REFINITIV STREETEVENTS

EDITED TRANSCRIPT

QCOM.OQ - Qualcomm Inc at JPMorgan Hardware & Semis Access Forum

EVENT DATE/TIME: AUGUST 16, 2023 / 7:45PM GMT

©2023 Refinitiv. All rights reserved. Republication or redistribution of Refinitiv content, including by framing or similar means, is prohibited without the prior written consent of Refinitiv. 'Refinitiv' and the Refinitiv logo are registered trademarks of Refinitiv and its affiliated companies.

REFINITIV

CORPORATE PARTICIPANTS

Akash Palkhiwala *QUALCOMM Incorporated - Chief Financial Officer*

CONFERENCE CALL PARTICIPANTS

Samik Chatterjee *JPMorgan Chase & Co, Research Division - Analyst*

PRESENTATION

Samik Chatterjee - *JPMorgan Chase & Co, Research Division - Analyst*

So post-lunch session. I'm Samik Chatterjee again. Thank you for being here. I have the pleasure of hosting Akash Palkhiwala, CFO of Qualcomm.

QUESTIONS AND ANSWERS

Samik Chatterjee - *JPMorgan Chase & Co, Research Division - Analyst*

I know you guys will have a ton of questions. So I'll just start it off with a couple here for Akash and then I'll let the audience take over and sort of dive into all the smartphone questions for you.

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

I love those.

Samik Chatterjee - *JPMorgan Chase & Co, Research Division - Analyst*

Let's start with AI. A big driver of discussion at the sessions we are hosting today. You've talked about Generative AI in some of your investor outreach as well. Can you outline your thoughts on why it will be important for edge devices to have AI capabilities? What drives the confidence to have AI like just have that confidence about content associated with AI on the edge devices.

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

Yes. So first of all, thank you, everyone, for attending, and happy to be here. So our view on AI is very simple. It's very much like processing, right? You have processing that happens on the cloud, processing that happens on the device. And we end up -- we see AI kind of happening the same way. We are going to start with the cloud. Eventually, a lot of the AI processing will move over to the device for several use cases. The advantages of doing it on the device are very straightforward.

Cost, of course, is a massive advantage. It's -- in some ways, it's sunk cost. You bought the device. It's sitting there in your pocket. It could be processing at the same time when it's sitting there. So that's the first one. Second is latency. You don't have to go back to the cloud. Privacy and security, there's data that's user-specific that doesn't need to go to the cloud when you're running it on the device. But beyond all of these, we see a different set of use cases playing out on the device.

So if you think about pervasive AI, whether it's a copilot for an office application, or whether it's a copilot or AI being used on top of content that is being created by users, all those use cases requires AI to be on the device. And so we just think there's a whole set of use cases that demand the need for AI to be on the device. We have really strong technology. We think that enables that. Of course, we have the CPU. We have the GPU and both of those cores can do Generative AI, but more importantly, what's going to be critical in the longer term in our minds is to have a very low power neural processing engine that can do AI on the device.

©2023 Refinitiv. All rights reserved. Republication or redistribution of Refinitiv content, including by framing or similar means, is prohibited without the prior written consent of Refinitiv. 'Refinitiv' and the Refinitiv logo are registered trademarks of Refinitiv and its affiliated companies.

REFINITIV

And if you're going to do pervasive AI that happens several times every minute. It needs to be extremely low power and the advantage of having our neural processor is, it can enable use cases like that. So that's kind of our general view on AI. You're still going to do a lot of training in the cloud in my mind, but then the trained models need to be inferred, and the inference running on the device makes a lot of sense. Eventually, in the long term, you could see models being trained with user specific data on the device as well. But that's probably a second step, we'll start with [inference] in the first step.

Samik Chatterjee - *JPMorgan Chase & Co, Research Division - Analyst*

Okay. And how broad do you see the device ecosystem being creative to like just smartphones, how much of a broad reach do you see in terms of these capabilities moving beyond smartphones?

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

So a lot of these use cases and almost like categorize it into consumer, enterprise, and industrial. And the use cases are going to be pervasive on all devices. So if there are consumer use cases that apply to handsets, there are other consumer use cases that are going to apply to PC. We know that PC is going in the direction of becoming an AI PC device already. Same is going to happen to handset. You're going to industrial applications. There is tremendous opportunity to use Generative AI for new use cases, new capabilities that you could not do before, now you'll be able to do.

And then finally, enterprise, obviously, Microsoft has a very clear plan that they've outlined on enterprise applications and having a copilot within each application to enable use cases. So this is not something that remains in one device. It is not something that remains in one tier of device. It goes across tiers, it goes across devices and it becomes something as ubiquitous as just normal processing or computing. Just like every device needs a GPU, it needs a CPU. It is going to have use cases that require a very low-power AI engine, which, in our case, is the NPU.

Samik Chatterjee - *JPMorgan Chase & Co, Research Division - Analyst*

Your announcement with Meta to optimize execution of Llama 2 language models directly on the device. What's the broader vision there? What are the use cases that you're thinking of when you're sort of looking at that implementation?

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

So Llama obviously has tremendously broad application. As it became one of the open -- key open source models, there's a lot of ecosystem that uses the Llama model to run applications and use cases on top. So for us, it's relatively straightforward. We're going to take our advantage that I just outlined, bring Llama for on-device AI.

So this is never goes to the cloud. The entire model runs on the device. And then that automatically brings with it all the ecosystem of applications and use cases that are going to be created. I won't sit here and profess that here's the specific use case that we think is going to drive the adoption. It's not going to be 1. It's not going to be 10, it's going to be millions of use cases. I think that will be enabled in broader ecosystem, and they'll all run on the device in one form or the other.

Samik Chatterjee - *JPMorgan Chase & Co, Research Division - Analyst*

Okay. Interesting. So any thoughts -- early thoughts here of what your TAM for AI-related content would be associated with end markets like if you want to quantify smartphone versus non-smartphone? How are you sort of even thinking about the size of those opportunities?

©2023 Refinitiv. All rights reserved. Republication or redistribution of Refinitiv content, including by framing or similar means, is prohibited without the prior written consent of Refinitiv. 'Refinitiv' and the Refinitiv logo are registered trademarks of Refinitiv and its affiliated companies.

REFINITIV

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

Yes. So if you -- I think coming up with a specific number, it's too early in the cycle, but here's the framework of how we think about it. First is we've seen a tremendous increase in phones, smartphone content, especially for us, especially in premium tier devices over the last 3 years. And so this, to me, kind of drives the content growth going forward in addition to other things, this will become a big driver of how content will continue to grow in smartphones. And so we used to get this -- a lot of questions about, we've seen great content growth. What is going to drive the growth going forward, this is going to be one key driver for us. So that's the first one within phones.

Second is, I think from a competitive perspective, we have technology that's unique. And so this allows us to continue to maintain our differentiation and our advantage as use cases get deployed. In new markets like PC and XR and industrial, where we don't have a very large presence today, I see this as almost like one more advantage that we'll bring with us when we go into those markets.

And so probability of success hopefully improves because now we have something else that's unique that the market is demanding. And then finally, I think you could also make an argument that once as these use cases get deployed, it will drive replacement rates in various edge devices, assuming there's broader adoption. And so we think of that as an upside to not just our handset market, but also the other markets we're going to participate in.

Samik Chatterjee - *JPMorgan Chase & Co, Research Division - Analyst*

Okay. So another way to look at it, I mean, at your last Analyst Day, you had outlined industry CAGR for your QCT handset to be double digits. And at that time, you had mentioned you were assuming flat -- smartphone market to be flat. Obviously, we all know that hasn't remained the case. But when you think about content growth, you were sort of embedding at point, is this sort of part of that content growth that was already sort of envisioned at that point to be double digit or is this upside really to that double-digit growth? How should we think about that?

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

Yes. So the content growth happens in multiple ways, right? Like one is just look at a specific tier and then generation over generation. And if you look at the last 3 years, and we talked about this last year, is the die size if that's a metric for content growth has grown at a 10-ish percent CAGR for the last 3 years. This clearly kind of positions us to stay on a curve like that going forward. But it's not just about what happens within a tier. When these new use cases come in, we see a shift across tiers, which improves the mix. And then when you look at a weighted average content growth, it also helps from that perspective.

So we have a very broad view of this. We don't want to enable this just in the premium tier devices. We're going to enable it across all tiers of devices. And as people upgrade the next set of phones, we think there's an opportunity for upgrades or people buying higher tier phones as they do that.

Samik Chatterjee - *JPMorgan Chase & Co, Research Division - Analyst*

Okay. And then taking that forward, when you sort of see the differentiation Qualcomm has to bring to this market it also raises the question that clearly, the smartphone OEMs would also look at this as an area that they can differentiate on themselves. Going back to a lot of the discussion sort of going around about in-house capabilities at these smartphone OEMs. How do you think about their intent to then invest in-house capabilities relative to the processor and just sort of look to even sort of create that differentiation on their own rather than wait for or rely on Qualcomm.

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

So if you think about how this technology works, it's integrated into our SoC. It relies on CPU, GPU and NPU and depending on which model and which use case you could use any of those engines. And so when we think about the competitive landscape, we've done this for a very long period of time. Number of competitors, if anything, has gone down rather than gone up. .

©2023 Refinitiv. All rights reserved. Republication or redistribution of Refinitiv content, including by framing or similar means, is prohibited without the prior written consent of Refinitiv. 'Refinitiv' and the Refinitiv logo are registered trademarks of Refinitiv and its affiliated companies.

REFINITIV

We've also competed with several internal efforts at the OEMs. And what has held true through the entire process is if you have technology leadership, if you are delivering a chip that is leading node, all technologies integrated, you have a better CPU. We'll have a custom CPU coming in shortly. A better NPU, wireless leadership is intact. When you put all those together, we think we're extremely competitive, and we continue to have the advantages we've had in the past. So we like our position going forward.

Samik Chatterjee - *JPMorgan Chase & Co, Research Division - Analyst*

Okay. Let me open it up to the audience and see if anyone has a question. Any questions? Go ahead.

Unidentified Participant

Maybe just stepping back to the year ago when we started seeing some of the challenges in the supply chain. At that time, you had quantified sort of the inventory impact of about $3 billion to $4 billion, maybe $3 billion of that smartphone, the rest in others. If you look at where we are, is this possible to figure out how much we're undershipping the industry by specifically in smartphone? Because you haven't seen a recovery off of that units are down. I understand that you look at fiscal '23, your comments...

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

So the one framework that I think is relevant is if you look at the 2 years combined, fiscal '22 and fiscal '23, there was a build in a year, there is a drain in the next year, looking at the 2 years combined would be like one framework. The adjustment that you'd have to make to that is the market is lower than what the weighted average would be. So adjusted for market size, I think that's a reasonable way to think about what -- how much we're undershipping and what comes through soon, and you can debate what the timing is, but it almost in some ways when you're looking at the company long term, it almost doesn't matter.

Unidentified Participant

But just going back to the $3 billion to $4 billion sort of number, I understand we have just more, Huawei had a smaller market. $3 billion of that is smartphone. Is it fair to say market is 10% lower, Huawei is a $1 billion. So that $3 billion is more like $1.5 billion impact this year, it's not really growing, so that could be the level of your undershipping the market.

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

Well, rather than getting to the specific math, I think the framework that I outlined would be the right way of thinking about it. So if you do the math of that framework, I think it will probably put you in the right spot.

Samik Chatterjee - *JPMorgan Chase & Co, Research Division - Analyst*

Akash, just to sort of carry on with the smartphone market questions. I think one of the perceptions that investors have right now of the modem or the SoC market is that it's as good as it can be with Apple continue to use Qualcomm right now. Samsung is clearly sort of giving you more share at this point. It seems to be the perception that this is all going to sort of move more steadily towards in-house, Apple moving in-house, Samsung sort of overall coming back with Exynos in the market? Who are we starting to in-source, how do you think about sort of that broader perception? Is that [accurate] that this is sort of a period of time in the cycle where things are as good as they get in the merchant SoC market?

©2023 Refinitiv. All rights reserved. Republication or redistribution of Refinitiv content, including by framing or similar means, is prohibited without the prior written consent of Refinitiv. 'Refinitiv' and the Refinitiv logo are registered trademarks of Refinitiv and its affiliated companies.

REFINITIV

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

So we've lived this market for a long period of time. And I hear this argument every 2 years. And the reality is history would tell you that our position in the market has grown stronger over a long period of time rather than become weaker. And just you go back to pre-COVID versus where we are today. We have seen a tremendous increase in scale in our business, but more importantly, content has increased in a very big way. So we feel very confident that from a technology perspective, we're in a great spot. From a content increase perspective, we're in a great spot. We have our custom CPU coming in shortly. We're going to have the AI neural processing engine that is going to be very important. And when you put all of those together, we're in a very competitive place going forward. There'll be ins and outs through the years, but just when we look at the trajectory, we like our technology portfolio in handsets and our ability to take that portfolio to other markets.

Samik Chatterjee - *JPMorgan Chase & Co, Research Division - Analyst*

Yes. I mean does, in your view, the geopolitical situation sort of change how things have played out versus the prior cycles, particularly when it comes to some of the Chinese smartphone OEMs. I mean yes, you've sort of continued to manage to showcase your technology and sort of expertise to sort of drive that content gain higher, but does it now change because of where the geopolitics is and where customers want to go in the long run?

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

Well, so I think you can look back at the last year and how things have played out, and we've continued to sell our portfolio. For us, what we control and what we think puts us in a good place is the roadmap, is the technology. And as long as we are leading in that, there's always going to be a demand for it. And we're continuing to work with all of our customers, Samsung and Apple, but also the Chinese OEMs and we feel like our competitive position continues to be strong. If you look at year-over-year, what has happened to our market share within the Chinese OEMs between fiscal '22 and fiscal '23. If anything, we have strengthened our market share.

Unidentified Participant

In terms of the kind of longer-term opportunities for what could be done on the device. How important is like phone operating system working in conjunction with SSC. Just curious like what frictions there or what.

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

Is the question specific to AI, I assume.

Unidentified Participant

Yes. Specific to kind of either a personal assistant running on device or kind of bigger opportunities that you think could be really revolutionary for handsets or PCs. Like what work needs to be done from an OS tied with core processor.

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

Yes. So if you think about our kind of key partners as we start working in this direction. Microsoft is going to be a key partner, and we've announced a bunch of work we're doing with them. It not just applies to our PC efforts because they have a vision of pervasive Gen AI within all their productivity applications, including an assistant -- digital assistant -- AI assistant. So they're a key partner as we bring them handsets as well.

Second is Google, of course, Clearly, this is a big priority for them as they deploy new models and new use cases, especially within their own apps, we'll be working with them to bring that to market.

©2023 Refinitiv. All rights reserved. Republication or redistribution of Refinitiv content, including by framing or similar means, is prohibited without the prior written consent of Refinitiv. 'Refinitiv' and the Refinitiv logo are registered trademarks of Refinitiv and its affiliated companies.

REFINITIV

And third, we talked about Meta and Llama, which is -- has become one of the more important AI models out there. And so applications are being built on top.

So we're going to bring them to the device as well. So for us, it's important that we are working with each of these ecosystems. And each of them take advantage of the hardware capabilities we are putting in our chip.

Unidentified Participant

Is there any advantage to doing that, I guess, to put it a different way, like -- do you see a future where Qualcomm should be driving development of the models because having a closed ecosystem of the underlying software and the hardware being from one vendor like there's things that you could accomplish that way that you couldn't accomplish if it were a third-party model running on your hardware?

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

So if you go back to the different hardware that can run models, right, you're going to have CPU, which is more of a standard approach to running models on. Same thing on GPU. There are standards that will be used to run the models. NPU will be our advantage in the long term because of it being a specialized engine to run these models at very low power. And that is where the opportunity to partner closely will be is to put these models that would run pervasively on the device on our NPU optimize it and allow the performance to be better.

Unidentified Participant

Got it. So maybe ask in a different way, like do you see any potential that for model providers or for people who are trying to drive the application ecosystem that it would make sense for them to try to design an NPU type competitor and like build a device where, like we're doing CPU, GPU, modem, but the NPU is like OS specific NPU.

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

In our minds, what would make sense is to have all those engines all available to the application ecosystem and to build it in a way that there's a single SoC that's serving all those applications. Just history [lesson] and phones used to have a bunch of different chips, everything gets integrated into one piece of silicon because size matters, power performance matters, consistency across applications and use cases matter. And so architecture, the integrated architecture has always won in the past. And so we think -- we continue to believe that integrated architecture is going to win. If anything on the PC side, as you look at it, there's actually more integration happening rather than the other way around.

Unidentified Participant

Got it. Okay. No, that makes a lot sense. I guess the piece of like I've always tried to kind of -- you guys do, obviously, a very competitive CPU, GPU and now NPU. But the one piece that like has actually proven very hard to replicate is the modem. So as much as you guys, I feel like kind of try to shift the focus to the other pieces, there's 2 modem providers left standing, and it's been really difficult for even very talented silicon design teams to replicate there. So I guess I'm just trying to understand how you think about the durability of a leading competitive position on edge, CPU, GPU, NPU relative to what we've clearly proven to be a durable industry-leading position on the modem side.

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

Yes. First of all, thank you for acknowledging our leadership in modem like that. I would say it a little differently. What makes us strong are not the parts but the whole. And so that is being very good at parts -- and of course, if you say what is Qualcomm best at in the world, is the modem, no question about it. But the race in phones is about doing the whole -- that is why there have been fewer and fewer players in the industry and then

©2023 Refinitiv. All rights reserved. Republication or redistribution of Refinitiv content, including by framing or similar means, is prohibited without the prior written consent of Refinitiv. 'Refinitiv' and the Refinitiv logo are registered trademarks of Refinitiv and its affiliated companies.

REFINITIV

it's down to a couple of merchant players versus we used to have 10 competitors at one point. Doing everything in one piece of silicon is what is difficult. And so -- the way we think about advantage is we should have the best core, and then we deliver an integrated solution. And so the -- I think breaking down the competitive advantage into one or the other core is actually maybe missing the point on what makes us unique.

Unidentified Participant

(inaudible) smartphone business's ex growth. It's not -- and -- so it's a no-growth industry. And...

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

Units or content.

Unidentified Participant

It's dollars, let's just say dollars, units no growth or low growth, but you might think otherwise, but just not really growing. But with AI, if you're running LOMs, I don't know, 5, 10 growing (inaudible) and the edge, let's say, someday every (inaudible) and your NPU next-gen versions can run these models because you don't want to push it all the way back to data centers, you want to do a lot with the computer at the edge, it makes total sense. Can you at least get this would probably imply a bigger die, bigger ASP and this will be an ARPU -- ASP driver of edge inference compute, do you see that happening? When does it happen? What do you need? What kind of changes need on that NPU computing power envelope to be able to run multibillion parameter models in the edge on your phone.

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

Yes. Everything you said, the answer is yes. We definitely have the strong view -- and I think I mentioned this before you came in that -- going forward, we see these models running on device. We've talked about 10 billion to 20 billion parameters models running on our devices next year. And the way we are making that -- enabling that is through a much more powerful NPU and infrastructure around it. As I said earlier, it will run, models will run on the CPU, on the GPU as well, so it is across all 3. But when you want to run something pervasively, power becomes extremely, extremely important, and that's when the advantage of dedicated processing engine becomes important. And so we definitely see it as a content growth opportunity.

Just when you look back and you look at our revenue per device, it has got very significantly over the last 3 years, and we continue to expect this as one of the key drivers going forward, just as you outlined.

Unidentified Participant

My question was on the smartphone industry. I think everybody said it's ex growth, but markets shrunk 20% in units in the last 2 to 3 years. The last market that was supposed to be explored PC went through an upcycle down, that -- how do you think about it over the next 2 to 3 years? Is this -- is the right assumption just to think about it flattish or at some point, the upgrade rates.

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

Yes. So of course, I'll have a somewhat optimistic view of it. But let's go back to history because usually, there's good things to learn out of it. What has happened in the cell phone market through history is when a new use case or a new inflection point comes in, replacement rates go up. And then over time, it normalizes and then goes back up again if there's another new set of use cases. So what is important for us is, as we look forward, there was a 5G cycle we went through.

©2023 Refinitiv. All rights reserved. Republication or redistribution of Refinitiv content, including by framing or similar means, is prohibited without the prior written consent of Refinitiv. 'Refinitiv' and the Refinitiv logo are registered trademarks of Refinitiv and its affiliated companies.

REFINITIV

During the 5G cycle for Qualcomm content actually grew more on the application processor side than it did on the modem side. As we go forward, we think to Tony's earlier question, like Gen AI and the use cases that, that could bring could drive a whole set of upgrade cycles in the phone going forward. And that's the history of the phone market and the replacement rates is -- we had 2 factors driving the market. We are the total market growing as more people were buying phones but then people who had phones replacing at a certain rate.

Replacement rate has tempered down a bit, we think there's an opportunity for the trade to go up as you go forward.

Unidentified Participant

Yes. I think on the last Analyst Day you think about a multiyear CAGR, where we thought it was going to be flat it's sort of done this. And if that flat number is right, it has to at some point, recover -- or should we think of this as a new reason.

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

I think that's one way of thinking about it. The other way is a bunch of people upgraded their phones in 2021. If you look at a 3-, 4-year replacement cycle, you should get a redo of that next year or the year after. And again, I'm not like saying something unique. It's just that how the market operates. Gen AI obviously sits on top of that as a reason to upgrade as well.

Unidentified Participant

Just 2 questions here. In the context of working with the customer has amended though, your customer is handset-makers, that may have a different view of whether or not your product works better with Meta or not? Just how do you dial that in working with Meta when your customers aren't Meta? I mean not only work well with Meta, for example, right?

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

So if you go back, we worked with Google for all Android devices in the past. Before that, we worked with operators to deploy 3G, 4G, 5G, not our direct customer. You go to PC, we're working with Microsoft, again, not our direct customer in that case. So it's really about enabling the ecosystem and the partners that play a very, very key role. So sometimes the indirect customer is actually maybe as important as your direct customer, and that has certainly been true in our history especially as you go to how the company was created, it's really coming up with technology, selling it to the operator and then driving pull-through with the OEM of that technology. And that's the same model that applies to really everything on the application processor OS side as well, and it applies to Meta relationship.

Unidentified Participant

In terms of like the all (inaudible) uplift (inaudible) multiple device cause. What do you think of actually (inaudible) is there any rule of thumb on how this works in the past content in addition to view in silicon area there, really get a lot more DRAM (inaudible) models and things like that. So I'm just curious in [LOP's] perspective, when they're looking at this, what's the BOM price to get started.

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

Yes. So I'll stay away from talking about an area that I -- honestly, I'm probably not the expert at. I'm sure, a lot of people at Qualcomm can talk about it. I'm probably not the expert -- the way this business, in my mind, typically works the handset business is when you add new capability to a device, pricing largely gets driven by not BOM necessarily, but just ability to charge a premium. And so you've seen that come through where if you say, okay, how much BOM did we add from a cost perspective over the last 3 years versus what has happened to the headset -- handset price,

©2023 Refinitiv. All rights reserved. Republication or redistribution of Refinitiv content, including by framing or similar means, is prohibited without the prior written consent of Refinitiv. 'Refinitiv' and the Refinitiv logo are registered trademarks of Refinitiv and its affiliated companies.

REFINITIV

you would say it is disconnected. I think there has been a significant increase in the handset price versus the cost that has been added to the phone in my mind.

So I think that will be the overlying framework on it. But when you look at the specific costs that we think it drives, it's significant for us. But from a total handset BOM perspective, I don't think it's a massive change. The key thing here is the use cases. How do we get the use cases onto the device so that the consumers go look at that and say, "I want that device", and that drives the replacement rate. That to us is the most important thing.

Unidentified Participant

Can I ask about your software efforts here because, again, you have stuff going on in the data center where people have a silicon and then it's the software that brings the ecosystem together and makes it more valuable than silicon. In case of inference, I mean, you can you can always take a silicon view of it and say, it's (inaudible) performed. Do you think there's a path for you to leverage your software stack for [in fronts] a little bit more? And sort of get developer traction and sort of replicate the bonds being played out in the data center, a little bit more for a bigger premium? Or is that too far fetched?

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

I think there's an opportunity for models to be optimized for our chip and then having developers leverage the optimized model to run users. Now how the business model around that plays out, I think we'll have to see over the next couple of years. But the core framework that you're applying from the data center does apply to devices. There's obviously other players in the ecosystem as well in the device side. So you have to work through that. So I'll stay away from commenting on exactly how I think it's going to play out. We don't know yet. But the fact that we have the optimization to be able to run very large models that others can't does create an opportunity for us to have a stronger position in that conversation.

The other thing I would say is we're talking about phones in this context, right? But once you get outside phones, especially if you get into IoT devices where the ecosystem is a lot different then phones and PC where there's a strong software player, you have the ability to play a bigger role in those devices as well. So I think that's kind of another framework to remember when you think about opportunity.

Samik Chatterjee - *JPMorgan Chase & Co, Research Division - Analyst*

Akash. Let me just try to sort of wrap up the smartphone conversation with, let's assume the size of the smartphone book market is notably smaller than pre-pandemic and it remains that way you don't get an acceleration of the replacement cycle in the near term? How are you thinking about cost structure in both QCT and QTL, which would both be impacted by it.

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

Yes. I mean, so we announced on the call that we are planning to take additional cost actions. We've already exceeded the cost actions that we outlined. For us, the framework is relatively simple. We've talked about specific targets, and this just shows we're willing to take action when the size of the market is different than what we expected at the beginning of the process. And so we're going to execute on that.

Samik Chatterjee - *JPMorgan Chase & Co, Research Division - Analyst*

Switching over to PCs. Where are you with sort of plans in terms of chips for the PC market? What's the progress in terms of the NUVIA chip that is expected for the PC market as well.

©2023 Refinitiv. All rights reserved. Republication or redistribution of Refinitiv content, including by framing or similar means, is prohibited without the prior written consent of Refinitiv. 'Refinitiv' and the Refinitiv logo are registered trademarks of Refinitiv and its affiliated companies.

REFINITIV

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

Yes. So no change to time lines we've outlined in the past. We are sampling the chipset that has the NUVIA team designed cores in it, at this point already to customers. The devices will be launched mid-next year as going into back-to-school and holiday season, that's the typical cycle of PC launches. There is a significant amount of work that we need to do in enabling all these AI use cases. So we come in with an advantage from a Generative AI perspective. .

And then we're very confident of the performance that we're going to have on the chips. So this is not just the CPU that you mentioned, but we're going to have everything else integrated into the SoC with dedicated hardware, right?

So same as phones. We're going to have a GPU that we think is very strong. we'll have the camera. Camera has become obviously a very important part of the PC. It was not in the past, now with video calls and as such, the camera video performance becomes very important. And so we're going to bring everything we've learned into phones into those devices as well. So we're pretty excited about how good our technology is. And now working with Microsoft and the PC OEMs, we think the timing is for us to try to enter that market in a bigger way.

Samik Chatterjee - *JPMorgan Chase & Co, Research Division - Analyst*

I mean not to -- you're obviously presence in the PC market isn't as big as the smartphone, but -- any thoughts on how the PC market is recovering related to the smartphone market? Like do you see it to be a better time to intersect the PC market given the recovery there?

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

Yes, honestly, from our perspective, obviously, given that we're a very, very, very small player at this point. We don't look at the size of the market as a driver. We look at the intersection point for us and the technologies that we bring to the table and the chip we're going to have. So it's really about getting the right flagship devices across the PC OEMs launched with our chip. That's what we're focused on. And size of the market is less important for us, it's really getting the right designs and getting it launched and then consumers picking that vice is what's important.

Samik Chatterjee - *JPMorgan Chase & Co, Research Division - Analyst*

Can you talk about the road map for NUVIA beyond the PC market? What are the sort of -- what is the priority list in terms of which end markets do you want it to hit?

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

Yes. So we -- as we've said in the past, we're going to start with the PC market, but the CPU cores designed by the NUVIA team will be in our phones, will be in our auto market. It will eventually end up in IoT. So is this something that we think is pervasive. It will go through our entire portfolio. It brings performance advantage to us. And so we're going to leverage it.

Samik Chatterjee - *JPMorgan Chase & Co, Research Division - Analyst*

Okay. Any questions in the audience? So maybe Akash then switching gears here. I mean this is obviously the work that NUVIA is doing is a function of strategically deciding that you want to go into custom architectures and sort of move away from off the shelf. Can you sort of revisit why the decision to sort of go into restarting custom chip design plans and then obviously acquiring NUVIA and how do you see that playing out versus staying with the off-the-shelf architectures that you were sort of for a long period of time, very happy with leveraging.

©2023 Refinitiv. All rights reserved. Republication or redistribution of Refinitiv content, including by framing or similar means, is prohibited without the prior written consent of Refinitiv. 'Refinitiv' and the Refinitiv logo are registered trademarks of Refinitiv and its affiliated companies.

REFINITIV

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

So we've had the ambition to go into the PC market. We've seen that our off-the-shelf course. So far, we've had limited success. Apple is an example of custom arm cores, bringing in the right performance vectors and being successful in the PC market. That was one of our motivations is to have a CPU that's good enough for the PC market. And then we have the technology now we can leverage it into other areas as well. But it's relatively straightforward. I think we're always looking for competitive differentiation in the performance of our core, and this was an opportunity for us to get that.

Samik Chatterjee - *JPMorgan Chase & Co, Research Division - Analyst*

A lot of buzz nowadays about risk the architecture and we get asked (inaudible), not that we can answer much of what's going on. But can it up and hold on the smartphone market is a question that we get. How are you thinking about it? What are your thoughts about adoption of it? And what sort of threat does it pose to your NUVIA team as well?

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

I think over time, there is maybe an opportunity for RISC-V cores to be used very broadly in phones. We already today use RISC-V cores in phones not in the main CPU, but in course that go into our audio video, other technology engines, RISC-V is already being used. And so in the future, you can see an opportunity for RISC-V to have broader usage into phones, but we have a presence there already. And for us to be able to leverage it, if the transition happens, we'll be in a good place to do it.

Samik Chatterjee - *JPMorgan Chase & Co, Research Division - Analyst*

Okay. One of the sort of drivers of the addressable market that investors associated with Qualcomm is that you have the smartphone market and the high end of it, but Apple is gaining share in it. You have the PC -- you have interest in the PC market, but again, the high-end Apples gaining share, which leads investors to conclude that your TAM or service addressable market is also sort of pulling back a little bit faster than the underlying markets themselves. Does it drive Qualcomm eventually to sort of look to broaden out beyond the high end markets to more lower end just to then have a bigger (inaudible) market over there.

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

On the phone side, we have presence across all tiers, right? And so of course, we're stronger at the higher end, but we have -- we compete across every single tier. And I'm sure you have the same market share numbers that I do, we have a strong presence across all tiers. So I wouldn't say that our presence in the handset market is only at the higher end. We are -- of course, we have more competitive differentiation at the higher end versus others in the phones.

PC is a very different story, I think, PC to me, you can -- very large portion of the PC market is Windows. And we have the opportunity to become a significant player in that market. And it's less about what percent of the market MAC has versus PC. It's more about how we participate on the PC side. In some ways, kind of the success of an ARM-based core on the MAC side actually creates demand for us on the PC side. So it might -- it's something that is actually -- we become of interest to the PC ecosystem as a result.

Unidentified Participant

If we look at the future OpEx and marketing just to get the brand awareness (inaudible).

©2023 Refinitiv. All rights reserved. Republication or redistribution of Refinitiv content, including by framing or similar means, is prohibited without the prior written consent of Refinitiv. 'Refinitiv' and the Refinitiv logo are registered trademarks of Refinitiv and its affiliated companies.

REFINITIV

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

I mean, clearly, we'll have to invest incremental versus what we're investing today. From a technology perspective, we are already at scale in our minds because you're largely leveraging everything you've done in handsets. And then the software investments that we have to make to enable windows we are already doing as well. So primarily the incremental investment that goes in the go-to-market effort within the PC industry. Typically, that's more scalable as well in terms of how you invest those dollars, but that is an area of investment for us.

Unidentified Participant

In view on the cost margin segment in financial market? Do you feel -- you have the price [eventually] and couple of lower gross margins at beginning.

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

So the most important thing for us is how do we build volume scale within the market. Once you have the volume scale, the ability to calibrate margins is significantly higher, I think. So that's the framework under which we are operating.

Samik Chatterjee - *JPMorgan Chase & Co, Research Division - Analyst*

Before we run out of time, let's move to autos. Any updates on the pipeline of business there? And specifically, if you can dive into what's the pipeline between like cockpit versus ADAS.

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

Yes. So on the last pipeline number we gave about a year ago, it was $30 billion. And we did have a pie chart, we didn't break out the specific numbers. But if you look at the pie chart, you can see that ADAS was the largest portion of the $30 billion. So that has not changed. Within the quarter, in Cristiano's prepared remarks, we talked about all the design wins that we have got within the quarter. So clearly, it's something that's continuing to accelerate. No change to our longer-term forecast that we've provided on the revenue side as well. At some point, we got away from, I think, talking through a design win pipeline every quarter because we've established enough confidence that this is an area that we are doing well in. And we do plan to give periodic updates on it. We just haven't given as yet.

Unidentified Participant

On that pipeline, (inaudible) growth rate auto to get from about $1.8 billion this year is about 30%. Do you feel that that's front-end loaded, back-end loaded just sort of as the growth rate? I know the absolute dollars are probably back-end loaded.

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

We haven't specifically talked about kind of how -- what our forecast is for each year. But I'd say, overall, we've kind of grown at a consistent rate across the year.

Unidentified Participant

In terms of timing of design that you sort of wins that inflection.

©2023 Refinitiv. All rights reserved. Republication or redistribution of Refinitiv content, including by framing or similar means, is prohibited without the prior written consent of Refinitiv. 'Refinitiv' and the Refinitiv logo are registered trademarks of Refinitiv and its affiliated companies.

REFINITIV

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

Yes. So if you break our design wins into 3 buckets. First is connectivity where we already have a lot of the design wins, and it's more about more cars getting connected. It's not a design win cycle for us. On digital cockpit, a lot of the launches happened in '23. And so that's where the revenue ramp is happening right now. ADAS, we see kind of the big step-up happening in '24, '25 time frame, and that really kind of informs the forecast for '26 and beyond.

So that's how the overlay of the 3 happen. And it's just a function of when we got the design wins and when the cars are launching. And so even kind of when we have variances across quarters, it's more about the specific design that we had won, when the OEM finished the software work on it. And if they were able to launch on time or they got pushed out by a quarter for that reason or for supply reasons for other reasons. It's really about launching of those designs rather than some change in either design win pipeline or our pricing or something like that.

Unidentified Participant

And you mentioned ADAS is the largest portion of (inaudible).

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

Yes. So for the $30 billion that we had shown, if you just eyeball the pie chart we showed, that's what I can tell you.

Unidentified Participant

Is your autos business overall, I guess, breaking even or profitable today, the way things stand. I mean I think you've said in the past by '26, I believe it will be of margin accretive to QCT, but where do we stand today in (inaudible)

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

So we don't break down -- I'll tell you here's the challenge, right? The technology in some ways for the auto business is free. -- because it's taking all the technology from mobile. And so any P&L we show has to come with a bunch of qualifications, are we just looking at incremental -- are we doing an allocation and things like that. So we've kind of stayed away from talking about it as individual P&L because that's not how we run the business. We run the business as create core technology and then apply it to different markets. And so the go-to-market teams rather than full P&Ls and the core technology is being created once across all these markets.

Samik Chatterjee - *JPMorgan Chase & Co, Research Division - Analyst*

Okay. I want to get your thoughts on a couple of items before we wrap up. So after the quarter, given some of the challenges that you had and the Huawei headwind that you outlined, we're having conversations with [long-winded] investors. And -- 2 topics came up in terms of what the company should be looking at, the first one being M&A and investors understand sort of the challenges in getting some of the deals approved, but where do you stand in relation to thinking about M&A, large versus sort of maybe doing something that's more arrival like and sort of more focused on diversifying the business beyond smartphone.

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

Yes. I mean you know our strategy historically that we've followed is how do we accelerate the organic plan. And so we did Atheros and CSR at one point. We did RF front-end at one point, Arriver. And each one of those, we were able to accelerate the direction we were going in pretty significantly. Those are the kind of acquisitions that we're going to continue to do, as we've said in the past. That's something that fits very well with us. We've obviously looked at a lot of large acquisitions as well from time to time. So far for various strategic reasons, approval reasons for various reasons,

©2023 Refinitiv. All rights reserved. Republication or redistribution of Refinitiv content, including by framing or similar means, is prohibited without the prior written consent of Refinitiv. 'Refinitiv' and the Refinitiv logo are registered trademarks of Refinitiv and its affiliated companies.

REFINITIV

we've chose not to pursue it. And that framework hasn't changed either. So our M&A strategy is the same. The real question is what can we get done in this environment. More importantly, what fits into the strategy that I just outlined.

Samik Chatterjee - *JPMorgan Chase & Co, Research Division - Analyst*

Okay. And the second aspect of that, which is more organic is, is there a structural change in the nature of your contracts with your OEMs that can sort of make this a lot more predictable business relative to the volatility that you see in customers looking to in-source or other drivers like -- what -- how do you think about the -- I mean, you're obviously looking for like bidding for cost sockets in these phones every one, every 2 years? Like how do you see longer-term changing that to make it a lot more predictable for investors.

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

Yes. So the industry has a structure and the process, and we are part of that process. Of course, we would love to have a longer-term relationship with the OEMs, and there are examples where we've created that. But I don't know that the fundamental industry structure is immediately going to change. But wherever we have the opportunity, I think we've gone and done that.

Samik Chatterjee - *JPMorgan Chase & Co, Research Division - Analyst*

Any final questions from the audience? Okay. We'll wrap it up there, Akash. Thank you.

Akash Palkhiwala - *QUALCOMM Incorporated - Chief Financial Officer*

Thank you very much.

Samik Chatterjee - *JPMorgan Chase & Co, Research Division - Analyst*

Thank you.

DISCLAIMER

Refinitiv reserves the right to make changes to documents, content, or other information on this web site without obligation to notify any person of such changes.

In the conference calls upon which Event Transcripts are based, companies may make projections or other forward-looking statements regarding a variety of items. Such forward-looking statements are based upon current expectations and involve risks and uncertainties. Actual results may differ materially from those stated in any forward-looking statement based on a number of important factors and risks, which are more specifically identified in the companies' most recent SEC filings. Although the companies may indicate and believe that the assumptions underlying the forward-looking statements are reasonable, any of the assumptions could prove inaccurate or incorrect and, therefore, there can be no assurance that the results contemplated in the forward-looking statements will be realized.

THE INFORMATION CONTAINED IN EVENT TRANSCRIPTS IS A TEXTUAL REPRESENTATION OF THE APPLICABLE COMPANY'S CONFERENCE CALL AND WHILE EFFORTS ARE MADE TO PROVIDE AN ACCURATE TRANSCRIPTION, THERE MAY BE MATERIAL ERRORS, OMISSIONS, OR INACCURACIES IN THE REPORTING OF THE SUBSTANCE OF THE CONFERENCE CALLS. IN NO WAY DOES REFINITIV OR THE APPLICABLE COMPANY ASSUME ANY RESPONSIBILITY FOR ANY INVESTMENT OR OTHER DECISIONS MADE BASED UPON THE INFORMATION PROVIDED ON THIS WEB SITE OR IN ANY EVENT TRANSCRIPT. USERS ARE ADVISED TO REVIEW THE APPLICABLE COMPANY'S CONFERENCE CALL ITSELF AND THE APPLICABLE COMPANY'S SEC FILINGS BEFORE MAKING ANY INVESTMENT OR OTHER DECISIONS.

©2023, Refinitiv. All Rights Reserved.

©2023 Refinitiv. All rights reserved. Republication or redistribution of Refinitiv content, including by framing or similar means, is prohibited without the prior written consent of Refinitiv. 'Refinitiv' and the Refinitiv logo are registered trademarks of Refinitiv and its affiliated companies.

REFINITIV