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ADI - Q4 2017 Analog Devices Inc Earnings Call

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OVERVIEW:

Co. reported 4Q17 revenue of $1.54b and non-GAAP diluted EPS of $1.45. Expects 1Q18 revenues to be $1.44-1.54b and non-GAAP diluted EPS, excluding special items to be $1.20-1.36.

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PRESENTATION

Operator

Good morning, and welcome to the Analog Devices Fourth Quarter and Fiscal Year 2017 Earnings Conference Call, which is being audio webcast via telephone and over the web. I'd like to now introduce your host for today's call, Mr. Ali Husain, Treasurer and Head of Investor Relations. Sir, the floor is yours.

Ali R. Husain - *Analog Devices, Inc. - Director of IR and Treasurer*

Okay. Good morning, everybody. Thank you, Jennifer. Good morning, everybody. Thanks for joining our conference call. You can find our press release and relating financial schedules at the usual place at investor.analog.com. With me on the call today are ADI CEO, Vincent Roche; ADI's CFO, Prashanth Mahendra-Rajah; and Mike Lucarelli from Investor Relations.

First, let's get through our disclosures. Note that the information we're about to discuss, including our objectives and outlook, includes forward-looking statements. Actual results may differ materially from these forward-looking statements as a result of various factors, including those discussed in our earnings release and our most recent 10-Q. These forward-looking statements reflect our opinion as of the date of this call, and we undertake no obligation to update these forward-looking statements in light of new information or future events. Today's commentary about ADI's fourth quarter and fiscal '17 financial results will be detailed further in our 10-K, which we expect to file over the next few days.

In addition, note that ADI's fourth quarter and fiscal '17 financial results and short-term outlook will include non-GAAP financial measures when comparing our results to our historical performance. Special items are also excluded from the prior quarter and year-over-year results. Available reconciliations of these non-GAAP measures to their most directly comparable GAAP measures and additional information about our non-GAAP measures are included in today's earnings release and in our web schedules, which we have posted under the Quarterly Results section at investor.analog.com. Our web schedules also include a historical view of what the combined ADI and Linear Tech would have looked like by end market, by quarter for the last 3 years. And lastly, please note that our outlook for ADI's first quarter fiscal '18 includes an additional week, so fiscal 1Q '18 will be a 14-week quarter and is expected to include 1 normal week of revenue expense.

Okay. So with that, I'll turn it over to ADI CEO, Vincent Roche. With the exception of fourth quarter revenue, Vince's comments about our financial results are on a non-GAAP basis and exclude special items outlined in today's release and in our web schedules.

Okay, Vince, it's all yours.

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

Thank you, Ali, and a very good morning, everyone. I'd like to firstly welcome Prashanth to ADI. This is, as you know, Prashanth's first quarter as our CFO, and I'm really delighted to have him join ADI.

Turning to the quarter. The fourth quarter fiscal 2017 was another very successful quarter for ADI, and I'm pleased to share our results with you this morning. Revenue in the fourth quarter totaled $1.54 billion and was above the midpoint of guidance as the communications and consumer markets led our sequential growth, while the industrial and automotive markets were stable to the prior quarter. Our strong overall revenue performance, coupled with disciplined operational execution, expanded gross and operating margins and drove diluted earnings per share to $1.45, which was above the high end of our guidance. And I'll provide you with a historical perspective.

Over the last 5 years, ADI has doubled its revenue base to $5.2 billion, expanded operating margins by over 900- basis points to approximately 40% and nearly tripled free cash flow generation on a combined company basis to $1.9 billion or 34% of sales, which is within the top 5% of all S&P 500 companies. From a strategic perspective, 2017 was a watershed year as we completed the acquisition of LTC, further deepening and widening our competitive moat, expanding our capabilities in high-value signal processing and power management applications and giving ADI the ability to more completely serve the ever-expanding needs of our more than 100,000 customers. ADI is now able to solve customer problems from sensor to cloud, from DC to 100 gigahertz and from nanowatts to kilowatts with a leading market position in all product segments.

Fiscal 2017 was also marked by strong execution across our portfolio of products and customers. For example, in the industrial market, which represented 46% of revenue in fiscal '17, our battery formation and test equipment solutions experienced both cyclical and secular growth as we gained additional dollar content in our customer systems and added new customers in this expanding market, which is forecasted to grow 5x by 2022.

The factory automation sector also grew strongly during the year as customers made both brownfield and greenfield upgrades to manufacturing equipment. Here, ADI's technology solutions are enabling value creation for our customers by helping reduce plant downtime, boost productivity and make manufacturing more flexible and configurable.

In health care applications, our optical sensor-based solutions also grew strongly over the prior year led by vital signs monitoring and imaging applications.

In the automotive market, which represented 15% of revenue in fiscal 2017, we made excellent progress on the promise of autonomous driving with new innovations in radar technology, where our solutions provide superior range and resolution capability beyond anything available in the market today. And in automotive infotainment applications, we hit an important milestone for our A2B audio bus solution, surpassing 1 million units shipped in the year across platforms of many automotive OEMs, including Ford.

The communications market represented 18% of revenue in fiscal '17. Within this market, we have experienced a tenfold revenue increase over the past 4 years for our software-defined radio solutions, which have become the market leader from macrocell, massive MIMO and small cell.

The consumer market represented 21% of revenue for the year and also grew strongly, led by portable applications.

As we often say, luck favors the prepared minds, and we've been preparing and investing for this moment for many, many decades. And across our business, we are creating, capturing and retaining value by leveraging our culture of innovation to solve our customers' biggest and most pressing challenges.

Building on a very strong 2017, we believe we can continue to drive long-term profitable growth by investing at the cutting edge to grow our core franchises and by extending our reach with our customers.

So with that, I'd like to turn the call over to ADI's new CFO, Prashanth. In his short time here, Prashanth has hit the ground running, providing me and the organization with his keen strategic insights. And I'm very confident that with his operational focus and financial discipline, we will increase shareholder value further.

Prashanth Mahendra-Rajah - *Analog Devices, Inc. - Senior VP of Finance & CFO*

Thank you, Vince. Good morning, everyone, and let me add my welcome to our fourth quarter earnings call. I'm very excited to be joining Analog Devices and to be joining Vince's leadership team. This is a company with tremendous legacy of innovation, and I look forward to helping to drive the business and deliver against our long-term financial model.

In my 8 weeks here, I've been deeply impressed with the quality of ADI's technology, the dedication of our employees and the depth of our customer relationships. I have met many of you by phone already, and I look forward to getting on the road and meeting you in person.

Now getting to our results. As Vince mentioned, the fourth quarter of 2017 was an excellent period across multiple dimensions and caps off a very strong year. As I walk through the P&L, with the exception of revenue and non-op expense, my comments will be on a non-GAAP or adjusted basis, which excludes special items outlined in today's press release.

Revenue for the fourth quarter was $1.54 billion, up 6% sequentially and above our guidance midpoint. Gross margins were 40- basis points higher than our guidance, primarily on higher utilization and cost synergy capture. Inventory was stable at 108 days in the quarter. And on a dollar basis, inventory increased $31 million sequentially as we ramped production to match strong demand. Distribution channel inventory of 7 weeks was stable to the prior quarter as well on both a weeks and a dollar basis.

Operating expenses in the fourth quarter were $435 million or 28% of revenue, which improved operating margin to 42.6%. Non-op expenses in the fourth quarter were $67 million, and we should see this decline by $2 million to $3 million per quarter for fiscal '18.

Our fourth quarter non-GAAP tax rate of 9% included a full year true-up to bring the 2017 rate to 9.6%. But as we look to 2018, we expect a 12% tax rate, which is an improvement versus our previously issued guidance of 15%.

EPS for the fourth quarter was $1.45, bringing the full year to $4.72, up $1.65 from the prior fiscal year.

Free cash flow generation was very solid in the quarter at $630 million with an associated free cash flow margin of 41%. And during the quarter, we paid down $350 million of debt, which has helped reduce our net debt-to-EBITDA ratio to 2.6, down from the 2.9 in the prior quarter.

Capital additions in the fourth quarter were $65 million, and we expect capital additions in fiscal 2018 to continue to run at our model of approximately 4% of sales.

During the quarter, we paid $167 million in dividends with an associated quarterly cash dividend of $0.45, representing an annual dividend payment of $1.80 per share. All in, a good quarter to wrap up a solid year.

Let us now turn to our outlook and expectations for the first quarter of fiscal '18, which with the exception of revenue, are also on a non-GAAP basis. We are planning for revenue in the 14-week first quarter to be in the range of $1.44 billion to $1.54 billion. We expect a full week's revenue benefit from this 14th week as it falls in the last week in the month of January. Adjusting for the additional week and at the midpoint of guidance, Q1 revenue is expected to decrease sequentially. On this same basis, we expect ADI's B2B markets of industrial, automotive and communications in aggregate to decrease in the mid-single-digits sequentially in the seasonally slower first quarter but to be up over the prior year, led by the industrial end-market. Given that our revenue guidance by end-market is not perfectly correlated with our actual results, this will also be the last quarter in which we provide our revenue outlook by end-market. Of course, we will continue to guide you to an overall revenue range.

We are planning for gross margins to remain relatively stable sequentially and to be in the range of 70.5% to 71%. Operating expenses are estimated to be in the range of $440 million to $450 million and include an additional week's worth of activity related to the 14-week quarter. On a 13-week basis, operating expenses are expected to decrease in the mid-single-digits sequentially.

Based on these inputs, we expect operating margins in the first quarter of 2018 to be in the range of approximately 40% to 42% and for diluted earnings per share, excluding special items, to be in the range of $1.20 to $1.36.

So to wrap it up, this was a terrific quarter of performance and wraps up a very strong year of revenue growth, margin expansion, EPS growth and free cash flow generation. Looking ahead, we're encouraged by a number of positive indicators across our business, including the strong secular growth drivers, a robust opportunity pipeline and access to customers at an unprecedented level, which, combined with our strong free cash flow and commitment to deleveraging, will continue to drive value for our shareholders.

Now before we move to the Q&A, I have an additional announcement. To help continue the successful integration of Linear Tech, I am delighted to announce that Ali Husain has accepted the position of CFO for ADI's Power division, supporting Steve Pietkiewicz and will be relocating with his family to sunny California. Vince and I would like to take this opportunity to thank Ali for the tremendous work he has done with the investment community, and we look forward to working with him in this new role to drive even greater shareholder value in the future. Moving forward, Mike Lucarelli, whom many of you already know from his work with Ali over the past couple of years, will be your main point of contact in IR. I have enjoyed getting to know Mike over the past few weeks as someone who is both energetic and knowledgeable. I'm sure you'll find Mike to be a great resource for your investment research on ADI.

And so with that, I'll turn it over to Ali for our Q&A session.

Ali R. Husain - *Analog Devices, Inc. - Director of IR and Treasurer*

Great. Thanks, Prashanth. It's been a privilege working with the investment community, and I look forward to this new challenge.

So all right, let's get to the Q&A session. (Operator Instructions) So operator, let's get to our first question.

QUESTIONS AND ANSWERS

Operator

(Operator Instructions) Our first question comes from John Pitzer with Crédit Suisse.

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

Vince, Prashanth, congratulations on the strong results. Ali, congratulations on the new role. My first question, Vince, is just around industrial year-over-year growth. I think, clearly, one of the investor concerns out there is that, that part of your business has been growing at greater than 20% for several quarters consecutively, and I think there are some concerns around sustainability. Last quarter, you sort of highlighted some one-offs that helped to drive some of the strength, including things like ATE. Were there one-offs in the October quarter? And I guess, more importantly, as you look out over the next several quarters, how would you expect year-over-year growth rate to trend? And what sort of the more normalized growth rate we should suspect as being sustainable?

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

Yes, good question, John. Thanks. I think -- let me start with the last part of the question first about sustainable growth rates. If you look back over the last 5 years of our business, we've had a growth rate in 2017 that was well beyond 20% in the industrial sector. But actually, when you aggregate over 5 years, the growth rate was around 5%. And I think that is a sustainable number and the way to think about the long-term growth trajectory for the industrial business. So then looking into '18, how do we view things? Well, I think, for sure, the strong GDP environment bodes well for the industrial business, number one. I think also we're seeing good growth drivers. I've had the benefit of speaking to many executives of many of our industrial customers over the last several months, the last few quarters, and what I can tell you is that the activity in building out the industrial IoT, I talked in the prepared remarks about the brownfield upgrade in America, for example, the greenfield build-outs in China, all these things, I think, are good secular growth drivers that have many, many years of legs to them, particularly, I would say, in China. And added to that, John, we're seeing, for example, the emergence of these rechargeable batteries everywhere, in cars, obviously everybody knows about smartphones and so on and so forth. But the formation and test of those battery systems is quite a great performance challenge and an area where we see a lot of opportunity to bring precision technologies to market. So I think you've got to be skeptical to some extent. I think there are -- it's -- are those growth rates sustainable? Yes. I think on a 5% level, they are. But my sense is heading into '18, we should be able to hold the gains. I guess the only cautionary tale, if is there is one in the industrial market, is the world of ATE. But again, there, what we're seeing is the -- for example, the shift from hard disk drive to solid-state memories, the building out of these giga memory factories and giga factories in general to support consumer goods. So I think when you put everything together across instrumentation, aerospace and defense, factory automation and instrumentation in general, I think we're in for a good cycle right now.

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

Maybe as my follow-on, just on the consumer side, it was a lot stronger than expected in the October quarter. I wonder if you can give us some color on what was driving the strength. And I know, Prashanth, in your prepared comments, you mentioned you want to stay away from giving guidance on an ongoing basis by end-market. But during the Analyst Day this year, you kind of gave fairly specific guidance for all of fiscal '18 on consumer, and as we think about your differing content in flagship phones and how that might look into the January quarter, is there any help you can give us on what we should expect to see out of consumer, at least relative to seasonality going into January?

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

Yes -- well, our consumer business in the quarter was ahead of expectation. It was at the high-end of our expectation, and it was clearly driven by portable applications. And as we signaled at the Analyst Day, we're expecting our consumer business to be done in 2018 largely on the back of a weaker portable market, portable business for ADI. And you're already starting to see that weakness in the guidance that we're now providing. So I think at the midpoint of guidance, if you take '18, the prediction for '18, we expect consumer to be down meaningfully over 2017.

Prashanth Mahendra-Rajah - *Analog Devices, Inc. - Senior VP of Finance & CFO*

John, I will only add that if you take the guidance we've given you, you adjust for the 13th quarter, which is the first calculation, and then you back out the B2B guidance we've given you, you should be able to impute the consumer guide and you'll come up with a pretty meaningful number, which is the trend that we've been indicating for the past several quarters is starting to materialize.

Operator

Our next question comes from Craig Hettenbach with Morgan Stanley.

Craig Matthew Hettenbach - *Morgan Stanley, Research Division - VP*

So I had a question on the automotive market. You highlighted 1 million units of A2B. Can you just talk about kind of the breadth of that? I know you mentioned before, but just kind of design -- breadth of design and how you see the trajectory in A2B.

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

Craig, virtually, all the OEMs across the globe have adopted A2B. And we just basically got our steam going in 2017 largely in the U.S. and, to some extent, Europe. So we're at the very, very early stages. We're not at the knee of the curve yet, so to speak. So I expect a hockey stick in the A2B market over the next 3 years, and it will ramp in '18 and '19. And I think we'll be at some significant, sustainable level of revenue in the 2020 time frame. So it's -- we're in the ramp phase, but I think it's very meaningful that we've already shipped 1 million units into production models at this point.

Craig Matthew Hettenbach - *Morgan Stanley, Research Division - VP*

Got it. And then as my follow-up for Prashanth, what are the key areas as you kind of step into the CFO role there, key areas of focus for you and opportunities you see going forward?

Prashanth Mahendra-Rajah - *Analog Devices, Inc. - Senior VP of Finance & CFO*

Sure. Thank you. So certainly, my primary goal is going to be ensuring that we deliver against the financial model that was communicated over the summer. That means we need to grow our revenue, convert that revenue into high profit dollars and then deliver that profit as cash flow growth to pay down our debt. I would say equally important will be to work collectively with the 3 division presidents to ensure the successful integration of LTC, to achieve both the revenue and the cost synergies that were underpinning the deal rationale. And then maybe last, I think Vince had mentioned in prior calls that I've been chartered with working with the division leaders to really uncover and capture opportunities for trapped value to help drive shareholder value. That includes areas that I've already begun working with the organization on such as pricing.

Operator

Our next question is from William Stein with SunTrust.

William Shalom Stein - *SunTrust Robinson Humphrey, Inc., Research Division - MD*

I'm hoping you can characterize lead times and book-to-bill in the quarter that's being reported and compare them to the prior quarter.

Prashanth Mahendra-Rajah - *Analog Devices, Inc. - Senior VP of Finance & CFO*

Sure. Yes, I can help you with that. So as I mentioned, activity remains fairly stable. So on a book-to-bill basis at the enterprise level, just a hair under 1 as we head into the first quarter, and then if you back out consumer, some slight expansion versus that. However, the -- as I mentioned, the channel still looks very stable at around 7 weeks and equivalent on a dollar basis. So we're heading into the holiday season, but from where we stand today, given the somewhat limited visibility that this industry has, things look to be stable.

William Shalom Stein - *SunTrust Robinson Humphrey, Inc., Research Division - MD*

Okay. One other as a follow-up, if I can. I'm hoping you can offer some competitive commentary on the converter market in light of one of the field programmable gate array companies highlighting this product they call an RFSoC that they indicate is taking share in the converter market. If you can comment on that.

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

Yes. Look, as is the dynamic in the business world, good markets are always going to attract competition. And I think competition in the converter market in general has been really consolidating over the last 5 or 7 years, so -- but we've got a 5-decade history of building high-performance analog solutions for our customers across the board in areas like wireless infrastructure, wired infrastructure and other important areas like aerospace and defense, civil aviation and so on. And what I can tell you for sure is that as the OEMs deal with ever-increasing technology complexity, our customers in the area of these communication systems, in particular, where a lot of the very, very high-speed data converter products are used, they need a very broad array of microwave, of RF mixed-signal technologies and, of course, power technologies. And it's really about smartly partitioning their solutions for performance, for power efficiency, for footprint and last but not least, cost. And we have a multi-decade history of not only delivering on all aspects of those performance dimensions across the board, but also, we've been delivering a broad suite and array of converter products for many, many years on time with very high quality, and last but not least, great support at the application and system level. So there will always be competition, but our portfolio is unmatched in our industry irrespective of whatever configuration a customer is using. So there will always be competition, but it's our job to stay ahead right on the cutting edge of what's possible.

Operator

Our next question is from C.J. Muse with Evercore.

Christopher James Muse - *Evercore ISI, Research Division - Senior MD, Senior Equity Research Analyst and Fundamental Research Analyst*

I guess, first question, as you think about the extra week in January, do you expect that to be equally apportioned across all segments? Or do you think 1 or 2 will do better than others? And I guess, as a follow-up to that, how do you think about normal seasonality heading into the April quarter?

Prashanth Mahendra-Rajah - *Analog Devices, Inc. - Senior VP of Finance & CFO*

Sure. So C.J., that extra week is just the calendar consequence of how the ADI fiscal is run. So it comes around every 5 to 6 years. It will be equivalent across all industries. And since it falls sort of in the month of January, I would not expect anything out of the ordinary for that. But I would remind everyone that as you build your models going forward into Q2 that you do want to adjust your sequential growth rates to reflect that you're moving from a 14-week into a 13-week quarter.

Christopher James Muse - *Evercore ISI, Research Division - Senior MD, Senior Equity Research Analyst and Fundamental Research Analyst*

Okay. And then I guess as my follow-up, I guess to kind of follow on, on John's question around the sustainability of industrial strength year-on-year, can you kind of walk through as you look back on '17, how much of the strength was sort of a reset to GDP versus replenishment in the distribution channel versus rising silicon content? How do you think about those 3 factors in terms of 20-plus percent growth?

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

Well, yes, in times -- in terms of rising silicon content, I think there's no question there is more sensing, more measuring being applied to factory automation and process control machines, so we benefit from that. Something that doesn't get talked about as much is the automation of labor in China, and that's going to be a multiyear build-out. And many of our European and Japanese customers, in particular, are benefiting from that build-out. But that will be -- that's part of the China 2025 initiative, so that's very significant and will be for a long time to come. And I think -- look, there's certainly an anxiety around supply out there, so clearly, a certain amount of the demand is driven by anxiety. But I would say, when you look across our channel, you look across our customer base, inventories are up somewhat. Our inventories are up a little, but we're building inventory on the basis of what we believe to be real demand. So I think this is very much a demand-driven cycle. And I think when you look at the inventories across the board, things are in pretty good balance at the moment.

Operator

Our next question is from Stacy Rasgon with Bernstein Research.

Stacy Aaron Rasgon - *Sanford C. Bernstein & Co., LLC., Research Division - Senior Analyst*

First, on the guidance for next quarter. The B2B corrected for the extra week down mid-single-digits. It seems to be a bit worse than I would consider normal. Is there anything specific across your 3 businesses, I guess, relative to what we'd ordinarily see as we go into Q1 that's driving that maybe a little worse than normal seasonality?

Prashanth Mahendra-Rajah - *Analog Devices, Inc. - Senior VP of Finance & CFO*

Well, I would say, Stacy, that when you look at that on a year-over-year basis, even guiding B2B as we did, is still pretty healthy growth year-on-year. So that gets you almost to high single digits, low double digits.

Stacy Aaron Rasgon - *Sanford C. Bernstein & Co., LLC., Research Division - Senior Analyst*

Yes, but industrial is up like 25%, right?

Prashanth Mahendra-Rajah - *Analog Devices, Inc. - Senior VP of Finance & CFO*

Sorry?

Stacy Aaron Rasgon - *Sanford C. Bernstein & Co., LLC., Research Division - Senior Analyst*

The industrial is up like 25% year-over-year, so I mean, what's going on sequentially?

Ali R. Husain - *Analog Devices, Inc. - Director of IR and Treasurer*

Stacy, in the first quarter, if you back into the guidance, industrial would be up in the mid-teens. And the B2B markets, as Prashanth mentioned, are forecast to be up in the high single digits over the prior year in the first quarter on a 13 -- to 13-week basis. So into a quarter, that is typically lower on a seasonality basis, particularly for industrial given that you have the holiday period for the factories.

Stacy Aaron Rasgon - *Sanford C. Bernstein & Co., LLC., Research Division - Senior Analyst*

But I mean, you always have a holiday period in that quarter, right?

Prashanth Mahendra-Rajah - *Analog Devices, Inc. - Senior VP of Finance & CFO*

Correct. I'm just saying on a sequential basis.

Ali R. Husain - *Analog Devices, Inc. - Director of IR and Treasurer*

Yes, I mean, C.J. -- sorry, Stacy, we're headed into a seasonally weaker quarter. We read the order flows and we provide you with a guidance range that we think is reasonable. You can choose to take the midpoint of that range. It creates a high single-digit growth in the B2B markets over the prior year. That's the best we can tell you. The other thing I'll point out is we did beat the midpoint of the guidance in the prior quarter by 260-basis points, so we're certainly coming off of a pretty strong result. And I think the year-over-year growth rate is really what we would look to in terms of how we think about running the business and the success of our business. So I hope that's helpful. Did you have a follow-up?

Stacy Aaron Rasgon - *Sanford C. Bernstein & Co., LLC., Research Division - Senior Analyst*

I did. I wanted to ask about automotive. So it's kind of flattish year-over-year -- I mean, sequentially but also year-over-year on a combined basis with Linear, which is a little bit at odds with what we're seeing from some peers. It also maybe sounds like a little bit at odds with what you're seeing on your A2B market and the growth in there. So can you talk a little bit about the auto dynamics, in particular, on a year-over-year basis? When does it start to grow? And what's been going on this last year?

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

Sure, Stacy. So yes, yes, okay. So if you look at the legacy ADI business during '17, that part of our automotive business grew in the high single digits. Where we had some headwind was specifically because of the continuing battery management weakness in the LTC portfolio. So that whole BMS thing, that whole markets is highly concentrated in terms of customers and programs. So really, what we're seeing is still a working off of the inventories in China, but the pipeline that we have in BMS designs is good. And so we see that business recovering during '18 as several of these new customer programs start to come online. So I think by the end of '18, we'll be on a good growth track in that business. But that is the primary dampening effect, if you like, on our automotive business. And as we said at the Analyst Day, we expect this business to grow at 2 to 3x SAAR, and that's still our commitment.

Operator

Our next question is from Mark Lipacis with Jefferies.

Mark John Lipacis - *Jefferies LLC, Research Division - Senior Equity Research Analyst*

If you look at the operating margins, they've expanded over -- by about 450- basis points over the last year, 950 bps over the last 3 years. And I was wondering, is there a physical limit to the margin profile here? Is there any reason why they would not continue to drift up over time?

Prashanth Mahendra-Rajah - *Analog Devices, Inc. - Senior VP of Finance & CFO*

Mark, I would probably take you back to the financial model, and that's the -- that's where we have modeled out how this business is going to -- is expected to operate over the next several years. So we have some favorability movement now. We've talked about utilization rates. We've talked about bringing in synergies a little earlier than possible. But I would say that the way to think about it is to really hold us with -- to that model because that's how -- the standard we hold ourselves to.

Mark John Lipacis - *Jefferies LLC, Research Division - Senior Equity Research Analyst*

And a follow-up, if I may. The -- if you look at previous industries that have consolidated, you do see an upward bias on -- or better pricing environment. The analog industry has been consolidating. You guys have been an important driver of that. Can you describe -- Prashanth, I know that you had mentioned pricing as one area of focus as you head into this opportunity. Can you describe what you have been seeing on the pricing environment over the years? Are there -- are you noticing changes?

Prashanth Mahendra-Rajah - *Analog Devices, Inc. - Senior VP of Finance & CFO*

Yes, Mark, I'm going to let Vince take that since he has a bit longer perspective on pricing and the trends that we're seeing.

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

Yes, I think it's true to say that, certainly, consolidation has helped to stabilize prices across the industry. We're also seeing stabilization partly because of the environment in which we are working, but also because we're paying a lot more attention to getting -- understanding where there's elasticity and just basically holding onto the value that we generate better. So I think it's a trend, and we're certainly seeing a stabilizing trend across our business over the last 2 or 3 years, and I believe that stability will continue.

Prashanth Mahendra-Rajah - *Analog Devices, Inc. - Senior VP of Finance & CFO*

And Mark, I would only add from my personal observation, is we -- there's a broad section of the ADI portfolio that is very sticky. And we need to ensure that we take advantage of that to ensure that we're getting fair value for the value -- for the technology that we bring to our customers, and that could represent some pricing opportunities.

Operator

Our next question is from Tore Svanberg with Stifel.

Tore Svanberg - *Stifel, Nicolaus & Company, Incorporated, Research Division - MD*

Congratulations to Prashanth and to Ali. My first question is on communications. So it's starting to grow nicely year-over-year again. I was just hoping you could add a little bit more color on what's driving that, especially in relation to topics like 4.5G, 5G, optical and so on.

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

Yes, sure, Tore. So the communications business, as you know, is driven by 2 primary sectors. We've seen wireless infrastructure particularly strong. It was up over the prior quarter and driven by demand in developing regions like India, for example, but also in more developed markets like North America and China. We've seen both macro and small cell strength. And I'll give you a little more color in terms of technology in a second before I -- after I make a comment on the wireline side of things. So it's well known that the wireline business, particularly the optical part of that, has shown weakness in China over the past year. So that's been the damper there. I think the wireless sector is going to see some good growth in the coming 3 to 5 years. And I'll give you a little bit of color on that. As I see it, the -- there's good activity still on 4G, heavy activity in 4.5G, and 5G is in trials right now. But I think the boundaries between 4.5 and 5G are bloating to some extent. Both of them are going to be based on massive MIMO, and the indications are that, that market is going to start to ramp in the latter part of 2018, into 2019 and won't hit peak until 2020. But as I said, we're seeing, for example, activity where customers, our existing customers, are targeting at extending life of 4G systems. So there's activity in upgrading 4G, introducing 4.5G and getting 5G into play. So as I said, I think with all the demands for mobile data, we're still working hard on the classical problems of integration, design agility, power consumption. And with our LTC, the acquisition of LTC, we have a very strong power portfolio. So we're in a better and better position as a company to take advantage of these trends across the board. So whatever the configuration that customers use in 4, 4.5, 5G, ADI is very well prepared to satisfy our customers' needs.

Tore Svanberg - *Stifel, Nicolaus & Company, Incorporated, Research Division - MD*

That's very helpful. And for my follow-up for Prashanth, so you talked about utilization being up sequentially. Can you talk about where you stand on utilization today? And maybe more certain, in general, where you are on in-house versus outside outsourcing at this point, especially given some of the fiber capacity that's out there at the wafer level?

Prashanth Mahendra-Rajah - *Analog Devices, Inc. - Senior VP of Finance & CFO*

Yes, sure. Thank you. So I think your first question is utilization levels. So Q3 -- sorry, excuse me, Q4 was a significant improvement for us in utilization. We don't share specific utilization percentage rate, but it's fair to say that we were extremely busy internally in our fabs. And on the balance between now that we have the LTC operation in -- consolidated, we're about 50-50 split between what we do in-house and what we give to third parties or our channel partners.

Operator

Our final question comes from Ambrish Srivastava with BMO.

Ting Pong Ho - *BMO Capital Markets Equity Research - Associate*

This is Gabriel Ho calling in for Ambrish. So I'm just looking at the core, ADI business is up 14% year-over-year, and then your Linear is up 5%. So what is driving the differences in year-to-year performance? And also going forward, how should we think about maybe the 2 business to come work as you integrate the 2 businesses?

Prashanth Mahendra-Rajah - *Analog Devices, Inc. - Senior VP of Finance & CFO*

So -- I'm sorry, I did not catch your name.

Ting Pong Ho - *BMO Capital Markets Equity Research - Associate*

This is Gabriel Ho.

Prashanth Mahendra-Rajah - *Analog Devices, Inc. - Senior VP of Finance & CFO*

Gabriel. Sorry, sorry. Thank you, Gabriel. All right. So I would say a few things. First, LTC's industrial business grew double digits year-over-year. So that's very much in line with how the peers are doing. The automotive business, Vince has already spoken to. The inventory unwind and what's happening there. So overall, we're comfortable with where LTC is. I think, historically, an investor pain point for LTC has been their focus on managing the business for gross margins versus a balance of revenue growth, and that is part of what the integration process is driving and bringing them into ADI's mindset about profitable growth to deliver the EBIT margin and the free cash flow. So as we look forward, I think that's very much into what we look to merge with the organization is to bring that top line focus into LTC, which, for some of the organization, hasn't been as strong as in ADI.

Ting Pong Ho - *BMO Capital Markets Equity Research - Associate*

I see. And as a follow-up, I think now that the 2 businesses are combined, I think setting the 13-, 14-week quarter aside, so how should we think about in general the seasonality of your business for each quarter on a quarterly basis going forward?

Ali R. Husain - *Analog Devices, Inc. - Director of IR and Treasurer*

Yes, Gabriel, I'll just take that. I think the way to think about it is that the ADI and Linear Tech B2B markets actually behave quite similarly on a seasonal basis. And what I would encourage you to do is we placed a schedule on our website that tracks the end market revenue by quarter for the combined companies and suggest that you can go back and calculate what you think seasonality would be because going forward, it's our sense that these 2 businesses, certainly in the B2B markets, track actually pretty similarly.

So okay. I hope that was helpful. Thank you again for joining us this morning for the call. A copy of this transcript will be available on our website. And all the reconciliations and additional information can be found on the Quarterly Results section of our Investor Relations site at investor.analog.com. So with that, thank you for joining us, and have a Happy Thanksgiving, everybody.

Operator

This concludes today's Analog Devices conference call. You may now disconnect.