

**Qualcomm**  
**Analyst Day**  
**November 19, 2019**

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**Presenters**

**Mauricio Lopez-Hodoyan, Vice President of Investor Relations**

**Steve Mollenkopf, Chief Executive Officer**

**James Thompson, Executive Vice President of Engineering, and Chief Technology Officer**

**Alex Rogers, Executive Vice President and President, Qualcomm Technology Licensing**

**Cristiano Amon, President**

**Akash Palkhiwala, Executive Vice President and Chief Financial Officer**

**Moderator**

Ladies and gentlemen, please welcome vice president, investor relations, Mauricio Lopez-Hodoyan.

**Mauricio Lopez-Hodoyan**

Good morning. Welcome to Qualcomm's 2019 analyst day. Thank you for joining us today. And before I get started, I'd like to thank all the Qualcomm team and executives that help put this event together. And with that, let's turn to our Safe Harbor statement.

We will make forward-looking statements in today's program, including statements regarding our expectations, projections, and other potential future events. Actual results may differ materially from these forward-looking statements. Please share our most recent form 10-K filed with the SEC for a description of risks and other factors which could cause actual results to differ materially from these forward-looking statements.

Also, we will use non-GAAP financial measures in today's program and you will find reconciliations to the most directly comparable GAAP financial measures in today's presentation on the investor relations page at [qualcomm.com](http://qualcomm.com). And with that, please join me in welcoming Qualcomm's chief executive officer, Steve Mollenkopf.

**Moderator**

Ladies and gentlemen, please welcome chief executive officer, Steve Mollenkopf.

**Steve Mollenkopf**

Well, good morning, everyone. Thank you for coming. I think this will be a good day today. So, we're going to go through--you'll hear from a lot of speakers and look forward to telling the story. So, it's been a while since we've talked to all of you. And so, we're going to spend a lot of time talking about 5G and the things that you would expect and look forward to it.

So, if we look at Qualcomm, who is Qualcomm? We're really the world's leading wireless innovator. We work on technology. We've led for 30 years. We've led every generation of cellular. And our innovations are actually core to the dramatic transformation that really started with the smart phone and will end in, I think, any industry that wants to have connected things.

Where are we? If you look at where we are as a company, we've been through a lot over the last five years. And the reason that we were so interested in making sure that we had the ability to participate in the upside of 5G is what you'll hear today, really. And where are we? Where do we sit today?

Number one, we have the best products and the best technology roadmap that I think we've ever had in the company history. We--there was a lot of opportunity to be distracted. We really weren't distracted. We were very focused on producing that. You'll hear from that--you'll hear about that today. Our IP strength is unmatched and our financial strength, really based on betting on ourselves, is also, I think, a shareholder asset that we're quite proud of. And probably most importantly, we enter into the 5G era, which is a multi-decade era, with these assets intact. So, it's a real, I think, story of opportunity for the company right now.

Now, why are we so excited about 5G? It's because 5G is a big deal and not just a big deal in cellular; it's a big deal in every industry that you deal with. So, with 5G, it's really the technology that not only disrupts the cell phone industry, but it disrupts every industry that's next to it. It's the first time, really, that cellular has had this big influence not only in its home market, but also in new markets that are around it. And there are large markets. So, how big?

We commissioned a study to talk about the economic impact of 5G to goods and services in 2035 and the number is actually \$13.2 trillion of goods and services will be enabled by 5G. That was, I think, a \$12.3 billion number only a couple of years ago. So, it's very significant. So, a proxy for the value that is created by the technology is really that \$13.2 trillion number.

As I said, it's not just another handset upgrade cycle. There's a lot of great things that happen on the handset. You get improvements in capacity, improvements in latency, improvements in data speed, improvement in the ability to deliver unlimited data speeds or data plans. But, probably most importantly, you now have the opportunity to improve the connection density and the reliability of those connections. So, now, wireless connectivity is really the fundamental technology that ties a lot of other industries. So, it's a huge upgrade cycle, larger than any upgrade cycle we've seen in the company's history.

And it's happening. A lot of discussions about the 4G and 5G rates. The reality is 5G is coming along exactly as we thought it would do. In fact, it's happening faster than we saw in 4G. If you look today, there are 40 operators that have already launched 5G networks. In the first year of 4G, there was only four. So, it's a significant thing. And it's going to continue.

You'll see--we'll spend a lot of time talking about the migration of the 5G networks, how it happens worldwide and what you'll see, particularly with mmWave. And it's happening quite quickly because people see the underlying strength of the technology and the ability for economic impact and they want to participate in it.

So, what does Qualcomm do? So, at a very high level, what do we do? If you look back at the history of the company. What we do is we invest and invent the fundamental technologies that make cellular happen and then we scale that worldwide. We scale it through the standards bodies. We scale it through aligning the ecosystem of cellular, and we scale it through our product business. And today, that sets up not only the opportunity in cellular, but the opportunity in all these other industries, the industries that enable that \$13.2 trillion.

So, how do we profit? We profit really in three fundamental ways. Pretty easy, actually, if you think about it. Number one, we make more revenue per device. Either in the cost of selling the baseband device, the licensing revenue that we get, or from increased content in that same device. Our frontend fingerprint, great examples of additional components that we sell at a systems level into the device.

Second is we have a growing opportunity to leverage that same technology roadmap that we produce in the smart phone space into new industries while they're being disrupted by this change that we're enabling through the invention. And then, third and finally, out in time, our belief is that the future of the cloud and AI intersects with 5G. And, of course, we're going to be waiting there to make sure that it's an opportunity for our shareholders.

Let me give an example. So, I talked about industries being disrupted by cellular. Really, if you look, 2G, 3G, and 4G was really a story about the cellular industry, with the exception of one industry, which was automotive. Big established industry, established players, established supply chains, and very, very attractive semi-conductor opportunity for a lot of companies. But, what happened was, with 4G, they started to--you started to see that supply chain and the technology systems of the car changing. First, with telematics. So, you connected the car to the internet, it changed who could play in the car. Great entry point for Qualcomm. Became a very good business for us.

Second, the user experience, the way in which you drive the car, the way in which you service the car, the way in which the consumer interacts with the car is now really being driven by the experience that you've seen in the smart phone space. As a result, it's created an opportunity for us to not only sell modems into the cars, but now we can sell computing elements into the cars. Well, and we have a significant infotainment business, which we'll talk a little about today in terms of numbers.

Now, why did that happen? Why was that an entry point for Qualcomm? It's because the computing that you're forced to do, the power consumption, the graphics rates, the real computing IP that's required in order to enable that user experience which comes from the

smart phone space, the traditional players really weren't prepared to deal with. And they--if you go at that industry without having the ability to spread R&D across a larger computing space and to do it focused on low power, you weren't going to be successful.

And so, for us, what we saw was that we were able to go into that business and displace a lot of traditional players because we came at it really from the benefit of having the smart phone space.

We see the same thing happening in ADAS. So, in ADAS, you've probably seen reports of us having self driving cars around San Diego. That's because we can take that same system expertise that we use in the smart phone, couple it with the IP roadmap and, in particular, the low power computing roadmap that we have, and offer that to customers. And so, that's a budding business for us and we're excited that--be able to extend that.

So, auto, big industry, disrupted by cellular. The traditional players are at a disadvantage because they don't have the IP roadmap or the breadth of technology to compete, and it opens up an opportunity for Qualcomm. First of the--the first industry to really have that happen--it happened, actually, in 3G and 4G, but will accelerate in 5G, and it's a good example. You're going to see the same thing happen in many other big established industries. I'll point out two, manufacturing and gaming.

So, manufacturing, the way in which you automate a factory and the benefit of connecting that wirelessly, big, big area of focus, enabled 100 percent by 5G. Can't be serviced by Wi-Fi. Really, there's a lot of features that are added into 5G to allow the reliability and the--really, the latency required to make it happen. And it's a big opportunity for Qualcomm.

Similarly, gaming. The gaming industry will change from essentially a device that you're used to seeing on the console and it'll be much more streamed. You see that in China today and not--it's not an accident that we are very closely enabling them to do that through really their streaming gaming service. You see some of the 10 cent things that we have announced. It is a perfect example of the combination of 5G and the roadmap--the low power roadmap that we have that creates an opportunity for us to really leverage that existing IP.

And finally, if you look down the road, what are you going to see in terms of the intersection between the cloud, 5G, and AI? And our belief is that what you will see is really a second generation of AI and the cloud as the industry deals with the fact that there's so much data being created in people's business lives and their personal lives and the goal is how do I make decisions--smart decisions about what data needs to go back to the cloud and which data needs to be addressed or make decisions locally. And, of course, for us, that basically means the cloud, 5G, and AI will live together at the edge of the internet. Big opportunity for Qualcomm. We think we're differentiated in terms of the way in which we go after it. And I think it's a big opportunity down the road for us to really benefit from that transition.

So, you put it all together, what do you see? You see, I think, a big expansion of our SAM in a way that we can address it without having to do anything that, I think, you're unfamiliar with us doing. Meaning, our roadmap, our core competency, the technology roadmap that we have from our cellular business enables us to go after some adjacent opportunities that really grow our business. So, if you look, we think we have about a \$65 billion SAM today. In three years, that'll be \$100 billion SAM. So, a lot of opportunity for us. A lot of excitement around the opportunity for us to be able to go after the--what 5G enables.

Summing (sp) all up. I think what you have to take away is we're very confident in our future. We think we have a great opportunity. As we've talked about, 5G is going to be a big thing for us. And we have a technology roadmap that allows us to grow in adjacent businesses. So, you're going to hear about that today. And let me give you a quick roadmap of what you're going to see.

So, Jim Thompson's going to come up. He's our CTO. He's going to talk a lot--about a lot of things. He'll spend an opportunity really making sure you understand the technology roadmap that we have and not only products, but IP. And it's our ability to leverage that IP into new opportunities that I think you're going to enjoy. He'll also talk a little bit about the technology on RF front-end. Obviously, an area of interest.

Alex will talk about the licensing business. The way we think about the licensing business is that it is--a lot of the hard work is behind us there. We think that's going to be a good solid earner for us for a long time and look forward to Alex having an opportunity to talk. Cristiano will talk about the products, as you would expect, and the rollout of 5G. There'll be a couple of new things in there, which will be interesting. And then, finally, we'll end with Akash. He'll put it all together, try to wrap up the financials.

But, all in all, should be a good story. We're excited to tell it. And thanks for joining us today.