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EDITED TRANSCRIPT

QCOM.OQ - Qualcomm Inc at Sanford C Bernstein Strategic Decisions Conference

EVENT DATE/TIME: MAY 31, 2023 / 5:30PM GMT

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PRESENTATION

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

Everyone, thank you for coming today. I'm Stacy Rasgon, I cover the U.S. semiconductor and semi-cap space here at Bernstein. And I can't express what an honor it is to have our guest here today, Cristiano Amon, the President and CEO of Qualcomm.

So Qualcomm, both as a company and a stock, has been through a lot over the last 5 or 10 years, from China to the EU to the FTC to Apple, to Huawei, to everything else, export controls and what have you. Their business model had a lot of waves of attack, regulators and customers, and made a lot of investors gun shy for a long time. They weren't really sure what was going to be coming down the pipe next. And sitting where we are today, like at least structurally, to me, it finally looks like the company is coming out the other side, at least on the structural issues. Virtually every regulatory and customer dispute has been either dismissed or settled in Qualcomm's favor.

Look, the core smartphone business is -- the market, I should say, is really going through a bit of a rough patch now, and I'm sure we will talk about it today. But look, they continue to do what they do best. They're investing and developing the world's best technologies for communication and increasingly other areas like Automotive and IoT and everybody's recent favorite, AI.

So to tell us all about that, it gives me great pleasure to welcome Cristiano. So thank you so much for being with us.

Cristiano Renno Amon - *QUALCOMM Incorporated - President & Chief Executive Officer*

Thank you. Thank you. My pleasure to be here.

QUESTIONS AND ANSWERS

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

I'm going to grab this. (Operator Instructions)

Cristiano Renno Amon - *QUALCOMM Incorporated - President & Chief Executive Officer*

That's a long list of questions, right?

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

It's a long list. We won't ask them all.

So look, Cristiano, it's been a long slog over the last several years both for you, and I would say, for investors in the stock. And again, we'll talk about the near-term stuff. But I was wondering if you could talk just a little bit about the journey that Qualcomm has been through over the last 5 or 10 years? What does the situation look like today versus maybe where people were looking at 5 years ago?

Cristiano Renno Amon - QUALCOMM Incorporated - President & Chief Executive Officer

Very good. Well, it's a very different company, and maybe I'll elaborate on this. If you look where we are right now as a company, and it's probably better for me to answer this question, talking about the picture today and then compare after what the company was in the past. But if you look, I think we have been really focused on stabilizing the licensing business. Licensing business is the world's largest IP license business. Very stable, generates great cash flow, and I think we basically took the license business to every possible test known to man. And it proved to be a valid business model that is very stable. Everyone is license paying on Apple and (inaudible) the spectrum all the way to Huawei in the other end of the spectrum.

But the reality is I have not said that before, but we have the licensing business and the company -- the rest of the company is really a very well-focused semiconductor company today. No, it's -- I almost think like Qualcomm is now QCT that just happens to have a licensing business, and we've been very focused in the semi space. And we realize that there are a lot of -- that there is a lot of demand for IP. Qualcomm has some very unique and well-positioned IP. And we realize there's demand beyond phones, whether it's transformation automotive, the transformation of industrial Internet. It's what's happening with some of the new trends. I'm sure we're going to talk about AI. But also the thing about merging the physical digital spaces, the conversions of PC and phones, so we realize we need to diversify the company, leveraging our IP.

What is really nice about this model and we demonstrate it. Because we have this IP that scale across connectivity, computing and on device intelligence, we can actually make the new growth markets accretive to margins as it just gets more scale to R&D.

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

Is that the gross or operating margins you're talking about when you --?

Cristiano Renno Amon - QUALCOMM Incorporated - President & Chief Executive Officer

Operating margin.

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

Okay.

Cristiano Renno Amon - QUALCOMM Incorporated - President & Chief Executive Officer

And when you look about that, that's how the company is very different than it used to be. Having said that, and I know we're going to spend a lot of time on handsets. We also have...

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

We have a lot of time to spend.

Cristiano Renno Amon - QUALCOMM Incorporated - President & Chief Executive Officer

We also to look at handsets very different. I think it's a mistake to look at what happened in 3G and 4G and say, that's the same thing in the reality. Look, handsets is a mature market. We have been focused on the value share of that market. We even upgraded the long-term operating margin for QCT because of that, and I think that's where we are today.

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

So let's talk about handsets. So it's -- I was sort of a closet smartphone (inaudible) for a while. Clearly wrong. But the reaction was pretty simple, it's that like unlike PCs where we had a ton of demand pull forward in the wake of COVID and everything, smartphones are just sort of horrible the whole way through, like the end market, right? And at least you didn't have like demand pull forward, at least apparently, to work off. It does look like we did because you're in an inventory correction now. It doesn't look like there was a ton of, like, deliberate overship going on, like we saw in some of the end markets. It just seems like the market itself, my view at least, is that they just continue to get weaker versus -- I mean is that what's going on? I mean, how much longer can it continue to get worse? At some point, it has to stop, right?

Cristiano Renno Amon - *QUALCOMM Incorporated - President & Chief Executive Officer*

Look, since I know there's a lot of interest in the handsets, maybe what I need to do. And I need a few minutes because I need to talk about short-term, mid-term, long-term.

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

That would be fantastic.

Cristiano Renno Amon - *QUALCOMM Incorporated - President & Chief Executive Officer*

That's going to be easier to understand. So let's just talk about the short-term. What we saw with the handset market size was before the pandemic. Through the pandemic and now, it's a market that it had decline in size. We saw a couple of things that we like during this declining market, and I think that was executed by the company. We have continued to see consistent. It had not it had not changed. Market mix get richer, pandemic drove people to buy a better phone because they're using to go to school, they're using to work, so mix improved. We gained some share as the market changed with Huawei, we also gained some share at Samsung, but the market size is smaller.

Now when we look of what is the normal rate of the market, which has been depressed since the pre-pandemic levels? The normal rate, you have to take 2 things. You have to, first, you have to eliminate some of those things that are very cyclical in nature. Inventory correction, and then China needs to go back to its normal state, right? And let me elaborate this just real quick.

On the inventory correction, people ask me, how should I think about the normalizing? If you actually average '22 and '23, it's probably a better picture of what the market is. There has been a supply chain crisis. Everybody, my customers when they were screaming, asking for parts, like they're telling other CFOs. I can never be in the situation again, all inventories went up. Assuming supplies, massive amount of inventory, and that needs to get corrected. The other thing is, if China is going to grow 5% GDP as identified by the government, there's going to have to be some consumptions. We just have not seen that yet. Do you want to...

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

What I was going to say on China is, I mean, China has been declining every year for a long time, too. It's like I don't even know what normal in China is anymore.

Cristiano Renno Amon - *QUALCOMM Incorporated - President & Chief Executive Officer*

It's better than what it is right now. I feel that there is going to be a rebound, but we can't really predict a time.

But now, let me talk about the mid- and long-term. Handset, it's a very -- it's the largest consumer electronic market, but it's a cyclical business. And we have gone through cycles. There are going to be some super cycles. From feature phones to smartphone was a super cycle. Then you had on the smartphone transition, you have some mini cycles. I remember one that I like to point was bigger displays. That's what -- bigger displays drove Samsung up. That was a big change in Apple as well. Then you have the transition to 5G.

And so the market really has 2 aspects. Because it's cyclical, phone is a great proxy of economic activity. If consumers don't feel confident about disposable income, they postpone buying a new phone. Eventually, you're going to have to because the screen is going to break, the battery is going to run out, the memory is going to run out. But consumers become -- so we see the elongation of replacement rates when you have macroeconomic issues.

The other thing is, will there be a next cycle that could create an upgrade cycle? We like to think, even though we can't really predict the timing. But if you believe in the current AI hype and you think about all those different use cases are going to happen, those are going to come to phones. And eventually when that happens, people are going to want to have an AI phone. It's hard to predict the timing, but there could be another upgrade cycle that we can see with devices. It's a cyclical nature of the business.

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

Got it. We'll get back to the AI phone in a minute. So I get the point on units. At some point, we'll -- hopefully we'll stabilize.

Cristiano Renno Amon - QUALCOMM Incorporated - President & Chief Executive Officer

Look, we monitor activation because there -- our chips when they get activated, they ping our server. And when we look at the difference between sell in to the channel and sell out, definitely, it's not as bad as the sell-in numbers, and that's why those cyclical things need to (inaudible).

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

Do you have any idea for what the degree of under shipment is? Because I can track it pretty well like in the PC space, I have a little harder time in smartphones.

Cristiano Renno Amon - QUALCOMM Incorporated - President & Chief Executive Officer

Under shipment means...

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

Well, we're in the inventory correction. So by definition, you're undershipping demand. Do you have a view for how much?

Cristiano Renno Amon - QUALCOMM Incorporated - President & Chief Executive Officer

Look, we have -- that's a very good question, actually. We know how much we sold and we know how much is activated, so it's just math. What we said on the last earnings call was it's taking longer than -- and that's why we didn't feel comfortable calling the bottom. We said it could be a couple of quarters, it could be more, but we know what the math is. Yes. So eventually, this thing it's going to end. It could be, as we said, a number of quarters out.

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

I guess to be fair, you've sort of guided the Android flattish, right? I think the decremental into June was more Apple.

Cristiano Renno Amon - QUALCOMM Incorporated - President & Chief Executive Officer

Correct.

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

Okay.

Cristiano Renno Amon - QUALCOMM Incorporated - President & Chief Executive Officer

So that's a very good observation. The fact that we said, Android is flat, it's a good sign about that correction. And who knows when it -- who knows when, but I hope.

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

Okay. I want to ask about pricing because you sort of mentioned like, again, the handsets have been down for a while. You guys filled it very, very well, like until recently when the inventory thing had -- and a lot of that seems to be pricing. And I don't know if it was direct ASPs, it was -- presumably, a lot of it was mixed, right? I get a lot of questions from people worried about how sustainable that mix up was in those ASPs in that driver. And then the second part of that is people worried about competition, and we've seen price wars in this industry in the past. And I'd argue there's -- it's a better market structure (inaudible).

Cristiano Renno Amon - QUALCOMM Incorporated - President & Chief Executive Officer

I agree.

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

But what are your thoughts in general about the degree that pricing and mix has driven revenues and like the sustainability of that?

Cristiano Renno Amon - QUALCOMM Incorporated - President & Chief Executive Officer

So one thing, and that's an important clarification to make. We did say, and it happened exactly as we said it would be, that once the shortage of supply gets resolved, pricing will normalize. You do have a little bit of an elevated pricing, but it is within our projected range. So that's the first comment.

The second comment is we -- because of the combination of mix improvement, share gains and I think some of the technology leadership, we have been very focused on share of wallet. It's a market that is cyclical. It doesn't have the same growth rate as some of the other markets, so we've been very focused on returns. I think the answer to your question is we have demonstrated, and we'll continue to have price discipline.

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

Got it. Got it. I want to ask about the 2 larger handset vendors and then maybe we can move off of handsets.

Cristiano Renno Amon - QUALCOMM Incorporated - President & Chief Executive Officer

Sounds good.

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

First, I want to ask about Samsung. And so you've clearly picked up share. You were here last -- last year, and I think share was going to 70%. Now, it is in the high end, right? And Galaxy's and Notes announced 100%. And it's -- you get a hoist on your own petard, right? I mean I said like, well, I was already worried about peak Apple, now, I got to worry about peak Samsung, right? So what have you said in terms of the sustainability of those Samsung win?

Cristiano Renno Amon - QUALCOMM Incorporated - President & Chief Executive Officer

Yes. By the way, it's interesting because we get this...

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

You can't win, right?

Cristiano Renno Amon - QUALCOMM Incorporated - President & Chief Executive Officer

We can't win. We get this question all the time, but it's okay because the nature of handsets, the handset market has the fastest cycle of any industry. It's a new platform every year, like, so it's okay. I'm used to getting the questions. So let me answer the Samsung question first. We executed a multiyear agreement with Samsung. Galaxy S23 is the first device of that agreement. We have Galaxy 23.

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

This is the first year of the multiyear agreement?

Cristiano Renno Amon - QUALCOMM Incorporated - President & Chief Executive Officer

It's the first year. We have then Fold and Flip coming, we have the Galaxy 24. So it's more of a question about how do we think about the business when we get to the 25, right? That's kind of, I think, where the question will be applicable.

Here's how we feel about this. And I'm going to give you a list of things because there's never one answer, right? First of all, we have a much more compelling IP for Snapdragon premium tier when we think of 25. 25, I'm bringing my own custom develop Orion (inaudible).

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

This is the NUVIA? Talk about NUVIA too.

Cristiano Renno Amon - QUALCOMM Incorporated - President & Chief Executive Officer

So I'm going to be highly differentiated on a CPU versus what has been an equalizer between us, Samsung and our other competitors. I have continued to make incredible progress with GPU. We're the first one to do ray tracing. I think the -- my competitors are all trying to license different

GPU. That says a lot about the current supplier of GPU technology. We have -- and we'll talk about AI later, but we have an incredible, really, NPU. So by 25...

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

Neural processing unit?

Cristiano Renno Amon - QUALCOMM Incorporated - President & Chief Executive Officer

Yes. So by 25, based on what we see now, if AI becomes more pervasive, that's another degree.

Second thing is very interesting. When we see -- it's public information. But when you see that in many markets, they were not Snapdragon market. They used to be Exynos markets, now, they're Snapdragon markets. I think the Galaxy S23 performance has been great. I have anecdotal data of different markets about the number of times better, so we're going to have about 2 years of association of what has been a great partnership between the combination of Samsung Galaxy brand with Snapdragon brand. And we will continue to be pushing forward and that's not only Samsung, but also the Chinese and some markets drive Snapdragon. So that's how we think about it.

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

Got it. Got it. And then for the Apple question, I guess, just to reiterate the current -- for modeling purposes, the current is the iPhone that comes end of '24, that's where it goes away?

Cristiano Renno Amon - QUALCOMM Incorporated - President & Chief Executive Officer

That's our planning assumption. It's just a little bit of a recap. '21 through the strat plan, we said last iPhone is the iPhone launch in '22. Then I think 3 to 4 earnings calls ago, as soon as we had the information that wasn't the case, we updated, we have the iPhone of '23. No change in the assumptions for '24.

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

Okay. Got it. Yes. Well, I guess when we get to '24, we'll see.

Cristiano Renno Amon - QUALCOMM Incorporated - President & Chief Executive Officer

Me, too.

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

Got it. I want to ask a little about the Chinese handset. This actually this has -- this goes beyond handsets, and clearly, where there's been a lot of geopolitical tension. And we've seen the Chinese come down on guys like Micron, right? And people -- at least some investors tend to look at Qualcomm as a semiconductor vendor who is replaceable. Can you give us your view on the feasibility that like within China, if the geopolitical situation becomes more aggressive?

Cristiano Renno Amon - QUALCOMM Incorporated - President & Chief Executive Officer

Okay. I think for that, I think for investors to really understand this, it's important to understand our position in China because I feel and at the risk of sounding pretentious, I think we're in a very privileged position versus many of our peers in our relevance to the United States as well as relevance to the China market, but a front and center position in China is all the Chinese handset manufacturers, and then I'll name sort of the big ones, Xiaomi, OPPO, Vivo, OnePlus, Honor, all of those in their premium devices, and it's all about Snapdragon 800. Also in the high-tier devices, we have done a lot of good work with the 7 Series. And they have ambitions to expand into -- there are a number of markets that you can argue. There are always going to be markets that China will have an influence. Latin America, Southeast Asia, Middle Eastern Africa and Eastern Europe and some countries in Western Europe, as they expand, they expand with Snapdragon. So that's not replaceable.

So for China, especially for the health of those companies and growth for those companies, it's not replaceable. It's not easy to deploy. I think you saw recently the announcement that OPPO terminated their own (inaudible) development. And I want to go back to your question about Samsung. The CPU, the GPU, the NPU is not in the modem. There's a number of vectors of differentiation, but I won't stop there.

Automotive, I'm actually extremely happy that we have also supported the growth of the automotive in China. Recently, in those numbers, I know that they're incredible. But we just, last week, had a China Auto Show. In China, we have 40 OEMs that launch 100 different model EV cars over the past few years. So we're virtually -- every China OEM is working with us on car to cloud, digital cockpit, and then we have a lot of engagement in that autonomy. So that's another dependence especially their ambition, I think, to use EV as a transition to enter the cars place.

And the other thing that is happening, and I know we're going to talk about that later, but our entry into the PC space, I have designed Xiaomi, I have designed Lenovo, I had designed at Honor, I have a number of designs above both PC, virtual reality devices. And as we spend in our industrial business in China is expanding as well. So I think there is interest on both sides into a stable outcome.

Having said that, I can't make predictions on this because we live in a crazy environment right now.

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

Yes. I got it. Maybe that's a good segue to come off of handsets and into some of the other maybe more interesting markets, so let's start with auto. So auto is small today. It's growing. You gave some targets. Do you want to remind us what those targets are?

Cristiano Renno Amon - QUALCOMM Incorporated - President & Chief Executive Officer

If I'm probably going to -- it will get a \$9 billion by what's the year?.

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

And \$4 billion by '26? Got it. Okay.

Cristiano Renno Amon - QUALCOMM Incorporated - President & Chief Executive Officer

We're on track.

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

We're running what -- you did about \$450 million less this last quarter that just passed. (inaudible) run rate, okay. Yes, okay. So we're on our way there.

Can you talking about the \$30 billion plus kind of like design win pipeline? Can you give us a -- like, what does that look like? Like how far out does it go? Like do you risk weight? I always have a problem with like design win numbers because there's always an assumption on what am I going to sell 5 or 10 years down the line that these things are going to go in. How do you like -- I guess, how do you risk weight or risk adjust that backlog? Like, how confident are you in that number? And over what timeframe...

Cristiano Renno Amon - QUALCOMM Incorporated - President & Chief Executive Officer

I'll tell the only -- we're very confident we are on track. I will tell the only variability that exists in those numbers, which is launch dates.

But one thing that I like about the automotive is a very predictable revenue. And like, for example, if you look at RFPs right now or for cars in '27 and they launch in '27, launch in '28, '25, '26, they're all been designed in. And the only variability is will a particular car company launch on time or they will delay the launch? But the platform, it's very reliable. And then once we launch a new model, there's a number of years that you can predict.

So I would argue that one of the reasons we chose in auto to talk about design win pipeline is because of the confidence level we have in the revenue. We have not updated that number since I think when we provided.

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

September, right? You raised it in September.

Cristiano Renno Amon - QUALCOMM Incorporated - President & Chief Executive Officer

September 22, 2022. And -- but the winning rate has not changed since that time.

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

Okay. What drove the increase in September?

Cristiano Renno Amon - QUALCOMM Incorporated - President & Chief Executive Officer

ADAS. I think it's very significant. We talked about in the long term, probably digital cockpit] and ADAS will dominate the revenue, and some big accounts with the whole chassis. But there's -- another component of it is some design wins of software and defined vehicles because that's architecture, the car is also changing. .

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

Got it. So let's talk about the software side. So you just bought the Arriver software from Veoneer. So the rest of Veoneer is gone now, right? So that you've carved out the PC one.

Cristiano Renno Amon - QUALCOMM Incorporated - President & Chief Executive Officer

I think if I'm not mistaken, we did announce, I think they sealed the active closing.

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

Okay. Got it. Okay. That's right. What does that bring to the table? Why did you need that? Like you needed it enough to actually go over the top on that deal with (inaudible), right? I guess you sold the rest of it back to -- was it (inaudible)? Yes. Okay. But why did you feel -- why did you need do that?

Cristiano Renno Amon - *QUALCOMM Incorporated - President & Chief Executive Officer*

Excellent question. So -- and I think that's what is really setting us apart I think, and I think it was the right target to complement our Ultra business. What we got from Veoneer is Arriver, which is a computer vision stack for assisted driving and autonomy. So -- and what we did, you should think of this -- of a combination of the Qualcomm assets, you should think about this as there are multiple pieces that fit in their puzzle. We used to have our own stack.

We have been doing a lot of cars, driving in San Diego for -- and other cities for a number of years, so we developed our stack on to drive policy. Veoneer brings a proven stack for computer vision. Think about the computer vision SoC, front-facing camera, rear-facing camera, 360. And then on top of that, we have this partnership with BMW, which is very unique which is we're jointly developing the driver policy software, and we have rights to the stack that we can offer to our OEMs.

So what happened when I put all those 3 things together, we came out in the ADAS as a viable alternative of a proven stack. And a stack that we can scale from entry-level ADAS, which I think is going to go to every car, all the way up to 3 plus and 4. So I think that's -- it's not about creating services, it's exactly about providing a full solution for ADAS, including a proven stack.

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

You mentioned BMW. So I was wondering if I was reading too much into that, but like BMW, they were the original launch partner for Intel Mobileye, first one (inaudible). Even before Intel bought Mobileye. Intel bought Mobileye about 6 months after that was announced, and we didn't really see very much. And then all of a sudden, I see they're going to you for vision and so symbolically, that seemed important to me. Like am I reading too much into that?

Cristiano Renno Amon - *QUALCOMM Incorporated - President & Chief Executive Officer*

You're not. It was by design. They were the first company to design Mobileye, the first company to design Qualcomm in ADAS and autonomy.

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

Got it. Okay. I guess most of the auto makeup today that was not the stuff, most of it say it was. Is it connectivity and infotainment and...

Cristiano Renno Amon - *QUALCOMM Incorporated - President & Chief Executive Officer*

Yes. Well, we're starting to see digital cockpit started to become material in the financials. Over time, it's going to dominate since it's a longer silicon content. And then ADAS will come in late.

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

Until now and like in 5 years or 10 years, what do you think your content opportunity?

Cristiano Renno Amon - QUALCOMM Incorporated - President & Chief Executive Officer

Look, I don't think we -- I don't remember if we gave a range of the number of dollars, but I'm going to answer it qualitatively.

The content today, and it varies. Like one of the things that has really positioned us well with our auto platform is actually, we can scale. We took that mindset from phones. We can scale from a premium car all the way to an entry-level car with all those technologies. But we have -- we sell a full module for connectivity on the C-box, not only the chip but with an entire module. You actually have the ability to write applications on that. And we have -- so that's module. It's one revenue stream.

The other one is digital cockpit. It could be 2 SoCs, it can be 1 SoC. It has multiple tiers. It powers the dashboard, the infotainment, rear seat entertainment, smart mirrors, head-up display.

Then the other 1 is the ADAS, it's the computer vision SoC. For a number of different cameras you put it in, the drive policy SoC, that is very high performance inference. That's where we use our AI 100, and it has server level performance of AI. For example, GM Super Cruise, Ultra Cruise is all running on our platform, which is based on the same technology that goes into AI 100, and that drives significantly higher silicon and revenue content.

I think the last 1 that we're going to add to it is the central computing end unit for the software-defined vehicle.

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

Got it. So like how do you differentiate against like video or mobile? Like, is there any other sort of like public companies that have full stack solutions? I mean you mentioned this like sort of scaling from high-end (inaudible). Is that what it is? Or is it...

Cristiano Renno Amon - QUALCOMM Incorporated - President & Chief Executive Officer

Yes, so it's a great question. We take a different approach. We take a systems approach to this. And how we started thinking about this was like, okay, so investors are asking car companies 2 questions. Are you electrical, but are you digital? That's where we come in, the digital part. So we think about, can we create a full platform with a number of competencies across multiple tiers? So unlike our competitors, we cover everything. We cover all the connectivity of the car, all the digital cockpit options from premium to low, and ADAS from premium to low in autonomy. So I think we compete with different people at their respective spaces.

One thing that is very unique, for example, which has resonated very well, and you can see how our competitors don't have that capability, is what we announced Flex. In the same SoC, I can do ADAS and IVI, which now allow some of ADAS to propagate down and I can leverage the stack. I can leverage same SoC. The other thing that was differentiated, how we think about this thing.

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

(inaudible) what, in vehicle infotainment or...

Cristiano Renno Amon - QUALCOMM Incorporated - President & Chief Executive Officer

Yes, or digital cockpit.

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

Okay. Got it.

Cristiano Renno Amon - QUALCOMM Incorporated - President & Chief Executive Officer

The other things that we did, we developed a lot of -- our software business -- our auto business as much as software as it is silicon. We develop a platform that we can, for example, we're running 1 type of OS and it's likely (inaudible) or fall tolerant with a lot of redundancy for the dashboard. We run a different OS for the infotainment, all using a hypervisor in the same chip. And now with Flex, we even bring ADAS with different levels of security and redundancy. So I think it's very mature.

Look, I'm very proud. I think I've been -- in a short period of time, I think we're working with virtually every company, and this year, we got the GM Supplier of the Year award. So for me, it tells that we're now inside the tent of the automotive industry. I think we graduated as an automotive supplier. We feel good about position there.

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

Got it. Do you want to talk a little bit about the recent acquisition you did in the space, the (inaudible)?

Cristiano Renno Amon - QUALCOMM Incorporated - President & Chief Executive Officer

Yes. Look, we have been very passionate about this. It's just -- and this is because of how we think about this, maybe it's our mobile heritage, right? When you have a -- like we talk about the car and when we talk about the car, with now the car is connected to the cloud. The car has services, you have all of the screens, all the computer screens. But what if you zoom out and you see a network of connected cars? So that's the concept of intelligent transportation.

So we're also making some strides as part of our growth strategy in Auto with 2-wheels, scooters, e-bikes, motorcycles. So this -- with Autotalks, Autotalks allow is a technology that we can leverage on CV2X, both the SRC and CV2X, for car-to-car, car-to-bicycle, car-to-pedestrian car-to-traffic light, and basically to drive that and try to create a traffic intelligent transportation at the top. So I think there's going to be another wave of growth, and it's about building on those connected platforms and having a network effect.

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

Got it. Got it. So we switch over to IoT (inaudible). So I know the near term has been a little challenged. Is this just a sort of a typical consumer inventory correction right now?

Cristiano Renno Amon - QUALCOMM Incorporated - President & Chief Executive Officer

That's correct. Then we saw some of that in the enterprise, as some of the enterprises have been careful with their IT spending in the current environment. And so that's kind of -- I think Akash talked about on the last earnings call.

The IoT is important. I think the term IoT, I know we use them but (inaudible)

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

By the way, this can mean anything you want it to mean.

Cristiano Renno Amon - QUALCOMM Incorporated - President & Chief Executive Officer

You're not alone. But I feel our definition of IoT is different, right? So don't -- when we say IoT, I think it's a mistake to think, this is going to be a microcontroller or connectivity into a smart appliance. No. It's a number of different things. Tell me where you want me to talk about.

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

Well, I mean just like what do you sell in this business?

Cristiano Renno Amon - QUALCOMM Incorporated - President & Chief Executive Officer

That's a very good question.

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

Because I've got a model, and it's got a line in it that says IoT, and I throw a number in there. And I love that something like...

Cristiano Renno Amon - QUALCOMM Incorporated - President & Chief Executive Officer

No, don't do that. There's a lot of things in that IoT segment. So I am going to talk what's -- I think I'm going to take an 80-20 rule. I'm going to talk what's really important.

So our IoT, we divided in -- we talked about it, in what we call consumer, networking and industrial. But consumer, it's more -- you understand when I explain it. It's consumer and commercial there. What's in each one of those buckets? In consumer, we have primarily 2 big bets. One bet is the transition of the Windows PC to modern mobile SoC. We are the sole partner of Microsoft in the transition to an arm instruction set and mobile SoC.

If you look of the Apple M Series, it's very clear that there is an opportunity there, and we have been on this journey with them. We have developed our SOC. It has our own custom CPU that came after the revision, it's the Orion CPU. It has a lot of AI. I wait to you to ask the AI question to elaborate. But that is one big piece of the IoT consumer bet.

The other one, I know investors used to like that a lot. Now, it's not that much.

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

I'm not talking about the metaverse any more.

Cristiano Renno Amon - QUALCOMM Incorporated - President & Chief Executive Officer

Yes. But it is just a matter of time. I think the merger of physical digital spaces with the reality, augmented reality, mixed reality. And here's -- so that's another bet. I think we're working with all the large ecosystems that bet on Qualcomm silicon with the sole partner of Meta for their Quest devices. We announced a partnership with Google and Samsung. We announced a partnership which we've been -- already deliver on with Microsoft. We're working with (inaudible). We're working with all of the other China ecosystems.

So here's how I'd like to think about that. Like I told you, the PC is, if you saw what Apple is doing, you can see that there is a play for us in Windows. How I think about this Metaverse is let's just wait. There's a rumor that Apple is going to launch something. I'm sure it's going to be incredible. And when they launch something, developers are going to think, well, they may sell multiple tens of millions. They're going to develop a lot of content.

All that we need to do is to just carry over on the Android ecosystem or the other ecosystem. That's an easy way to think about it. I think it's more complex than that, but that's another growth opportunity we have in the IoT consumer space.

In the networking space, there are 2 big ones. It's a 5G fixed wireless access or high power 5G for broadband. The way you should think about this is in broadband in the world, there's only 2 options. Copper is no muss, right? And then with cable, there's so much you can do about the uplink. So there's fiber, and if you cannot get fiber, it's 5G. We've seen opportunities in both develop markets, we see what T-Mobile, Verizon is doing, but also developing market...

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

Let's talk about India in particular for this, right?

Cristiano Renno Amon - *QUALCOMM Incorporated - President & Chief Executive Officer*

India has an ambition to connect 100 million households with 5G, so it's a big opportunity. That's into the IoT network. And the other thing in the IoT networking is WiFi access point. I think most people don't know, they think of Qualcomm still as a comms company for cellular. But we're the #1 in WiFi, both client as well as the access point. There's a lot of opportunity of Wi-Fi 6, Wi-Fi 7 enterprise.

The last piece of IoT is IoT industrial. That's a very long tail, very divided by vertical front. I'll tell the big ones that is driving most of our revenue. Retail, then you have smart building, you have energy, you have oil and gas, main effects (inaudible).

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

Is this Wi-Fi? is it compute? Is it cellular, like what...

Cristiano Renno Amon - *QUALCOMM Incorporated - President & Chief Executive Officer*

All of the above. So what it is think about companies, they're building digital twins of everything. So we provide connectivity, connectivity plus processing, connectivity plus edge intelligence. So it's highly leveraged of our road map. It's -- it basically leverage the R&D and chips we do for many other segments, and that's the largest SAM. It's just take a while to build it.

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

Yes. Got it. So let's talk about AIs then. So where does AI sit? I mean, is it a handset play to like keep content alive? Or is it an edge compute and IoT? Or like where are the big opportunities for Qualcomm in NII? And how do you see that playing out?

Cristiano Renno Amon - *QUALCOMM Incorporated - President & Chief Executive Officer*

Okay. Look, I'm obviously very excited about this, and it's not just because of everybody is talking about AI. We've been investing for this for 10 years, right? And here's what I would like to do.

I would like to paint my view of the landscape. And then after I paint a view of the landscape, then I talk about what it means to Qualcomm. Is that okay?

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

All right.

Cristiano Renno Amon - *QUALCOMM Incorporated - President & Chief Executive Officer*

So let's just talk -- I'm going to remove Qualcomm for the equation for now.

A couple of things happening. First of all, those large models -- and you saw with ChatGPT, they made a lot of progress. It's in a very short period of time. And since it became open, it's remarkable to see the number of different applications, start-up companies trying to do things. Whether they are new foundational models coming from other large companies or the open source community, but also how they build on plugins or foundational models and do different applications.

It's fascinating to watch. We have seen people from retail saying, look, I would like to train a model on everything that I have in that store that day. Will you come into the store, be my customer, you say, I have \$50. What should -- I have 4 people for dinner, what should I buy? I'll give you a shopping list and how to navigate through the store. Whether those things will pan out or not, but there's ideas left and right. So think about what you see today and how that's going to be 12, 24 months from now? I think there's a lot of opportunities.

Second layer of conversation. It's clear now with those models that you can rely solely on the data center. Like there's all those different calculations. But if you -- let's just say something as simple as you're searching on Google. And today, I think I'm sure many of you do that, and there's billions of people that were doing it. All of a sudden, you change your behavior as a user. You start chatting about the (inaudible) -- you don't go click on all the links and see what you want, you start asking questions about it.

Well, think about a ChatGPT tree with over 200 billion parameters. For every word that you start seeing, those are tokens, right? You run the entire model, you run. So the cost in the data center will grow exponentially, and I don't think the answer is you're just going to do this in the data center. That's why we believe that there's going to be this hybrid model. That model is going to get smaller. There's going to be models that you're going to run locally on devices and -- or the device will give the head start, based on context available for you, to the cloud. That is already happening as part of the conversation about what the future of those thing is.

Okay. The next -- I have just 2 more context and I'll answer your question.

The next way to look into this. If you look at the history of computing, and I look at AI is accelerating computing. Just use NVIDIA term, how they describe themselves. So CPU started with IBM on the mainframe, then eventually, it became a personal computer. Some people didn't believe in that time that it will become a personal computer, and now, it's in the palm of your hands over a smartphone. It's going to be no different for accelerated computing. It's going to propagate, and for different reasons. Maybe there are different applications that are going to be built on the edge, on the devices, or the edge is going to complement the cloud. Those are 2 valid answers.

And when you think about that particular case on the edge, like for example, one of the things that happened with us. As soon as ChatGPT was open, I talked to our GC and we put a policy out. Our engineers can't source code to ChatGPT and ask, like, check my code because once sent, it is gone. But if you see the conversation, a lot of the enterprises want to do those things locally on the device, depending on what the application you're using.

And the last point is in the history of computing, there's always the competition between the vertical player and the open horizontal computing platform for everybody else. That was the story of Macs versus Windows, that's the story of iOS versus Android. That's going to be the story of AI. So there is an incredible, I think, platform and moat built by NVIDIA with their software stack and CUDA.. But every other company that I talked to, they're looking in what is going to be the open programming interface for AI for both training and inference. That creates opportunities.

So with that context, now let me just translate into why are we excited about this at Qualcomm, why are we talking about this, and some of the things we're already demonstrating.

First, from a technical standpoint, we've been preparing for this. So there was no surprise. We're the only company that could demonstrate stable diffusion running on a phone. Even if you put it in airplane mode...

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

Was it (inaudible)?

Cristiano Renno Amon - *QUALCOMM Incorporated - President & Chief Executive Officer*

Well, that particular model was 1 billion parameter. A chip that we're going to demonstrate and launch this year is over 10 billion parameter. Next year, in the phone, 20 billion parameter. In the PC, 20 billion parameter. In the car, we're talking about 60 billion parameter.

So that -- so the first thing on the technical side is we have a very efficient -- we have GPU assets and we have CPU assets, but also we have an NPU asset. It's a very efficient way of doing it. Just to prove if you want to believe, it's the Qualcomm way of doing inference unique, and I'll give you 2 data points.

One data point is the reason we won big in auto for autonomy is because if you put a server on the trunk of a car, you're taking away from the range. So you have to be very efficient. Your power envelope's very small. On the phone in particular, so that's where our mindset comes in when we think about developing those things because it has to scale from phone up. In the phone, if I add a lot of computation for everything you're doing, you have a copilot of every app, you're going to say I still want a full day of battery life, so you have to do things a little different. So that's why we have the performance per watt advantage. And what are the use cases?

In phone, we're starting to see now since we demonstrated stable diffusion, a lot of our customers thinking, I'm going to build a different set of applications, user experience. And by the way, those are the ones that we know now. We -- who knows what's going to happen? But for example, photograph. You take a photo, let's say, I take a photo of this room. And I just -- with text to image, say, change the background to Tibet. And we think comes over the new picture, unique picture you share. How you do text-to-image, image-to-image, image-to-video, all of those things. Easy to see how consumers -- but also some of the things that you see happening with enterprise application copilots.

Let's shift to PC. We made an announcement with build. All this conversation about hybrid AI, Microsoft is talking about it. And we can run ChatGPT locally. It's a smaller version, locally. In our SoC, they were doing to enter the next-generation PC with Microsoft with an ARM CPU.

So when you think about that, that's a confidence builder on our PC plan, right? The Microsoft talking about the ability to have all those AI experience. The car, it's just the beginning of the conversations but they're very exciting, because natural language is a very good user interface for behind the wheel. All of those things that you have to go in and I want to search or navigate, all of those things, it completely changes. I like to think as a teenager, I watch Night Rider kits, and I said, wow, we can actually, finally get this thing done. But I think the message here is there's a lot of opportunities for AI for us.

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

Got it. Should we go to the lightning round? We got about 5 minutes left. See what the audience has to say. Let's see if we have questions. We have a few, yes.

You talk about some of the technical hurdles or work you've done to make Windows PC and ARM a reality. And maybe you could talk a little maybe more broadly about what NUVIA is bringing to the table?

Cristiano Renno Amon - QUALCOMM Incorporated - President & Chief Executive Officer

Very good. Look, we knew this is going to be a journey. And we're playing -- that's a typical Qualcomm, I think we're playing for success here, and we knew that it's going to take multiple steps to climb that hill. So that's why we started early. You saw a number of different devices. We knew it will be a small volume, but consider them as going through overcoming the barriers to entry.

So one of the big one was would the emulator that has provided us part of Windows run all the applications? We come a long way. Windows 11 now can run both. Used to run just 32-bit apps, 64-bit apps. We did something very unique which we're doing at Qualcomm. We're actually putting a lot of the hardware[s] in the cloud. The developers can log in and they be able to upload their application, see how it works. They do monkey tests. They can see how their native application works.

Microsoft, we now have the A team of Microsoft working with a lot of the enterprise applications. For the past 12 months I've been on calls with CEOs of enterprise applications, working them, is it ready, when is going to be ready. So we'll be building this. And the proof of that is that we have a lot of commercial designs now across Dell, across HP, across Lenovo, Acer, Asus. Because the enterprise is really did real test, whether you can you can have the ability to do that.

So it has been the journey. I think we're getting the end of it as we launch in '24.

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

Got it.

Cristiano Renno Amon - QUALCOMM Incorporated - President & Chief Executive Officer

You want to -- You asked a question about NUVIA. .

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

Yes.

Cristiano Renno Amon - QUALCOMM Incorporated - President & Chief Executive Officer

I think NUVIA it's -- we're aspiring to build really the Apple compete platform, I think, for the Windows ecosystem. So we know what the target is, and I think we're doing a good job. We're going to announce the specs of the chip very soon in our Tech Summit, and hopefully, we'll impress everyone.

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

Anything you're willing to say on the ARM lawsuit, or?

Cristiano Renno Amon - QUALCOMM Incorporated - President & Chief Executive Officer

Look, it's unfortunately that (inaudible) we also don't. But look, at the end of the day, we're their largest customer, and they're suing their largest customer. We have broad rights to the IP. We have an architecture license, which also predates NUVIA, but it's okay. The trial date is set for 2024 after we launch our SoC and we're working through it.

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

Got it. You might not like this question, I'm going to ask it anyway, so.

Cristiano Renno Amon - *QUALCOMM Incorporated - President & Chief Executive Officer*

That's okay. I'll like it.

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

What gives you confidence that Apple won't find a way to challenge the licensing fees that they pay once (inaudible) in-house?

Cristiano Renno Amon - *QUALCOMM Incorporated - President & Chief Executive Officer*

Okay. So I will -- we get this question all the time. Licensing and chips are not the same thing. So here's what I'm going to tell you.

If you look at the structure of the market right now, especially in markets that IP is very protected and relevant, it's a 2-horse race. There's an iPhone and there's a Galaxy. We just renew Samsung at the same terms, 2030. And basically, I cannot think of a better benchmark. That's just one data point.

Second point is when we had our skirmishes, there's a lot of patent litigation. I think both companies decided to let those things continue, and some went all the way to Supreme Court and they've been validated as infringing patents. So if you think about Qualcomm is -- has a number of very relevant IP. I think as I said before, I think we have a great relationship with Apple. I think we expect things to continue as they are on the licensing front.

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

Got it. And we've got 30 seconds left. I will give you your self box. You've got a room full of investors here. Why should they buy Qualcomm stock today?

Cristiano Renno Amon - *QUALCOMM Incorporated - President & Chief Executive Officer*

Look. If you're looking at Qualcomm for a quarter after quarter, we're going to a cycle on handsets. Handsets, we're always going to be focused on handsets, but there -- we've done a great job on diversifying. Now the known handset, which has much higher growth rates, it's 30% of the revenue. I was joking with you, if we lose the Apple mode, then you will be able to see how material I think the diversification is up, right? Yes.

The second thing is when you think about the 5 to 10 years horizon, our IP is very relevant. If you look at our IP today, we have leading IP in connectivity. Everything is connected, both seller and Wi-Fi. We have leading CPU, leading GPU, leading AI. And with just the beginning of those things, we had unlocked the ability to take our technology to other end markets. I think the company is executing. And what I like about it, everything that I told you, whether it's the PC, whether it's the XR, industrial, you -- this is not a PowerPoint presentation. You can measure the progress. It's very easy to see. Probably those things take a little bit of time, but we're just on our way executing on our strategy.

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

Got it. I think we'll leave it there. Thank you so much.

Cristiano Renno Amon - *QUALCOMM Incorporated - President & Chief Executive Officer*

Thank you so much. Really appreciate it. Thank you.

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