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PRESENTATION

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

Good morning, everyone. I'm Stacy Rasgon. I'm Bernstein's Senior Analyst covering U.S. semiconductors and semiconductor capital equipment. And I can't express what an honor it is to have our guests here today, Rich Templeton, the Chairman, President and CEO of Texas Instruments.

Before we begin, I want to mention that, you have questions you would like to ask during the presentation, which will last about 50 minutes today, you can submit them through our Pigeonhole forum. There should be a link on screen there. We will have time for audience Q&A at the end.

So Rich comes here every year. And every year, I go on and on about TI's sort of what's been a remarkable multiyear transition story and how it's benefited from them. They've kind of made it look easy over the years. But in fact, Rich often says that he likes to see - he likes people to see them as boring. In reality, it was almost certainly not easy. And when you dig in, in my opinion, it's anything but boring.

TI was one of the first companies who recognize the futility of competing in wireless. Some of those exits, painful at the time, freed up significant investments to grow and the much more attractive businesses that made it the bulk of the portfolio today. Their 300-millimeter manufacturing strategy, it seems old hat now, but it was -- looked at as crazy when they started it, but it's resulted in significantly lower CapEx levels, substantially higher free cash flow generation and margins and they're doubling down on that 300-millimeter strategy today.

Gross margins have been an upward trajectory for years as the benefits of these strategies have rolled through. And more recently, they've been leveraging inventory and capacity strategically in ways their competitors just simply can't. And of course, TI was one of the first, if not the first of their peers through, both words and actions to commit to return 100% of free cash flow, which is at a higher level today, which of course, has become a very attractive story for many investors.

To give us some color on these and many other topics, it's my great pleasure to welcome, Rich. Rich, thank you so much for being with us today.

Richard K. Templeton - *Texas Instruments Incorporated - Chairman, President & CEO*

Stacy, thanks for having me today. It's always a pleasure.

QUESTIONS AND ANSWERS

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

Likewise, likewise. Rich, I generally like to try to stay away from near-term questions in this format. Given the situation in the industry around shortages and everything else, I think I am going to have to start out with some of those. And certainly, I've been doing this job more than a dozen years. I've never seen anything quite like this. You've been doing this job a lot longer than I have. I'd be curious, just number one, have you ever seen anything similar to this? Maybe the financial crisis might be the thing that comes close. But I mean are we in sort of an unprecedented kind of shortage and constraint environment? Have you seen anything like this before?

Richard K. Templeton - *Texas Instruments Incorporated - Chairman, President & CEO*

Yes. Stacy, I think the analogy to the financial crisis is at least the most recent significant transition that we've looked at. But for those of us that were also managing through the Y2K ramp, where you had a strong PC world, that then got overheated with Y2K builds, it does have a little of that trough in it as well, just in terms of some of the energy that's around. So I've seen these, and we've gone through them. The comments that I make internally and it's going to go up. And then after it goes up, it's going to go down. And after it goes down, it will go up again. And I don't try to dismiss it, but we really just try to look through it at what the long-term growth trends are and that's tended to serve us pretty well.

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

Got it. It seems to me that you're one of the few players that sort of took a lesson from the financial crisis. So on the financial crisis, I was there as well. You kind of got caught along with everybody else in that scenario. I remember you'd kind of pulled back, your lead times stretched out to very lengthy time frames. And it seems like this time, you've decided that that wasn't going to happen again. I think even you said it, like the lost opportunity from not being able to serve demand. Obviously, it dwarves the impact of holding too much inventory.

And at this point, like you've actually decided to build inventory through this whole cycle. I think you even said it like last year, you want to be prepared for demand in case of that snapback, which has certainly happened. Can you maybe talk a little bit about that decision, keep the fabs running mostly full, continuing to build channel inventory? And maybe just sort of like take us back to the financial crisis, there maybe some compare and contrast of the current situation versus what we saw today? Versus [what we thought of].

Richard K. Templeton - *Texas Instruments Incorporated - Chairman, President & CEO*

Yes, I think your summary is a pretty good one in terms of what we experienced back 10-odd years ago and how we've approached it. But we're also a very different profiled company versus 10 years to go. When you're running with a big wireless business and most of those devices, they may not be custom, but they're pretty close to custom. And you've got to be very careful about what you build inventory-wise. So move ahead to what we're living through today, by design, the portfolio looks and feels very different.

We talk as one of the competitive advantages of diversity and longevity and that just lets us make very, to me, logical decisions like the one we announced on the earnings call in April a year ago when we said we were going to keep the factories running because it just made sense.

You also watched us to your, I think, point made that when Rafael and Dave gave the capital management update, I think it's late January, early February, we've raised the high end of our inventory range because when you just think about the products that we build and the longevity that they are, it's just -- it's at a great advantage that we have. And so I think that we've handled this cycle much better than the one 10 years ago and better than our competitors. And we've got some really interesting things that we intend to be better even the next cycle because there will be another one. We don't know when it is. But these are just -- it's a great way to always be getting better.

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

Got it. Got it. And I guess I don't know I want to ask. Let's talk about, I guess, the demand profile. You talked about taking the inventory target up. You actually haven't really been able to take your days of inventory on your balance sheet up. I guess it's a function of how strong the demand actually is. Are you parsing, I guess, those order levels on that demand at all? Are you kind of trying to judge what your customers ordering versus what they need? Are you just -- or is it the case where you can fulfill the order that you're fulfilling it this way? And I don't know if you'd be able to tell the difference one way or the other in terms of what your customers are doing. Are you shipping the demand right now, just as the orders come in?

Richard K. Templeton - *Texas Instruments Incorporated - Chairman, President & CEO*

Stacy, we've talked many times, Dave has made this comment many times on the earnings call. Everybody says they have great channel visibility, until all of a sudden, they declare they don't. And so you do your best job keeping up with customers. And you said it very accurately, we would love to have our inventory levels higher, but demand is just so strong right now, and we're now a year plus into that. And we will get -- the window will open up. We'll get an opportunity to get that inventory rebuilt and we'll get that done at that time.

But it's also why -- and I think Rafael or Dave talked on the earnings call, I'm not interested in going out and booking multiple years of inventory of backlog because customers don't know what they need. And so you can tell them it's noncancelable, but them ordering stuff they don't need is not that helpful. So we really just try to keep a steady hand on this, ship as best we can, keeping up with things. We've got a couple of hotspots we're still working. And as soon as things let up, we'll hopefully get some inventory build up.

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

Got it. Do you think like this trend of noncancelable orders -- do you think that eventually drives the eventual oscillation worse? If to your point, they're ordering stuff that they don't need, I mean, does that make the eventual like the cycle worse?

Richard K. Templeton - *Texas Instruments Incorporated - Chairman, President & CEO*

I have no -- my guess is no because that stuff will get processed through. And to me, that's probably more noise on the edge than it is overall volume because it's certainly not how we're operating. I don't think it's going to make a big difference, is my guess, but it's certainly not our approach.

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

Got it. Got it. Maybe on the good side of this, do you think you're taking share to your inventory and capacity strategy? So I know in general, share tends to be sticky. It's not that easy to swap one part out for other. But to your point, this has been going on for, what a year, longer. Is that enough time for customers to actually start designing? And are you actually seeing any of that kind of activity?

Richard K. Templeton - *Texas Instruments Incorporated - Chairman, President & CEO*

Well, the fact is I think that you really started seeing the shortages when things kind of snapped in March of 2020, particularly if you were staying very close to what was happening in China because they really went through that cycle beginning in January. And so customers have had more than enough time to redesign portions of boards based on lack of supply. And I think if you look at our general revenue trends over the past year, they've held up, I think, pretty well compared to most of the competitors that you would probably monitor us against or judged against even a WSTS number.

We still always believe that you better judge share gains over the long term. I think they get talked about way too technically. But my guess, those moves have served us pretty well for the past year.

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

Got it. Got it. Let's talk a little bit about the -- I guess, the distribution strategy because that's the other kind of like side of this. And I guess, this is to the extent that I get people asking about a bear case on TI. This is one of the -- you guys have disintermediated your channel, and that's going to come back to bite you in some sense. At the same time, though, like it's not anything new. You guys have been sort of moving along a very kind of a concrete distribution strategy for going on 10 years, and it's been evolving over the time. Can you maybe talk a little bit about what you've done in your channel over that 10-year period, maybe from where we were in '08 or '09, the financial crisis to where we are today? What's changed and how is it benefiting you?

Richard K. Templeton - *Texas Instruments Incorporated - Chairman, President & CEO*

Yes. Stacy, we've talked again on this for quite a long time, and it's just been as we've looked at our competitive advantages, manufacturing and technology, breadth of our product line for each of our channel and then diversity and longevity. Reach of our channel is just extraordinarily unique thing that we have, and we can do it because of the breadth of the product portfolio. So we built up our own sales and applications team. It's larger than everybody, so we can get to everyone.

We moved most of the design creation or design win work, boy, it's probably 5-plus years ago over. Everybody said, they're not going to -- they're going to lose share, and you've watched us now just continue to march higher. And then during, really 2020, we completed the last phase of that to where we moved significant amount of the revenue direct and narrowed down our distribution base just because we weren't going to be moving as much revenue through that channel.

And again, this one goes back to as we talk internally, luck is what happens when preparation meets opportunity. And that turned out to be a pretty lucky move for 2020. When things are tight, customers want very close relationships and having distribution or people buffering between you and them only puts noise in it. And we've really been rewarded with those moves during the past year, I think. And I just think they're going to continue to serve us well.

At the higher level, just go outside of our industry, nothing good happens when you've got buffers between you and your eventual customers. So we intend to have close relationships. We're going to get better insight, better knowledge. It's going to let us service the tactical production demand better. But it's also going to give us insight into what the business is, where aren't we, where do we have to win more and how do we grow our business even faster. So I am really thrilled that at the timing that we were able to get that last phase done in 2020 and right in the middle of the pandemic and it's really paid off for us.

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

Got it. How much of the business is direct today versus going through the channel?

Richard K. Templeton - *Texas Instruments Incorporated - Chairman, President & CEO*

We gave the update, I think, closing the year that I think we averaged, I forget, Stacy, was in the mid-40s, 45, 46, 47, but we left the year, I think, month of December, just approaching 60. And we'll get an update to everybody as we wrap up 2021 in January.

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

Got it. And you talked a lot about ti.com as a competitive differentiator to go direct. How much of the business -- how much of the revenue today goes through ti.com?

Richard K. Templeton - *Texas Instruments Incorporated - Chairman, President & CEO*

Yes. It's just -- it's one of these great, rapidly growing portions of the business. And one, we continue to add more capability. And those are investments that we've been making now really for 5 years, and we continue to get better and better in terms of how we can reach locally, be the importer of record, just make it easy to transact business. And it certainly helps, over the past year when you have product availability, that tends to make you a popular supplier as well. And so that's been really a great combination over time.

So that's why I go back to a lot of investments, a lot of work that's been underway. And we've really been fortunate to see it come together at a very lucky time in terms of what the pandemic has done, how it's stressed the system, but how we've been able to perform.

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

Got it. But how much is actually going through that ti.com channel? I mean, if you -- like, close to 60% of the revenue exiting the year was direct, how much of that is actually going through the website?

Richard K. Templeton - *Texas Instruments Incorporated - Chairman, President & CEO*

Yes. We've not released the number on that. We'll figure out when we want to put some numbers on it, but it is rapidly growing. Very pleased with what it looks like.

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

Got it. Got it. Growth, in general, I've had this theory on analog space, in general that the growth just has to be a more important part of the recipe going forward. I mean you guys have -- the transformation, again, over the last 10 years plus has been phenomenal. I remember when I first started this job, you had aspirational targets to get to 55% gross margins and 30% operating margin. Obviously, you've blown through all of those. If I look forward from where we are today, just given like the improvement that we've seen in the model, I mean there's some and we can talk about how much headroom might be left, but I mean, you're probably not going to get another 1,500 basis points of margin expansion going forward, probably. So to me, that means growth needs to be a more important piece of the recipe going forward. Would you agree with that sentiment?

Richard K. Templeton - *Texas Instruments Incorporated - Chairman, President & CEO*

Yes. I think the sentiment is accurate. The only reason that you'll hear me give a careful answer, you'll hear Rafael give a careful answer...

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

You guys never sign up for a growth target, which I think would -- probably...

Richard K. Templeton - *Texas Instruments Incorporated - Chairman, President & CEO*

Well, and the reason -- Stacy, the reason behind that is just look at all the other companies where revenue growth becomes a singular objective. And if -- and we just have a very strong belief that you've got to get stronger and aim at the right markets and revenue growth is a result, not something you chase by itself. But your -- to the math, your math is, I think, very accurate to grow free cash flow per share over the next 10 years. It has to be predominantly driven by top line growth. And that's about the Analog business, and it's about the Embedded business, both contributing.

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

Got it. So let's talk about those 2 businesses then. And they've had different profiles recently, which we'll get into. But let's talk about Analog. Obviously, auto and industrial, analog and embedded, these are the areas that you guys have. But where is TI's competitive differentiation in Analog? Obviously, you are the biggest player, although we've got some folks, both, I guess, organically and inorganically, are trying to build up on the scale front. Where is TI's competitive advantage in Analog? And does it go beyond the things that you've talked about? I know you've talked about manufacturing capacity, you've talked about the inventory. Is there anything like special or specific to analog that TI does better than everybody else?

Richard K. Templeton - *Texas Instruments Incorporated - Chairman, President & CEO*

Yes. So I know it goes back probably to the boring comment when I just study this thing, and I know people say, yes, it's got to be more exciting. Well, take the 4 advantages, manufacturing and technology. If all you get out of manufacturing and technology is lower cost and better control of your supply chain, okay? That's a pretty good advantage, okay, for you to carry. And even with other companies that are trying to get bigger, you don't have anybody doing what we're doing in terms of 300-millimeter and in terms of what we do internally on assembly, for example.

Then you move up to the channel discussions that I just had. And you think about an industrial and an automotive base, you've got to get literally to tens of thousands of customers. You've got to get to them efficiently. You've got to do a great technical job and a great production job. And you've got to make the investments to be able to do that better than anybody. So when you start looking at what really is a sustainable competitive advantage, meaning you get tangible benefits, plus it's difficult to copy, okay? I think those are going to things that really separate us in the long term.

Do you have to have great designers and do great parts and have low power or high speed or low noise, all the technical attributes, depending on the product category, the answer is yes. You've got to have those. But the things that you really want is what can really set you apart from your competitors that it's just very difficult for them to copy. And I think we've got those well understood and we invest with those in mind.

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

Got it. Why is the Embedded business been so much different than Analog in terms of the growth profile over the last bit of time? Like why haven't...

Richard K. Templeton - *Texas Instruments Incorporated - Chairman, President & CEO*

Go ahead.

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

I just -- why haven't we seen the same level of performance in that business as we've seen in Analog?

Richard K. Templeton - *Texas Instruments Incorporated - Chairman, President & CEO*

Yes. I look at that one, Stacy, and we're very clear. When we have something that isn't performing well, we accept it, and we get to work on it. And you watched Embedded really top out back in, it's probably late 2018. And I think we've been very direct that we were extraordinarily focused portfolio-wise on that. We had a new leader that we brought in. And we said, hey, look, our goal is to turn that into a long-term grower that can grow just like Analog.

We're not looking for short-term sockets that will kick up a quarter and make somebody feel better. And I think during 2020 and really even into first quarter of '21, you've started to see kind of Phase 1, which is get stability and get that business starting to improve. And now we've just got to go prove over the next couple of years that we can grow it the same way. I've got great confidence. The portfolio, the products, the management, the -- I've got the advantage of, I hear the salespeople firsthand and the customer is excited about what's going on. And that's always the right leading indicator of having confidence of where it's going to go.

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

Got it. What are some of the changes that you're making? Is it investing in new types of products? Or is it changing like how you're reaching out to the customers? Or like what was the issue there that's being changed? I know there was some exit there as well, I know some of it was the comm infrastructure exit, so that was some of it.

Richard K. Templeton - *Texas Instruments Incorporated - Chairman, President & CEO*

You have heard us be very careful. There's no doubt that comm infrastructure is part of that decline, but that is not the dominant part of it. And so you haven't heard us use that as an excuse. It's really about picking the areas of the products that we were in and really focusing on the ones to take you to the broader markets, the broader applications and the better growth opportunities. And that's really what I think that team has done and get it reoriented. The general product categories are identical. And we just had some areas that we thought we needed to heavy up, some that we thought we could invest less and then really move the emphasis and get people more aggressive. So we'll continue to -- we've just got to keep showing that we can drive results on that.

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

Got it. Got it. A lot of times, people also they look at the margins of that business and they compare with the Analog and obviously lower. Is that just a matter of the revenue scale? Like if Embedded was as big as Analog, would it have similar margins?

Richard K. Templeton - *Texas Instruments Incorporated - Chairman, President & CEO*

No, it's not going to be identical, but I laugh a little at that where how many of the top semiconductor companies, let alone the S&P 500, would love to have Embedded's profitability. And so I find that an academic discussion as opposed to it's a great business that can grow. And I don't need it to have identical margins to Analog. I just needed to grow nicely and be a great contributor to the company long term, which I think it can be.

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

Got it. But I mean it is true that as revenues grow, the margin should go up, correct?

Richard K. Templeton - *Texas Instruments Incorporated - Chairman, President & CEO*

Yes. You will get some scale just in terms of R&D leverage on that. But there's also no doubt that Analog is a pretty unique capability in terms of the margins that it operates at as well.

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

Got it. Let's talk a little bit about your R&D strategy. So like this is another thing, like one of the few companies that I've heard people say they should spend more money, not less. And it is true as a percentage of revenue, like on R&D, you guys tend to spend less than your competitors, although on an absolute basis, just given your scale, you spend a lot more. Could you talk a little bit about just your overall R&D strategy? How do you actually look at how do you make investments and sizing those investments? And how do you give investors confidence that you're spending the right amount of money on R&D?

Richard K. Templeton - *Texas Instruments Incorporated - Chairman, President & CEO*

Yes. To me, the best -- working that question backwards, the best way to talk to investors about confidence is what's the track record been in terms of investments and translating that into growth. Could we go justify spending a higher percentage of revenue and defend it that other companies are doing that? Sure. Data is there, as you said. But if we're growing faster then, that's kind of a silly comparison to go make.

So our orientation really goes back to the comment I made on the revenue side a few minutes back, which is we want to get stronger, aim at the right markets, and that results in bigger. And so that's how you see us guiding where dollars go, what gets heavied up, what gets invested in. And we've continued to grow the absolute dollar value of R&D, and we'll continue to do that going forward. And the markets could go up and down, and you'll see us with a pretty steady hand because those R&D decisions are 5- and 10-year decisions that you've got to make. So I've been pleased with that discipline, and I think the results reflect that discipline.

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

Got it. And I guess to those share gains, I mean, you have still continued to gain share in Analog. I mean it's been -- I don't know what it is 0.5 point a year, 1 point a year or whatever it is, but it's...

Richard K. Templeton - *Texas Instruments Incorporated - Chairman, President & CEO*

We have probably run 30 to 40 basis points over the past 8, 9 years. And I usually try to benchmark post the national integration in 2012 just to have clean numbers going forward. The past couple of years have probably been a little higher than that. And now we just have to keep working, try to keep pushing that number up.

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

Got it. Let's talk a little bit about the, I guess, the business mix itself. So obviously, look, you guys are very strong in terms of pushing on industrial, and auto was the most attractive markets that you play in. Can you talk a little bit about what makes those attractive, whether it's content or sustainability, barriers to entry, terminal value of the portfolio? TI is like secret sauce in those markets. Like what is it that brings you to them? And how do you see that differentiating versus where your competitors are? Because everybody is going into those markets, right? Everybody now sees them as attractive.

Richard K. Templeton - *Texas Instruments Incorporated - Chairman, President & CEO*

Right. Well, as you know, we made those statements 6, 7, 8 years ago and said those are the markets that we want to have strategic emphasis, not the only thing that we do but we certainly want to be strategically heavy in those. And the reason is I just thought it was an absolute no-brainer that they were going to be the highest growing markets over the long term.

And the secret behind that is semiconductor content growth per system. And so if you just go through automotive applications or go through industrial applications. And if you want to make that piece of equipment, use less energy or be more serviceable or safer or smaller or more portable, what are you going to do to that system, you've got to put semiconductors inside of it because most of those markets are electromechanical or mechanical based markets.

So we just looked at that, and we said, that is a great probably 20-year and maybe longer secular trend of rising semiconductor content that will really be a great opportunity. And those are applications when -- if you look at our product portfolio, it's not an accident what we invest in. It's about low power microcontrollers, and it's about sensors, and it's about the ability to detect or drive motors, the ability to power everything. You could just literally walk around a block diagram of a board, and that will explain the product portfolio that we have to match to it. So that's why we've been heavied up in it. We've done well from an industrial market share and an automotive market share, I think, over those 7 or 8 years.

As you said, everybody says they want to get into it. That's easy to put on a PowerPoint slide. But when you really start breaking down what IP do you need, what process technology do you need, what reach of channels do you need, take a look at the importance of manufacturing and technology to those customers. You have to have all those capabilities to go really service that market well. And we're not -- so we're not there by accident. It was a very conscious plan that's led us here.

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

Got it. Let's dive in a little bit to the auto business since we're on the topic. So this business was growing for you guys. It was probably double digits, at least pre COVID. And I guess we'll see what it's doing now in the wake of some of the supply chain issues. Can you talk a little bit, though, about what was driving that growth? And I know your auto portfolio is very, very diversified, like, but were there specific areas in it that were driving growth? Was it broad-based?

Richard K. Templeton - *Texas Instruments Incorporated - Chairman, President & CEO*

Yes.

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

And I guess do you have a perspective on how much of your auto portfolio might be, I don't know if you want to call it like SAAR-dependent versus like more secular or like more content dependent?

Richard K. Templeton - *Texas Instruments Incorporated - Chairman, President & CEO*

Yes. So I think there's, Stacy, a few things inside of that. First is kind of similar to the discussion I just had of why we love industrial and automotive. In automotive, we really take that on with the same level of detailed granularity. So we're not interested in a couple of sockets and a couple of revenue areas. Because while that can be fun on the upside, usually, those things have a short life to the downside. And we really organized the team to go across, okay, all the major markets. So think the -- everything from body and chassis, to lighting, to infotainment, to safety and ADAS and to electrification or powertrain.

And usually, everybody talks powertrain or EV, everybody talks ADAS. And we love those, and we're doing very well in those, but we also see many opportunities across the rest of the vehicles as well. So our teams are set up that way. We've got system teams that break down all those subsystems to go make sure we're maximizing our design wins in them. And we also make sure that we're maximizing our penetration throughout the world, so that we don't have any single point dependencies because our data says, that's what really drives sustainable long-term growth when you do that. So that's been the conscious plan, and it has worked really quite well for us.

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

Got it. Got it. I guess, not to go back to the short term, but I mean, you have -- obviously, automotive has been impacted most, given some of the vagaries of the supply chain and some of the behaviors of the customers like, in the middle of COVID. Do you have a point of view, at least within auto on how long those shortages might continue to last from your perspective? Like, I know, you can't speak to the rest of the [world].

Richard K. Templeton - *Texas Instruments Incorporated - Chairman, President & CEO*

I don't try to handicap that, Stacy. We just keep up with people. We talked on both, I think, the January earnings call and the April call that our revenue into automotive was up 25%, okay, versus pre COVID. I think we used fourth quarter '19 to have kind of a clean compare on that. So we're just going to keep up with what they say they need right now, and we'll figure out how that trends over time.

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

Got it. Let's talk about some of the areas of the portfolio that are not auto and industrial. So comm infrastructure is an interesting one. 5G, obviously, is a big buzzword and people are very excited about it. And you guys seem to be on the other end of the spectrum sometimes when it comes to

5G to comm infrastructure, in general and 5G opportunities in particular. Can you maybe just give us a little more of your own point of view on comm infrastructure as a market and the 5G opportunity, in particular, as you guys see it?

Richard K. Templeton - *Texas Instruments Incorporated - Chairman, President & CEO*

Yes. The way I would describe it Stacy is we're just careful with buzzwords because they tend to come and go. And it's hard to turn those into cash, okay? They're fun to talk about. We made the comments or we made the decision, I forget, 2014, somewhere back 6, 7 years ago, that we just looked at what the infrastructure market or the comm infrastructure market would look like. If CapEx isn't going to grow by the carriers, it's hard for the semiconductor market to grow.

And when we looked at it and broke it down into a more detailed level, we said, look, most of our business at that time was on the digital side. I think baseband and some of those pieces. We said that's clearly going to come down. We deemphasized that. That has written down as we just talked about with Embedded. But we also said, when you look at more sophisticated radios and antennas that go along with a 5G world going forward, that's a great Analog opportunity.

And so if you actually look at the revenue, we've been doing very well with Analog revenue into the comm infrastructure market as Embedded has wound down. And we think it will continue to be one of the good opportunities, but not the opportunity. And so it really just comes back to -- we really want strategic emphasis on industrial and automotive, but we are going to participate in comm infrastructure. We're going to participate in personal electronics, in infrastructure or enterprise. Those are good markets. They need our products. They like our products. So we'll do those as well as the emphasis on industrial and automotive.

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

So maybe you can talk about personal electronics then? Like -- so what is attractive about this business? This is what, 30%, 35% of your revenue, it's not small. What's in your -- I guess this is PCs and smartphones and tablets and other stuff. What is it about this market that's attractive?

Richard K. Templeton - *Texas Instruments Incorporated - Chairman, President & CEO*

Yes. I think the number is more in the mid-20s.

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

Or maybe it smaller now, okay.

Richard K. Templeton - *Texas Instruments Incorporated - Chairman, President & CEO*

Percent of personal electronics. And that was -- we've been able to kind of hold our own in that, but industrial and automotive growth have just led to that being a smaller percent. The reason we use the word personal electronics is the things we put in there, PCs, cellphones, gaming, TVs, that type of product, that tends to be more of a 12-month, 18-month product cycle type of purchase. It has just a time constant that's different than industrial and automotive. So we think it's more insightful to put those together.

And certainly, those are going to be big markets for a long time, but I don't think you're going to see the same growth rate in overall personal electronics that you will see in industrial and automotive because the number of people on the planet just isn't growing by that greater degree. And so there's, I don't know, 2.5 billion personal electronic devices that ship annually. That number has actually been pretty flat probably since 2013, 2014. Dollar content is probably going up a little bit. So it's going to be a good market. They love our parts. We've got some very important parts that those markets like, and it's going to be an important part of TI for a long time.

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

Got it. And I guess to swing back to industrial then in that context. How do we think about content increase within industrial? I know maybe it's harder, like automotive is a single end market. You can kind of like at your hand on. You have -- I don't remember what it is, 15 different subsegments in industrial. And it's hundreds of end markets really and thousands of products and tens of thousands of customers. Is there some sort of a framework for how to think about content increase? Or like how do you guys think about that?

Richard K. Templeton - *Texas Instruments Incorporated - Chairman, President & CEO*

Yes. My guess, Stacy, is it's very difficult to analyze, and that wasn't on purpose...

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

I found it so.

Richard K. Templeton - *Texas Instruments Incorporated - Chairman, President & CEO*

But it is difficult to analyze, but just think about the question on the benefit that comes with something that's difficult to analyze. You've got to go get to thousands of end equipments, tens of thousands of customers, thousands of parts, okay, and do things very well. And when you do that, it's actually very difficult to be attacked, okay, in any one place for any substantive gains. So we love the competitive dynamics that go along with that type of market and it will be.

I think it's going to be very difficult to analyze because in order to analyze something, you've got to get down to the specific end equipment. And there's just no 1 piece of end equipment that makes up a substantive portion, which we think is great in terms of what's going to drive long, sustainable, diverse growth.

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

Got it. So we've talked a lot here about some of the organic opportunities. I'd like to switch to some of the inorganic activity in the space. And Analog has been an area of consolidation, not so much for you guys, at least not for a while. You mentioned in 2012. There's been some other deals in the space more recently. But I guess, what are your general views on M&A and TI's specific views on what it would take? Because again, you guys have not been broad participants in that activity over the last decade or so.

Richard K. Templeton - *Texas Instruments Incorporated - Chairman, President & CEO*

Yes. We're pretty unchanged from the post Memorial Day discussion that we've had for a number of years together on this. And that is that it would have to be something that strategically made sense, so it would have to be catalog-oriented. It would have to be biased to industrial and automotive for all the reasons that we've covered in this talk. And then the numbers have to make sense. And you just haven't seen it make sense for a number of years. And you look at the investments that we can make, the rates of return that we can achieve on those.

I just think that discipline is really important. So -- and the good news with what we've built and what we've assembled, we don't have any, well, strategic requirement or strategic synergy or whatever the term is that the bankers invent that justifies overpaying for something. So I love being in the position that we are on that. Because in the end, you've got to grow these things organically to generate value long term. Just putting things together does not create value, okay? It just creates noise and fees, okay? The real judge of success is what do you do with it after you put it together.

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

Got it. I guess to that end, like on the organic front, like in terms of the operating model and where you can drive it like yourself with growth and whatever. To be fair, if I look at it, gross margins are higher than they've -- maybe not as high as they've ever been, like, but pretty close. Your OpEx model, I think, is 20% to 30% of revenue, so you're kind of bumping up on the lower end of that. Is there anything left in the operating model from here? And I want to talk about 300-millimeter, and maybe there's some driver there. But I mean, how do we think about the evolution of the margin model, not just from the growth opportunity, we'll hopefully, get some leverage there, but just from structurally within the business itself, is there any more room left on the operating model given the -- frankly, given the degree of improvement that we've had over the last like 10-plus years?

Richard K. Templeton - *Texas Instruments Incorporated - Chairman, President & CEO*

Yes. Stacy, you go back to the discussion we had on revenue growth. To me, the easiest way to communicate it is assume that the majority of the growth of free cash flow per share over time has got to come from top line growth. That doesn't mean there isn't any room left. Could there be some incremental room at the free cash flow margin line or depending on valuation in the stock market on share count reduction, those are all things that we've got the ability and the discipline to go manage. But as you said before, if you go back 10 years and look at what we've done from a margin point of view, it's hard to imagine doing something like that going forward. So that -- I think that's the best way to think about where we've got to drive growth.

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

Got it. Got it. I want to ask a question about the 300-millimeter. So obviously, this is something that you guys will look at is crazy when you started it. It certainly paid massive dividends since. And you're doubling down on it now. And so you're building a new facility in Texas. Can you just give us any, I guess, not an update, but refresh our memory on what's going on with that 300-millimeter fab right now? And what's the timing of production? And I guess you see the same -- I guess, is it the same amount of potential cost savings, given it's going to be much more built out of new equipment versus used equipment?

Richard K. Templeton - *Texas Instruments Incorporated - Chairman, President & CEO*

Yes. So I'll work backwards. We got a lot of attention when we made the move with 300-millimeter that, gee, we got great deals in terms of what we paid for used equipment. And it's always nice to do that. I don't want to deny that. But the real secret behind 300-millimeter is the wafer diameter and the fact that with that wafer diameter, you get a 40% reduction in your chip cost compared to somebody building on 200 millimeter. And when you think about the fact that you operate these fabs for 30-plus years, that's all the money. Whether you bought the equipment, new or used, that's just a nice to have to go along with that.

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

Because you can use it for forever, basically.

Richard K. Templeton - *Texas Instruments Incorporated - Chairman, President & CEO*

It just -- you've got to look at the numbers. And even though everybody loves it cheaper, it just doesn't -- it's just not that big a number compared to the area under the curve for the long term. So we've really been thrilled with what we've done at the Renner Road site where we've built our fab 1 and, then to your point, we've got the second facility on that site coming up right now. Cranes are above the sky. We should have that building closed in as we get to the end of this year, equipment moving in in the first half of '22. And we should start having early production coming out of there in the second half of '22. So that's the timing of that coming up.

And that would then give us a 300-millimeter fab called DMOS6 at the Expressway site and then those 2 factories upon the Renner site as well. So we're just -- to me, this one is so obvious. It was so obvious 10 years ago that you just want to continue to grow your 300-millimeter capacity as a percentage of your total output because of the cost benefits, let alone the control of supply chain benefits that you get from it.

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

Got it. Got it. And that will be an additional $5 billion in incremental revenue capacity once it's fully built out?

Richard K. Templeton - *Texas Instruments Incorporated - Chairman, President & CEO*

In that ZIP code is the easiest way to think about it, just how we've parameterized even DMOS6 plus RFAB 1. It's obviously always going to vary depending on what exact mix of process you build, mask layer accounts that go along with it. But that site is really going to turn into a great workhorse facility. It will deliver us probably a 10- to 15-year growth in terms of what that asset looks like and what it will do for us.

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

Got it. Got it. I want to talk now about capital allocation and cash return. And again, you were probably one of the first companies to talk about returning 100% or more free cash flow. Many companies do it now, you were probably the first.

Now at the same time, a little earlier in this conversation, you talked about the potential opportunity to reduce share count depending on valuations. And we look back the last few quarters, you guys haven't bought it back hardly any stock. And I think this is the first time in a while that your kind of total return is actually under 100%. And so I guess, how do we square that circle? Like is that just -- I mean, is it just a matter that you guys are as disciplined on the buyback as you are on everything else? Or like how do we think about the reduction in the buyback in recent quarters?

Richard K. Templeton - *Texas Instruments Incorporated - Chairman, President & CEO*

Yes. Stacy, I think Rafael answered that pretty well in April when I think he got a version of that question on the earnings call of, 100% doesn't mean by week, by month, by quarter or by year. It means over time. And the short answer is, yes, we try to be very disciplined. We look at that return of capital with the same discipline that we look at putting dollars into R&D or dollars into CapEx because it really is our responsibility of how we allocate those dollars most effectively for the owners.

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

Got it. Rich, I want to go to a few of the audience questions because we're getting close to the end of our time, this goes very quickly. Somebody is asking about the tie-up -- the forthcoming tie up between ADI and Maxim and asking what you thought it might do, industry rationality or competitiveness, if anything?

Richard K. Templeton - *Texas Instruments Incorporated - Chairman, President & CEO*

Yes. I would just go down the path because I've had that -- a variation of that question for, as you noted, Stacy, 4 or 5 years now with different acquisitions that have taken place in the chip market. And I think, in general, the chip market has been pretty well-behaved for the past 7 or 8 years to where if you're disciplined, where you focus, you do a good job with your investments, you can generate good rates of return.

So I think the market is going to -- and I think M&A has probably been a portion of that discipline, but not the only reason. And then certainly, supply-demand imbalances like we're in right now was even more disciplined to that general environment. So I think the -- you've heard me say, I think the environment for discipline is going to remain pretty good over the next 10 years.

And then in terms of competitive dynamics changing for us, go back to our discussion about how we invest and how we look at our competitive advantages. And I always look at M&A, and I'd say it's something that to change our competitive advantages. Does it change 300-millimeter manufacturing, okay, inside that company? No. Does it change the channel reach and capabilities? No. And so that's the way I think you've always got to evaluate what's happening in the market. So we're pretty comfortable where we are. We're very aggressive. We know what we have to go do, but I think that those investments are going to continue to return for us.

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

Got it. I got time for one more on here as well. Question on like why customers are picking a TI chip over the competition? Is it just portfolio breadth? Is it reputation? Is it availability? Like what is it about TI? Or frankly, even one of your competitors that drives a customer like to one-to-one supplier or another?

Richard K. Templeton - *Texas Instruments Incorporated - Chairman, President & CEO*

Yes. To me, it begins with very simple, who makes it the easiest for customers to find, evaluate, select, put it on the board and, then once it's on the board, have no issues. That's a design engineer's dream, okay, in terms of what they want to be able to do things. And so everything that was talked about in that question is what you got to do, you have to have breadth because that way, if the design engineer comes to your site, they know they're going to have options to be able to get to a good answer. You've got to help them get to that good solution and then go all the way to the end. Yes, it does help when you've got availability and products, okay, because designers don't have to go back and redesign their board. So if we're doing our job well, we're doing a better job than competitors on all those phases as you think about moving from evaluation to production.

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

Got it. So we are at the top of our time, Rich. I'm going to give you your final 30-second soapbox here. You've got a whole bunch of folks on the line, some may be familiar with TI, maybe some not as familiar. Why should investors buy TI stock?

Richard K. Templeton - *Texas Instruments Incorporated - Chairman, President & CEO*

I think the simplest one to me, Stacy, is just that we're going to operate the place like owners, and we're going to operate it like owners that are going to own a place for decades. You'll see it in how we make decisions, how we invest money, how we spend money, how we return money. And that's going to be really that -- what drives us. And that's -- if you got to spend time internal, you would see it, live it and feel it. And that, to me, is the most important thing that that we can promise and commit and then go do.

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

Got it. I think we'll leave it there. Rich, thank you so much for being with us today. I really appreciate it. As always, it's been a pleasure.

Richard K. Templeton - *Texas Instruments Incorporated - Chairman, President & CEO*

Stacy, again, thanks for the opportunity, and I look forward to seeing you on all your times on CNBC with all your exposure these days.

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

I'll try to oblige. Thank you very much.
