when you think about your approach to IoT versus your peers like TI or Linear or so forth, would you view your kind of -- the message is really we're doing similar things and we're in the game and don't forget that we are very focused on this? Or, would you really want a position that you're kind of -- you're trying to attack the market or come to the market a little bit differently?

MR. COTTER: Yeah Robert it's good that you bring up that question. You can see the picture like we described a little bit. A lot of the position today has many devices that are used to connect and send. Most of our competitors talk about that part of the business. Which is very important to us as well. So, we're very happy to participate in that part of the business, and we will obviously plan to continue to do that. We do think about IoT a little differently I think than some of those competitors, and that comes from the discussions we've been having with customers. They draw us in to have these discussions on using the cloud to solve problems differently, and that's what we're so excited about.

We don't really see the need to call out IoT separately. As Dave described we've got lots of diverse businesses that are just benefitting from this new capability. So, we see the future being those problems we solve from that capability. We are obviously going to be happy to sell more sensors, more silicon, but the really interesting thing which some of the competitors don't talk about is that impact in terms of the overall business that solving those difficult problems makes.

MR. ZINSNER: Yeah, I think I'd just add -- you pretty much hit it. But, I think when it comes to signal processing we are kind of the 800 pound gorilla. And so, that's where we think in reality these IoT like applications, particularly the high value ones, are really defined. Because, capturing whatever real world phenomenon needs to be captured and analyzing it, is really the key component of those solutions. I think from our standpoint, I think we're in the pole position in products where that's important and I think that's how I would differentiate us from some of the other analog players -- particularly the ones that tend to come at the market more from a power perspective.

MR. HARRINGTON: Okay. That's very helpful. Thank you guys.

OPERATOR: There appear to be no more questions from the phones at this time.

MR. SVANBERG: So, Anthony I actually had a few more questions before we sign off. And, the first follow up question is really on that last question there. When I look at all the different building blocks, I mean admittedly there are competitors that obviously know how to do low power micros and so on and so forth. But, I think that the one area where ADI really stands out is on high precision data converters. And, I've sort of heard in the past that that's ADI's crown jewel. So, could you please talk a little bit about that and how important is that for your IoT

business? I'm sure the industrial customers really love that. But, if you could just elaborate on that, that would be great, please.

MR. COTTER: Well, as you can imagine it's absolutely critical because the capability to measure the best of the sensor and to get the extra piece of insight out of that, that's really the difference. Many of these problems have a variety of different contributors to the insight to get to the solution. Precision electronics is the key to the measurement – that's the key to the application. Coupling that with the sensor and now augmenting it with those long term trends by getting the insight back into the node; we believe that's fundamental.

That's why I think it's a combination of that "More than Moore" strategy with all of those variety of precision, different voltages, even different elements, that's what really allows these innovative new solutions to be delivered to solve the problem. So, we think this is a natural place for the world to come to. Our position has people coming to us and asking us to architect these new solutions. So, we're very excited about that aspect, it's based on a lot of the history of precision, a lot of the history of the insight into the sensor, and in many cases we couple it with some extra processing, even some high speed processing, but we do believe that is fundamental.

MR. SVANBERG: Very good. And, my last question just coming back to the ADI IoT revenues just a clarification. So, I think you mentioned that you've had some businesses growing in the mid-single digits. And, IoT will sort of help you grow those ten percent plus? Is that the way I should look at this? Or --

MR. ZINSNER: Well, are you saying will IoT grow ten percent plus or will the businesses grow ten percent plus?

MR. SVANBERG: No -- no -- no IoT will help some of those businesses accelerate their growth to perhaps even more than ten percent.

MR. ZINSNER: Yeah. I think that's fair. It would probably be sub-segments obviously. I wouldn't necessarily predict industrial in total is going to grow more than ten percent. But, there are sub-segments within that market that could be more heavily focused on sensing, connectivity, and analytics that I think do have that opportunity.

MR. SVANBERG: Very good. Anthony, I don't know if there are any other questions. I don't have any questions. So, with that I'll just turn it back to ADI to see if they have any closing comments.

MR. ZINSNER: Well, the only thing I would add is I would just like to thank all of you for taking the time to learn a little bit about this. I'm sure as you kind of digest all of this and think through the ramifications of this relative to some of the peers you might have additional questions. I would encourage you to reach out to Ali and the IR group, and we can certainly arrange follow up conversations with anybody that might be curious about our capabilities in this area. We thank you again for taking the time today.

MR. SVANBERG: Yes. Thank you Dave and thank you also to Martin and Ali for joining us on this second series for IoT calls. If there's one thing that I would leave you with as far as ADI and their position in IoT is really this "More than Moore" capability. I've thought about it more, I've looked at it more, and I think the "More than Moore" really summarizes really what ADI's contribution is in the IoT space. So, with that thank you everyone for participating. I wish you all a great weekend. And, we'll see you all on the next call in about 30 days. Thank you very much.

MR. ZINSNER: Thank you.

OPERATOR: Thank you ladies and gentlemen. This does conclude today's teleconference. You may disconnect your phone lines at this time and have a wonderful day. Thank you for your participation.

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