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# EDITED TRANSCRIPT

ADI.OQ - Analog Devices Inc at Evercore Semiconductor &  
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**Prashanth Mahendra-Rajah** *Analog Devices, Inc. - Executive VP of Finance & CFO*

## CONFERENCE CALL PARTICIPANTS

**Matthew Patrick Prisco** *Evercore ISI Institutional Equities, Research Division - Associate*

## PRESENTATION

**Matthew Patrick Prisco** - *Evercore ISI Institutional Equities, Research Division - Associate*

So hello again. I am Matthew Prisco semiconductor analyst at Evercore ISI. And I'm joined today with Prashanth Mahendra-Rajah, CFO of ADI; and Michael Lucarelli, VP of IR.

ADI, a leader in the high-performance analog arena with best-in-class exposure, some of the industry's strongest megatrends over the coming decade, including electrification, safety, industrial automation, digital health care, just to name a few. So we're honored to be hosting this fireside chat as one of Prashanth's last hurrahs as CFO of ADI before riding off into that sunset after 6 very successful years. So thank you both for joining us today.

As for formal to the chat, I have a number of questions to run through, but we'll save some time at the end for audience Q&A if there should be any. But given the intense focus on cycle today, I would like to open with few more near-term questions.

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## QUESTIONS AND ANSWERS

**Matthew Patrick Prisco** - *Evercore ISI Institutional Equities, Research Division - Associate*

To kick off, the magnitude of the guide down last quarter, I think, caught many off guard. And now we're looking at ADI revenues down 6%, 7% in '23 and '24 versus peers closer to flattish this year up mid-single digits next year on average. So what do you attribute as the primary factors driving this delta? And what are the factors that would drive -- that would close this gap in performance relative to the Analog group?

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

Sure, sure. So before I begin, thank you guys for joining us. As Matt said, this is going to be one of my last ones. I did want to say that with some of the organizational changes here, we were questioning whether we'd actually come today. But we decided that -- and for those of you who may not know, Matt is without a doubt, sort of the best junior analysts out there. So we told the Evercore team we would come here provided that he did the Q&A today.

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**Matthew Patrick Prisco** - *Evercore ISI Institutional Equities, Research Division - Associate*

Thank you very much for that. I appreciate it.

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

Really, if you haven't got a chance to know this kid, you should. On the question. So here's how I think about what we did. For the last year, we sort of called -- maybe was it September of last year, Mike?

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**Michael C. Lucarelli** - Analog Devices, Inc. - VP, IR and FP&A

Yes, a year ago.

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

Yes. About a year ago, we started talking about deceleration in orders and increase in cancellations. So over the last year, we've been very aggressively working with customers to encourage them to cancel orders on ADI. We knew that the backlog as happens to everybody during these -- the supply-demand imbalances, had gotten a bit out of whack. And so we were working hard to bring that down.

At the same time, we've also been expanding capacity in our fabs, limerick in Ireland as well as our Beaverton, Oregon facility where we've been putting in expansion that is partly being funded by the U.S. and European CHIPS Act. So the combination of working with customers to rightsize their orders and us improving our capacity has allowed our lead times to improve significantly. So we are now shipping 80%, 85% of our SKUs within a 13-week lead time.

And to Matt's question, how do you think about ADI versus peers? I have extreme confidence that sort of our performance is a reflection of the overall macro and lead time improvement. And why do I say that? We are an incredibly diversified business. You guys who follow us know that we are in multiple end markets and multiple geographies with a very high customer count and SKU count.

The deceleration that we've seen is very broad-based. So nothing else can really be driving that level of broad-based softness unless it's being driven really by macro factors and those macro factors really are the kind of the softening economy in U.S. and Europe, China, which is, I'm sure we'll get to is in really bad shape.

And then the improvement in lead times, which is increasing sort of customer confidence that I don't need to keep ordering on you for -- with uncertainty in the future. Now I can sort of hold off my orders until I'm sort of within that 8- to 13-week need, and then I can drop you the orders, and you'll turn it fast.

Anything else to add to that, Mike?

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**Michael C. Lucarelli** - Analog Devices, Inc. - VP, IR and FP&A

No, I think you're right, because I mean we've been improving lead times. We made a very large jump this year. And at the beginning of this year, we were about 50% within 13 weeks, now we are 85%. But really, where we saw the biggest change when we went from about 70% in 13 weeks to 85%. That change there last quarter is when we saw, like Prashanth said, broad-based customers reaching out us, like you know what, we have enough inventory. We're going to reduce our inventory because we know we can get product from you.

And it was quick and fast. And it didn't surprise us. We knew it was coming, but it is surprising how quick it came down. But I do think we did a good job working with the customer to understand what's going on, is inventory digestion or demand? And they said, well, right now, it's inventory digestion, but the demand for your products and those secular trends you talked about, Matt, are still there. So it's getting through this period of inventory reconciliation, on the other side of that is strong demand.

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**Matthew Patrick Prisco** - Evercore ISI Institutional Equities, Research Division - Associate

Got you. So given this ongoing inventory digestion and certainly uncertain backdrop, you guided the January quarter in line with normal seasonality. What's driving the confidence here to call that seasonal growth, particularly from a somewhat conservative company historically? Are there are there green shoots today in any areas that may be bottoming or upside in areas, maybe not as apparent to us?

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

Yes. I'd say 2 things. First, the January quarter guide is not going to be my responsibility. So it's quite easy for you to put a number out there. But really more practical -- I don't know that we guided the January quarter. I want to be very clear that we don't guide out beyond the -- beyond the kind of the current quarter. What we indicated was that based on what we've seen, on a 13-week basis, we would expect January to be seasonally down. And at that point, that remains our best view right now, but I wouldn't go as far as to interpret that as a guide.

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**Michael C. Lucarelli** - Analog Devices, Inc. - VP, IR and FP&A

Yes. No, I agree. Because the question on the call was about 13 to 14 weeks, I just try to help people walk through the math. Prashanth said, seasonal is down 5% and next week at 7.5%. So [calculate] the delta, that's what it would be if it was normal times. You're right to think -- in like normal times, usually, I'll say 2 things. One, inventory digestion, but two, 4Q is not usually down 12%. So our best view, as you know, is it's down, how about that, in 1Q. We'll see how much it's down. But we do think the worst is probably behind us as you go into next year.

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

That we do, that we do.

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**Matthew Patrick Prisco** - Evercore ISI Institutional Equities, Research Division - Associate

Perfect. That's helpful. So now you talked about the inventory digestion lasting 2, 3 quarters, which would imply inventory at roughly normalized levels exiting the year. So can you walk us through the visibility that you have into this dynamic, both for disti and direct and what allows to make the confidence in that goal?

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

Sure. I'm going to actually do it in 3 pieces, one that you didn't mention, which is -- so we think about our inventory as what is the finished goods that is on ADI's books, what is the inventory that is in the -- on the balance sheet of our distribution partners, [aero], Macnica, Excelpoint, et cetera, and then what is the inventory that's in our end customers, who either buy directly from us or buy via distribution.

So we had mentioned in prior quarters that we were holding more finished goods inventory on our balance sheet, keeping it a little -- keeping it away from distribution because we were having matching challenges given the supply/demand imbalance. We wanted to make sure that we did not put product into a distributor like send it to Japan and then find out that, that product is actually needed in Europe where it can't get moved as easily.

So inventory on ADI's balance sheet got a little higher than we would normally carry. We've told -- we said to folks in the earnings call that by the -- as we exit the first quarter, expect our finished goods inventory in ADI to be down. Our goal is about \$100 million.

On the distribution side, we undershipped disti in the third quarter. We undershipped kind of in the, call it, 0 to 50 range. And for the fourth quarter guide that we've given you, the \$2.7 billion, that includes another \$50 million to \$100 million under ship. So sell-through is expected to be above sell-in, which also goes back to your first question on the softness in the guide.

For the last piece, which is the hardest one for anyone to really get their hands on and that is end market inventory. What Mike's team has done is they have -- they've been tracking a data set which is looking at the sales of ADI products to ADI customers whose information is publicly available over a period of multiple years, I think 5, 6 years, something in that range.

We know -- so you pick any one of our publicly-traded customers, we know how much we're selling to them every quarter, and we know their revenue growth because that is publicly available information. So we correlate that over a very large data set. Individually, there can be always reasons why a company might be growing faster than we're growing into them or vice versa. But at an aggregate level, we see a nice correlation that our revenue growth ties to our customers' growth, which is what you'd expect.

In the third quarter, we saw that meaningfully begin to deviate. And when we take sell-side consensus for that same customer population for the fourth quarter against the implied revenue shipments we have in our \$2.7 billion guide, we see that begin to deviate even more. So that's sort of giving us the confidence at a qualitative level that end customers are continuing to sell through to -- or consume product for their deliveries, but not putting the orders on us or not taking inventory from us, which is a reflection back to the lead time comments.

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**Matthew Patrick Prisco** - *Evercore ISI Institutional Equities, Research Division - Associate*

Very clear. In a typical cyclical backdrop, the upturns and downturns, always faster and steeper than expected. So with that said, how do you think about ADI's positioning from a revenue perspective into this eventual upturn, given unique characteristics of this cycle? Would it be as steep as the past given the secular underpinnings or more muted given kind of rolling nature?

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

Yes. Well, I'll let Mike talk to the business side. I will say from a company's income statement side. What you should be looking for is as we have taken the OpEx spend down. As we've indicated in the call, we'll take roughly \$50 million out this quarter, and we'll try to hold that level for the next 2 quarters.

As we've taken inventory levels down, and we have swung in to help mitigate the impact of utilization decline, when the recovery comes in, I think you'll really see kind of the goose to the profitability is we lever that pretty quickly. You'll see pretty strong op leverage.

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**Michael C. Lucarelli** - *Analog Devices, Inc. - VP, IR and FP&A*

And to your point on the revenue side, I think go back to long-term model we released about 18 months ago, I think we're very confident in that 7% to 10% long-term growth. We've been above that for a couple of years, we're below that here. I think you use that as your trend line and kind of modulate around there, we feel very good about that.

And I think we built that up from a bottoms up and tops down. We did build it in a downturn in that long-term model. So as long as it comes back year after the down, I'm very confident in that 7% to 10% because that's one thing I did. I would say when we built that model, we had a down year, but after that came back, semis do. We were down 5%, you might be up 10%, 15% the next year.

But all the growth drivers are still there. We're confident in our design win pipeline. So think about the long-term 7%, 10%, understand that this is a year of inventory digestion, which I think we all knew was going to happen after 3 years of strong growth, and then go back to that long-term growth of 7% to 10% versus historical 5% and that's a big delta for a company like ADI. If you can grow 3% faster, 8% versus 5% on a compounding business that has that much operating leverage and free cash flow, it's a great investment. That's why I think about the business over the long term.

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**Matthew Patrick Prisco** - *Evercore ISI Institutional Equities, Research Division - Associate*

Perfect. So next, I would like to shift to the pricing backdrop. A couple of weeks ago, you talked about resilient trends across markets. Makes sense given stickiness of current wins. But I think bigger question is how are the pricing conversations been going in new design discussions, which would begin to manifest in the P&L 2, 4 years out? Any signs of recalibration there?

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

Yes. So the -- I think perhaps what is least understood by investors on ADI is that our ASP -- the difference between ASPs and price. ASPs are a reflection of the value that we are creating in each generation of product, and as that product grows, then it drives mix upwards. ASPs have been on a very, very steady increase for ADI. If you go back, I think it's perhaps as far as we can track the data. So it's a very consistent trend that we -- that reflects our ability to drop more innovation into a product and then charge customers more for that innovation.

So understand that ASPs goes up. When investors talk about pricing, we think about that as pricing is if you're buying the same product in a future period, are you paying higher or lower for that same product? So the dynamics that come into play is, from a pricing standpoint, we do not change pricing to a customer on a given product once it's designed in.

Your negotiation power with us is when we're talking about the design in, and at that point, you can lean on us because you are making a key decision. Our job is to demonstrate to you the value that we're bringing. And if that works out well and we can meet in the middle, then we'll take the win and you'll have the product. But once you're designed in, you're kind of stuck with us, and we respect that. And because of that, we don't really try to drive pricing aggressively for parts that already designed in, because we know that you don't have a choice. And similarly, it's part of the partnership we have together.

When you come to your next design in, that's an opportunity for you say, hey, I have a desire to continue using your product, but I want a better price. And that's our opportunity to say, we have our next generation, which adds more functionality, that comes at a higher price. And that's where the friction happens. So while there is always asks from customers to be conscious of pricing, the flip side of that is we are always pushing the next generation or the next evolution of our product, which brings more and we want more for that.

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**Matthew Patrick Prisco** - Evercore ISI Institutional Equities, Research Division - Associate

All right. Perfect. So I guess, following on that, the ASP side historically has always been kind of increasing. But now there is a shift in customer relationships. It seems like you're working more closely as kind of criticality of semis is greater appreciated following all these shortages we've seen. So based on this evolving relationship, are you seeing any change in that ASP trend line?

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

I don't know that it's -- we have enough trend data to make a -- the ASP comment is over 1 to 2 decades. So I wouldn't want to call anything just on 24 months. I will say that we are often tracking our ASPs against SIA data which everyone has access to. So we know how we have continued to differentiate from the SIA average and SIA data all of you have access to. They just take the overall units and divide it by the -- or the revenue and divided it by the number of units that are out there. We are now, Mike, at 3.5?

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**Michael C. Lucarelli** - Analog Devices, Inc. - VP, IR and FP&A

Over 4.

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

Over 5 on SIA. So SIA, average ASP, ADI is selling at over 4x of that, which is a reflection of the value. And I think if you look at the last 2 quarters of data, I think I saw SIA -- the SIA industry average coming down, we are not.

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**Matthew Patrick Prisco** - Evercore ISI Institutional Equities, Research Division - Associate

Okay. Helpful.

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**Michael C. Lucarelli** - *Analog Devices, Inc. - VP, IR and FP&A*

I'll add one thing, you're right, overall data and ASPs, but you're right, Matt, we are working more directly with some of our larger customers. It happened even before COVID, but even during COVID, we got closer to them, all of the good markets, to talk about that. And we work more and more with the actual end manufacturers, the names you know. And then we -- we don't dictate pricing there, but when you get a design win there and then go back and talk to the Tier 1s about designing and using ADI, the price negotiations are a lot different.

And that is going to help ASPs, to Prashanth's point, and the pricing dynamic. And we've seen it in auto. We've seen our auto pricing get better, even forgetting all the cost inflation between the technology we're delivering and also working more with the end customer.

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**Matthew Patrick Prisco** - *Evercore ISI Institutional Equities, Research Division - Associate*

Got you. And one more on these evolving relationships, I think in the past, the picture has been there's better visibility now. Is that still the case now that lead times have normalized to the majority of the portfolio within 13 weeks? Are we still getting those collaborations and kind of forward-looking forecasts?

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

The reason for OEs to engage directly with ADI, and I would say most of the higher-end semi companies is because they have realized that they do not get access to the right technology or to system-level solutions when they work through Tier 1s. Tier 1s, naturally, as anyone would, solves for their P&L and that may be suboptimal at the OE level.

And I think a good example for us is a Tier 1 would never want to design in a wireless BMS system. Because the wireless BMS system takes away the opportunity for a Tier 1 to sell the OE cables and connectivity, which are very commodity products, but can be marked up with their margin. It takes away the opportunity for the Tier 1 to charge the labor rate for the technicians to go in there and plug all the cables in. I think it's a 3x, I think -- the time to wire up a battery pack for a vehicle in wired versus wireless is 3x the amount of labor time.

So again, that is all beneficial to the Tier 1. So why would you offer that as an alternative to the OE? It's better for the OE, of course, but those are the real reasons. I think getting access to the technology is why the OEs want to engage directly with the semiconductor companies. There has been much discussion about OEs thinking about supply chain resiliency, supply chain planning, better systems, all of that. And there's truth to all of that.

But when you consider the number of SKUs that go into a given vehicle, the number of different suppliers that comes, today, their systems just really aren't sophisticated enough to be able to handle that. So they use, I think, what we would consider a little more rudimentary planning, which is how much is sort of the basic inventory level I need to keep in stock. They just don't have the ability yet to do planning that far deep into the supply chain.

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**Matthew Patrick Prisco** - *Evercore ISI Institutional Equities, Research Division - Associate*

Interesting. Perfect. With the inventory digestion, I think we're at a point now, lead times normalizing supply demand coming back in balance across a good portion of the portfolio. But that said, build plans are relatively unchanged today. Is there any fear of oversupply situation over the next 3 to 5 years, which could potentially add pressure to the industry?

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

That's an outlook question. So Mike, why don't you take that.

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**Michael C. Lucarelli** - Analog Devices, Inc. - VP, IR and FP&A

You're actually on the capacity side of the equation. So for us, what are we building? We're building resiliency in our business such that we can make 180-nanometer parts, which is our most used in technology internally or externally. We want to do that so our customers have confidence of supply, both that we can do at internal at our fab in Beaverton or in Limerick or external at TSMC or different fab like UMC or Vanguard.

I wouldn't call it new capacity, it's just having the ability to swing in and out. And it's a unique capability ADI has such that in good times, we can push out to them to capture demand and in bad times, we can pull it in and help our gross margin resiliency. I think also having the hybrid model -- let's say there's overcapacity in certain nodes, having a hybrid model where you use a foundry, if pricing does come down, it's a net positive.

So being a hybrid manufacturer, meaning some internal, some external net positive because you can use both -- the pricing dynamic of overcapacity if it happens, I don't think is going to happen on the legacy nodes. But if it does, isn't that positive?

And two, what we're building out is just resiliency to do it inside or outside. And we're not beholden to doing it one way or the other. It's just where we are in the overall kind of semiconductor cycle or where we're going to manufacture the product.

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**Matthew Patrick Prisco** - Evercore ISI Institutional Equities, Research Division - Associate

Perfect. And maybe where do you stand in those resiliency and diversification efforts versus the target you outlined at your Analyst Day?

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

We are -- I believe we are going to finish the fiscal year at 40% -- yes, close to 40% of our SKUs can be made in more than 1 location. And we are on a goal by the end of '25 to have that at the 85%, Mike?

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**Michael C. Lucarelli** - Analog Devices, Inc. - VP, IR and FP&A

75%. Hopefully -- I'll say, I think it'll be before '25, exiting '24 -- calendar '24.

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**Matthew Patrick Prisco** - Evercore ISI Institutional Equities, Research Division - Associate

Okay. So well on track.

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**Michael C. Lucarelli** - Analog Devices, Inc. - VP, IR and FP&A

Well on track. Actually, if you look...

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

The only delay has been getting the tools from the semi-cap guys. That is the only delay that's been -- right? I mean obviously, there's the qual process we got to run. But we can't run the qual process until we get the semi tools, and as everyone knows, semi tool lead times have been very chocked up.



**Matthew Patrick Prisco** - Evercore ISI Institutional Equities, Research Division - Associate

Yes. So how about when we think about China specifically on this capacity dynamic? A lot of capital being deployed there largely to mature nodes now they know their swimming lane. Is that something that concerns you? And how do you think about the potential impact to ADI's portfolio from increasing China competition? Maybe what areas were defensive and what areas are more at risk in this evolving landscape?

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

Yes, there's a lot to say on China. Let's maybe like start with -- from a capacity standpoint, I think the inputs that folks have been getting on where is China investing, a lot of that comes from our semi cap peers who talk about the tools that they've been shipping into China.

And those are more lagging edge technology or trailing edge technology depending on which phrase you used. Our understanding is that most of that capacity that's going into China is going to be at 55 nanometers and smaller, 55 nanometers and smaller. 95% of ADI's SKUs are built on technologies that are 90 nanometers or larger. So very low overlap there, right?

They are -- and that may change. Clearly, as we continue to grow and progress into the future, we will be accessing more of our product portfolio on 90, 55, 40, et cetera. But today, most of that capacity in China is really at a different market point than where we are.

Second thing is that while it's our understanding that China's access to the tools has been largely subsidized or they've gotten their own government incentive programs as the U.S. and Europe have done to help the foundries like SMIC and others get -- be able to underwrite the purchase of tools, our understanding is the yields coming out of those fabs are extremely low, extremely low. I mean again, our data -- some of that data comes from investors, so I'm always skeptical about what you guys hear.

But the -- like we're talking high single digits in terms of yields. So while you don't have the depreciation expense of other large foundry players out there because you've gotten great government subsidies to underwrite the CapEx, which is your variable costs are atrociously high because you're throwing out enormous amounts of material cost and gas and et cetera to punch out chips.

Now that, of course, will get better. We all saw Global go through that same journey to get better, but it's going to take time. So I think as a general comment for the industry, I wouldn't be -- I wouldn't expect to see real meaningful share movement in China in the near term. Longer term, as yield gets better and costs can be more attractive. And obviously, they have lower margin expectations, then I think as an industry, semi -- the semi industry needs to be concerned about it.

For ADI specifically, I would highlight the incredible defensive nature of our industrial business and why that is -- that will always remain the least attractive market for competitors to enter. And that comes from -- we have thousands of SKUs that are spread across thousands of different customers, all at relatively low quantities.

So when you focus on kind of that -- whether it's China or another competitor thinking what are the sockets I want to go after, you want to go after high-volume sockets with a smaller number of customers. Those are the easiest ones to do. And clearly, we saw that personally with Huawei and ZTE. We had a 5G transceiver that it made economic sense to try to find a solution or a Chinese alternative to our 5G transceiver because you can have enormous volume off of a small number of designs largely to 2.5 customers.

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**Matthew Patrick Prisco** - Evercore ISI Institutional Equities, Research Division - Associate

Right.

**Michael C. Lucarelli** - *Analog Devices, Inc. - VP, IR and FP&A*

I'll make 1 plug. I was like -- we get a question a lot about China. And I always like what Vince says in that market. In any market, China also, if the customer wants the best performance technology, they choose ADI. It doesn't matter if it's China, Europe, Japan, U.S., we go with performance, we lead with performance, not price. And if that's what they're solving for, performance, they'll choose us. And they'll be that way in China today and in the future.

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**Matthew Patrick Prisco** - *Evercore ISI Institutional Equities, Research Division - Associate*

Perfect. Let's dig a bit deeper into the system approach that you guys often highlight. Can you maybe walk us through where we are in this transition to the system-level solutions? Or maybe asked differently, given the fact that roughly half of your revenues are generated from products decade-plus years old, when customers come to you today, how should we think about the split between those looking for a catalog part of discrete component versus those that are coming to collaborate and looking for more of a solution-oriented approach?

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

Yes. It is -- it's a clear question with an unclear answer. And the reason for that is when we think about how we provide solutions to our customers, those solutions run a very, very wide spectrum. We have linear, which makes -- and our defense business, which makes modules where they take existing products and technologies, they shrink them and give a sort of a unique solution that builds in multiple capabilities.

We also have a solution model where we have built out a reference design for a customer where we know exactly the functionality they might need, for example, in robotics. And that's built off of standard products that we have and some of those can be decades old. But for the customer, it's still providing a shortcut to get to their answer.

It allows them to say that -- and one of the big high-speed test guys that I talked with early on in my time with ADI, gave the example of when we take a solution from you, even if it's built on standard products, you're guaranteeing that those are all going to work -- interwork together. And it saves me, when it doesn't work, trying to figure out which supplier is responsible for it not working out. So for us, solutions can be built off of our more -- our older-generation products, and they can be brand new things that we're punching out today.

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**Michael C. Lucarelli** - *Analog Devices, Inc. - VP, IR and FP&A*

That's a good summary, is combining the technologies of a catalog is hard to do. We have the broad catalog to combine for the customer. And by combining our catalog position, the overall performance of the system is better. And that's just catalog parts. We also do have system parts like a transceiver or BMS or in healthcare. It's also more of a -- think of a system like digital or analog, that type, too. So there's 2 different ways to skin the cat. That's why it's a tough answer, because we do it both ways.

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

Investors often ask, what percentage of your business is solutions? And the better metric that we use internally is look at our ASPs, because that's a reflection of where we are creating value by taking products that we have and getting more from our customers for those.

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**Matthew Patrick Prisco** - *Evercore ISI Institutional Equities, Research Division - Associate*

That makes sense. So we've heard some investor concerns on the margin side for overall analog, including ADI that we've now seen peak margins for the business, not only near term on declining utilization rates but longer term, as we think pricing reverting to historical trend of annual concessions and increasing supply and competition coming online.

So what are your thoughts as we think about this dynamic playing out through the remainder of the decade? And then for ADI specifically, how do we think about gross margins trending over time post that first half '24 trough utilization?

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

You want to take that, Mike?

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**Michael C. Lucarelli** - Analog Devices, Inc. - VP, IR and FP&A

Sure. On the gross margin side, I mean, we did not raise prices to goose gross margins, we raised prices to offset costs. So I would not say, oh pricing changes, we're going to lose gross margins. We didn't add to gross margin because of pricing. To your long-term model, we said 70% floor. You saw what good times look like, 74%. I mean is 70%, 74% peak margins? Maybe it is, but that's damn good margins, I would say.

And what Prashanth talked about earlier is what we're looking at is growing the business and driving leverage on the OpEx line. So gross margin, we feel good about the kind of low 70s percent through cycles, grow that business 7% to 10% and then drive leverage on the OpEx line. So I don't think -- I don't know if we've hit peak operating margins, but gross margins, we like that range.

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**Matthew Patrick Prisco** - Evercore ISI Institutional Equities, Research Division - Associate

Okay.

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

I would -- maybe just a few things to add to what Mike said. I would be -- when we think about our gross margins, part of it -- I think we peaked in Q2 at 74%? 74% gross margins, not a lot of hardware companies you're going to find that can put up those kinds of margins. But for us, that gross margin also is a measure of the innovation that we drive.

So we use that gross margin internally as a true north to say, we spend more R&D than anyone else in semi, if you -- depending on what metrics you use. And the return on that R&D has to be reflected in the value we're pulling out of our customers, which is reflected in the gross margin. So we really view those 2 together.

If the organization wants to earn the right to continue to spend R&D, to drive innovation, then the innovation has to return value through high gross margins. And if we can't get the gross margin, then you don't get to spend the R&D.

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**Matthew Patrick Prisco** - Evercore ISI Institutional Equities, Research Division - Associate

That makes sense. And -- as you think about from here the greater collaboration, the ASP is moving higher, is there some type of trade-off between the margin expansion and revenue growth? Are you managing to a certain level where you say, okay, this is 74%, how much higher could we go?

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

Yes. So we have an investor thesis or hypothesis that if we can deliver you today a \$12 billion revenue company that is growing at high single digits with 70% plus gross margins that is throwing off 40% plus operating margins, that is a company that you can feel very comfortable investing in.

So we want to ensure that, that 7% to 10% is something that we can deliver. And that's where we'll make the trades, is that if it makes sense to be more aggressive in certain areas of the market to ensure that we can pursue the growth, we will do that. But when we set up that investor model,

we intentionally put that number out there of a 70% floor. I don't know other companies that have the concept of a floor out there, but that is to give you confidence that our goal is to have gross margin with a 7 handle on it, but then to have the revenue in that high single digits.

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**Matthew Patrick Prisco** - *Evercore ISI Institutional Equities, Research Division - Associate*

Perfect. And then I'd like to shift over to the Maxim acquisition. ADI has executed very well in driving cost synergies, no huge shock given track record with Hittite and Linear. But as we sit here today and think about potential revenue synergy ramp from here, how do we think about that upside and potential to outgrow the analog industry as a result of this dynamic?

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

Yes. We committed to \$1 billion plus of annual revenue starting -- not starting but at a run rate level of \$1 billion plus in 2027. We also committed that we will, on a once a year basis, give you some measurable update on how we're doing against that revenue synergies. Mike is going to lead that discussion in the November earnings call, but I'll turn it to you to see what you want to preview on what you're planning to do...

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**Michael C. Lucarelli** - *Analog Devices, Inc. - VP, IR and FP&A*

Well, I mean, we'll talk a little about -- revenue synergies it's going to be small revenue dollars now. It's all about the pipeline building for the opportunity in the future to hit that \$1 billion. So we'll give more context about how the pipeline is building, where is it building?

And I'll give you a quick preview where we've been very pleasantly surprised on the automotive side. We knew we had a great technology in GMSL. We brought it to customers. We've got some design wins in auto companies, but we also brought it to industrial customers on the automation side. So we had high hopes for that. We thought \$400 million of synergy opportunity with GMSL, I bet we can surpass that because of the broad adoption outside of automotive, too. So that was a little teaser for the earnings call in 8 weeks to 10 weeks.

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**Matthew Patrick Prisco** - *Evercore ISI Institutional Equities, Research Division - Associate*

Perfect. And you guys just passed, I believe, the 2-year mark of that acquisition close. So maybe you can offer an update on how integration and talent retention has played out relative to expectations and maybe where do you stand in the power market today now with the Linear, Maxim combination and how the positioning in that high-growth analytics subsegment is evolving.

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

Yes. On the first part, integration except for some remaining IT systems is essentially complete. Organizations are integrated. The employee workforce is completely integrated. We are now on a common HRIS system, where everyone is in the same tool set road maps for product development. Our integrated sales force is integrated.

What remains is -- we just went live on the general ledger for a combined SAP system a couple of weeks ago. And in the next 6 months, we will go live on order to cash. That's probably the biggest pain point for us right now is if you are a customer and you are giving us an electronic data feed for ordering products and you want to order legacy ADI and legacy Maxim products, today, we burden you with the inconvenience of sending us 2 different data streams because they're mapped into 2 different organizations. That will be resolved in the next couple of months.

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**Matthew Patrick Prisco** - *Evercore ISI Institutional Equities, Research Division - Associate*

Okay. Is that meaningful enough that it could actually cause any type of change in customer demand or willingness to...

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

No, it's really -- it's more just -- it's -- we want to present one face to the customer, right? You go to our website, you see one integrated website, a salesperson calls on you and he or she represents the entire portfolio. It's just when you go to execute that order, we are -- and IT system integration takes time. So I don't want to -- I think that we have moved very aggressively on this. And many companies don't even choose to do this system integration.

But very clear to Vince's philosophy on this company is while we do acquisitions, once the acquisition is complete, everyone should feel part of one ADI. And this is the last piece that just needs to drop.

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**Matthew Patrick Prisco** - *Evercore ISI Institutional Equities, Research Division - Associate*

And just as you think about that retention and now ADI's positioning the power market, now that you...

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**Michael C. Lucarelli** - *Analog Devices, Inc. - VP, IR and FP&A*

And the power market, so was it 2017, we bought Linear high-performance power. They own the high-end market. Maxim's a little bit kind of, call it, mid- to high-end markets, so it opens up a new SAM for us. And what also Maxim does is they have a cost structure for their power products that we can lean on and take the Linear portfolio and redesign these parts, the lower cost structure.

So we can go after markets that maybe not -- don't support as high gross margins, but a lower cost structure. And that is what we have, go back to the gross margin model. (inaudible) in that 70% plus gross margin even as we grow the business faster in these areas that might not support as high of gross margins. We're taking these products, reducing cost and going after those areas.

The second thing is having a broader portfolio in power is for cross-selling. We have great customer relationships. Now we have a bigger bag of parts on the power side that we're selling to the customers And just having that part. We have an anchor product like A to B. There's power around that. We had some Linear power, it works sometimes. Maxim power is actually more fit for that market. So having that cross-sell also with more power functionality also helps the power growth for us. It's a very big focus area for us.

I think when we bought Maxim, everyone was like, you have power and now you more power. True. Linear was general-purpose power, Maxim was more application-specific power. Having the broad portfolio helps us go after every market, industrial, auto, comms, consumer.

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**Matthew Patrick Prisco** - *Evercore ISI Institutional Equities, Research Division - Associate*

Perfect. And with that, I'll pause for a second just to see if there are any questions out there. All right. So I guess continuing on the portfolio line of discussion, I think we're seeing demand for integration or optimization of digital and analog solutions from customers. ADI, obviously a leader in the analog space and maybe less so on the digital side of things. So number one, is this a dynamic that you're seeing in the market that needs to be addressed? And if so, is this something that can be addressed organically or something may require M&A down the line?

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

I would say there's no change on that. There has for as long as I've been at ADI and probably going back even further, the battle line or the skirmish line is at the digital to analog interface. And with generations of products on both sides, sometimes we advance, pressing further inward into the digital space and sometimes the analog folks will add some -- sorry, the digital folks will add some basic analog capability and try to come the other way.

So I don't necessarily see the integration as anything different. What we do is where we -- we access digital through a variety of means today, including we have a very large team today that can incorporate digital content onto analog chips for some of our vertical chips -- our vertical market chips, we have a significant digital content. I think in the Investor Day, we talked about one of our flagship products that is coming out that we have high hopes in terms of how it can be used more broadly in the analog market because it incorporates easy-to-use digital for our smaller industrial customers.

And then the other example I would give is, for example, with FPGAs, we will do a level of digital work at the analog fringe with the goal of optimizing the customer selection of an FPGA. FPGAs are expensive and they're power hungry. If we can do things with our -- with the signal and with the data to clean that up and make it easier to hand off, a customer can actually design in a much smaller FPGA solution. And for some of our products, that is a software switch that a customer can choose to turn on or not.

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**Matthew Patrick Prisco** - *Evercore ISI Institutional Equities, Research Division - Associate*

Okay. Perfect. I'd be remiss if I didn't get to ask for your thoughts on the great debate that is the auto cycle. Can you help us think through expectations here, just magnitude and duration of potential correction? I mean particularly interesting, your thoughts as ADI just guided, auto down sequentially for the second straight quarter, versus many peers still highlighting a resilience.

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

Yes. You want to go and then, I'll add my color comments? All right, all right.

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**Michael C. Lucarelli** - *Analog Devices, Inc. - VP, IR and FP&A*

All right. We've been doing it too long together. You can tell.

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

True. This is a Prashanth view. I think that I'm concerned about the overall auto environment over the next 18 months, given rising interest rates make -- continue to put pressure on consumers who finance much of their vehicle -- finance or lease much of their vehicle purchase. Dealer inventories are not coming back to the levels they used to be. It's too profitable for the OEs to keep dealer lots leaner.

And for those customers who want a very specific configuration, you order it, and if you order it, then you don't get a discount. If you're in a more urgent purchase need, then you take what's on the lot, and if it's purple, then that's what you get. So I believe that is going to be the model we're going to see out there first.

But on the second side, I think that we get -- we have extraordinarily high market share in electric vehicles. And through our pipeline process, we see the yearly revenue forecast for most of the OEs who are using our products for their electric vehicles, and they are all continuing to come in short of their own internal expectations.

For us, it's less of a concern because when you own the market as long as EVs are growing, we do well. But on a mix basis, we are seeing our customers falling short of expectations. So I'm a little less bullish for auto. And I think the companies that are still bullish on auto, I would suggest that you keep an eye on their lead times because I'm not sure they're getting a true signal just yet.

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**Michael C. Lucarelli** - *Analog Devices, Inc. - VP, IR and FP&A*

For kind of the near term, if you look at our automotive business, there's a secular piece and kind of a catalog part or a broad market or -- I want to call it that. On the secular piece, think of EVs. For BMS, think of [in-cab] connectivity, A to B and GMSL. A to B connects infotainment systems in cars,

GMSL connects radars and cameras. Then think of functional safe power, which is displays and radars, those 4 areas, about half of our auto revenue, that's still growing.

But the part that's getting impacted right now is the other half, the more general-purpose part. And Prashanth said, that's very lead time driven. We've seen that change in the other 50% as lead times have fallen or improved. And I think if you look out, I'm more -- I guess more optimistic than Prashanth is on the automotive market. I think it's still 1 of the better growing markets because of that 50% tied to the secular trends.

EVs will continue to grow. We have a great share. We have design wins in GMSL and A2B. Those are continuing to grow. And functional safe power, one of the few companies who have that out there that is needed now in displays and in cameras. So that's the thing about the business, there's 2 halves to it and what's driving the growth is more of the secular areas.

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**Matthew Patrick Prisco** - Evercore ISI Institutional Equities, Research Division - Associate

Perfect. Well, with that, unfortunately, we're out of time. But Prashanth, Mike, it was a pleasure chatting with both of you today. So thank you so much for joining.

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

Thanks very much, Matt.

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