

THE ECONOMIC CLUB

O F W A S H I N G T O N, D. C.

Qualcomm CEO Steve Mollenkopf discusses Qualcomm's success in connecting the world and its involvement in developing 5G technology.

**Steve Mollenkopf,
Chief Executive Officer
Qualcomm Incorporated
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MR. RUBENSTEIN: Our special guest is the CEO of Qualcomm, Steve Mollenkopf. Let me give him an introduction, if I could.

Steve is from the best city in the United States, Baltimore. [Laughter, applause.] Graduate of Overlea High School. He then got a Bachelor's of engineering degree at Virginia Tech in 1991, and in 1994 got a Master's in electrical engineering at the University of Michigan, and then joined Qualcomm in 1994; 2008, he was promoted to be the executive vice president of their chipset business; 2011, he became the president and chief operating officer; and 2014, he became the CEO.

He is, among other things, involved in a lot of outside activities. He's a member of the GE board, he's been the head of – the chairman of the Global Semiconductor Alliance, and involved in a lot of philanthropic activities. And now lives in the San Diego area.

So, thank you very much for coming. I talked to you earlier, and I told you I didn't think you would actually show up because, although you had committed to doing this, given all the things going on in your company, I just figured your lawyers would not let you show up. [Laughter.]

STEVE MOLLENKOPF: Yeah.

MR. RUBENSTEIN: So I want to thank you for overruling your lawyers, who is – I guess your general counsel is here, and I guess he wasn't a big fan of doing this, but. [Laughter.]

So, let me explain why I didn't think you would show up – not that you're not a terrific person or man of your word, but you're in the middle of a lot of different controversies or business disagreements. Let's go through them.

Right now – [Laughter.] – Broadcom is trying to buy you, made an offer to buy your company, and your board has rejected it so far, and we'll go through that.

You have – you're trying yourself to buy NXP, and NXP, you haven't gotten the regulatory approvals for that, and somebody who is a shareholder of NXP wants you to pay a higher price than you propose to pay.

Apple and you are in a dispute. Apple is not paying you money that you think you're owed, and you're in patent-infringement lawsuits there.

And you just finished paying nearly a billion dollars to the Chinese for some disputes over royalty payments.

So, you've been – I mean, when you took this job, did you really know – [Laughter.] – that it was going to be like this?

MR. MOLLENKOPF: Yeah, well, I would say you missed two. There was – there's also Korea. [Laughter.]

MR. RUBENSTEIN: OK. OK.

MR. MOLLENKOPF: There's what we've got in Taiwan.

MR. RUBENSTEIN: Korea. What were the other ones?

MR. MOLLENKOPF: Korea and Taiwan. Similar issue, but –

MR. RUBENSTEIN: All right. OK.

MR. MOLLENKOPF: I bring that up – by the way, it's – this is one of the rare cases where I'm being interviewed by another person from Baltimore, so it's comfortable – or it was comfortable. [Laughter.]

MR. RUBENSTEIN: That's why you agreed to do this. That's why you agreed to do it, I assume. [Laughter.]

MR. MOLLENKOPF: Yeah, exactly.

Look, I think a couple things. One is, while you're here, we're continuing to run the business. And this industry is – you know, this is a – this is a dynamic industry. You don't go into this industry, you don't sustain yourself in this industry, unless you can deal with big disputes like – this is the – this is the premier league, I guess, in terms of what you're – what we're doing.

But in terms of regrets, no regrets at all. You know, the unique thing about Qualcomm – and hopefully we'll have an opportunity to expand on this – is that we're at the center of most industries. We're relevant in a lot of different industries. So, I feel like the majority of what the company is working on are things that every company wants to deal with, and so it's an exciting place to work.

MR. RUBENSTEIN: All right. Well, let's go through each of those issues in a moment. Let's explain to people what Qualcomm really is, because it's not a name that rolls off the tip of everybody's tongue, because you don't sell directly to the public. So, what does the name Qualcomm mean? And when did the company start?

MR. MOLLENKOPF: Well, the company started in 1985. It was started by about seven founders who were really trying to work on how do I drive or how do they drive what at the time was a new technology, which was digital communications. It was at the time something that was just used for military applications, but it had a lot of opportunity to really revolutionize, I guess, the consumer – the way consumers and people communicate. And we spent about 30 years

trying to figure out how do we connect people – how do we connect people. And the company, so, what they – what they were founded on was really how do we drive quality communications, so Qualcomm.

And started out being – doing a lot of work on truck tracking and things that connected cars. Then it – then they had the great idea let’s try to figure out how to revolutionize cellular communications, which they did this thing called CDMA¹. And then that drove into the capability to have a connected computer in your pocket, which is where we sit today. And then the next wave, the next 30 years of Qualcomm will really be about how do we connect everything in the world so that everything is into each other.

MR. RUBENSTEIN: So, today, your company is a company that has roughly 22,000 – 24,000 employees? How many employees do you *[have]*?

MR. MOLLENKOPF: A little bit – a little – closer to 30,000, yeah.

MR. RUBENSTEIN: I’m sorry, 30,000 employees and revenue of about \$22, \$23 billion?

MR. MOLLENKOPF: Mid-\$20s billion, yeah.

MR. RUBENSTEIN: OK. And a market capitalization of about \$99 billion or something like that.

MR. MOLLENKOPF: That’s right.

MR. RUBENSTEIN: Irwin Jacobs was often known as the founder. You said there were originally seven, but he was the most visible, and I guess he was the CEO and chairman. He had been an MIT professor; went to the University of California, I guess, San Diego; and then, ultimately, he started this company. Today, you might explain to people, 20 years ago or so there was a fight between various technologies as to which technology would dominate cellular telephones. One was called GSM² and one was called CDMA, and the patents on CDMA were largely developed by Qualcomm. Is that right?

MR. MOLLENKOPF: Correct.

MR. RUBENSTEIN: So, as cellular telephone technology took off, and more and more people wanted smartphones, they had to use CDMA technology. Why is it that, after all these years, nobody came along with something better than CDMA?

¹ CDMA (Code-Division Multiple Access) is a channel access method used by wireless communication technologies. CDMA is an example of multiple access, which allows numerous signals to occupy a single communication channel.

² GSM (Global System for Mobile Communications, originally Groupe Spécial Mobile) is a standard developed by the European Telecommunications Standards Institute (ETSI) to describe the protocols for second-generation digital cellular networks used by mobile devices.

MR. MOLLENKOPF: Well, I would say there are additional things. CDMA is fantastic. It's the basis of a lot of cellular communications. But Qualcomm – that was really the first wave of Qualcomm. And there was – you're correct, there was an actual – a battle between CDMA and GSM, and actually other varieties of digital communications, and it ended up that CDMA was and continues to be a very, very efficient way to deliver communications.

Then what happened was we had the idea that, in addition to communicating with voice, could we connect and put data in your pocket? And at the time, although it's considered to be very normal today, people argued, why would you want to have a data connection? Why would you want to have an internet connection on a device that you carry around with you? And, of course, Qualcomm always said that's going to revolutionize a lot of industries, and so we worked on really the fundamental technology that enables that to occur.

So, what happens, if you think about these big moves in the cellular industry, there had to be some company that came before and figured out what are the base technologies that are required so that other business models 10 years, sometimes 15 years in the future can exist. And that's what Qualcomm worked on. First range was CDMA. Second variety was LTE³; we're now working on 5G⁴.

But then, as you work through that, you essentially have to say, well, what other technologies are required? Well, we need to figure out ways that you can get a computer so that it's power-efficient and in your pocket. So, we did a lot of work on I would say the fundamental computing elements that are tailored for mobile that we put in the smartphone. That's where the smartphone came about.

MR. RUBENSTEIN: Now, the smartphone, some people say Steve Jobs⁵ invented it. But who really invented it?

MR. MOLLENKOPF: Well, you know, the smartphone is sort of like pasta. The number of people that say that they invented it are pretty large. [Laughter.] But –

MR. RUBENSTEIN: I thought it was Marco Polo. [Laughter.]

MR. MOLLENKOPF: By the way, we have – (laughs) – we have our own – we have our own claim on it. In fact, you can go to the Smithsonian and see that device, which is a late-'90s device.

³ LTE (Long-Term Evolution) is a standard for high-speed wireless communication for mobile devices and data terminals, based on the GSM/EDGE and UMTS/HSPA technologies.

⁴ 5G (5th generation) mobile networks or 5th generation wireless systems are the proposed next telecommunications standards beyond the current 4G/IMT-Advanced standards. 5G planning aims at higher capacity than current 4G, allowing a higher density of mobile broadband users, and supporting device-to-device, more reliable, and massive machine communications.

⁵ Steve Jobs was an American entrepreneur, business magnate, inventor, and industrial designer. He was the chairman, chief executive officer (CEO), and co-founder of Apple Inc.

But independent of who actually invented it – and of course, we have our own claim on that – it really comes down to what were the key technologies, the seminal technologies that allowed that technology to exist. And we clearly have a claim on that.

MR. RUBENSTEIN: OK. So, what is 1G? We're now going to talk about 4 and 5G. What's 1G?

MR. MOLLENKOPF: 1G is really about – 1G and 2G, if I could, are really about how do you get voice communication in an efficient way to people. At first it was analog. Then it became digital cellular.

MR. RUBENSTEIN: All right. What is 3G?

MR. MOLLENKOPF: 3G was how do I figure out how to get a little bit of data in a device. And if you remember, in the 3G timeframe, people didn't understand why should – why would I even want to have data in a device. That was the argument that people had. Of course, Qualcomm worked very hard on that.

MR. RUBENSTEIN: All right, 4G.

MR. MOLLENKOPF: 4G was how do I get the same IP connection that exists on my laptop, but I want to get it in a smart, connected computer in my pocket. It ended up that all of those technologies sort of came together at the 4G time, and then we've had tremendous growth in industries as a result.

MR. RUBENSTEIN: Right. And 5G?

MR. MOLLENKOPF: 5G is, of course, there is the – there's more G, of course. [Laughter.]

MR. RUBENSTEIN: All right.

MR. MOLLENKOPF: So you have more technology in the cellular world. But 5G is, I think, the first time that industries that are not traditionally cellular will be disrupted in a large way by cellular technologies.

And so, what do I – what do I mean by that? You should think of it as, today, what is – what is disrupting business worldwide? It's how do I deal with the big data that comes from either my consumer base, my infrastructure base, or just being – having all of my things in my business connected to the internet. Well, it ends up that we're working on all of the technologies that enables that to occur.

So, a great example. If you look at 5G – and we think the economic impact of 5G will be equivalent to the GDP⁶ – or the world GDP impact of a country the size of India today. Twenty percent of that impact – so the big impact – will actually accrue to the automobile industry,

⁶ GDP (gross domestic product) is a monetary measure of the market value of all final goods and services produced in a period (quarterly or yearly) of time.

which is counterintuitive. But it just shows how much connectivity and mobile computing will influence industries that are different than cellular.

MR. RUBENSTEIN: So, now, you carry a smartphone, I assume.

MR. MOLLENKOPF: I do.

MR. RUBENSTEIN: And what kind do you have?

MR. MOLLENKOPF: I carry an iPhone with me.

MR. RUBENSTEIN: But you don't – but you make chips for the iPhone people, but also for the Android people. So why don't you carry both?

MR. MOLLENKOPF: I do. And depending on which meeting I'm in, I'll have – [Laughter.] – I'll have one or the other. [Applause.] But the –

MR. RUBENSTEIN: Well, just tell me secretly, privately – nobody'll know – what's the best one? [Laughter.] What iPhone or what smartphone should I buy?

MR. MOLLENKOPF: They're all very good. I would say lately I feel like the Google Pixel is very good. And I have – you're not – you don't get in this industry unless you're really into gadgets, and I would say I have hundreds of phones at home that are a cause of some angst in the family as to – as to where they're all stored, but I can tell you they're – the amount of innovation that's going into the phone today in areas like the – like the camera or in AI⁷ or in just personalization, it's incredible.

MR. RUBENSTEIN: And brain cancer, you don't have to worry about that, right?

MR. MOLLENKOPF: No, absolutely not. Absolutely not.

MR. RUBENSTEIN: No brain cancer, OK.

And let me ask you how you got into this business. You graduated with a Master's degree at the University of Michigan. Were you a – you know, a chip designer? Or how did you get this expertise to actually get to be at Qualcomm?

MR. MOLLENKOPF: Well, I was originally studying electromagnetics at Michigan, and so that was – electromagnetics is really the study of how waves propagate and antennas and things. And the reason that no one really knows what that is is because it's very difficult to get paid in a job for electromagnetics. And so – and so, at the time, newly married, I decided to go work for a company called Qualcomm. And, quite frankly, just very lucky. I was – my brother, older brother, very smart guy, sent me a piece of paper and said, hey, there's this company called Qualcomm that wants engineers that are like you; why don't you go apply there?

⁷ AI (artificial intelligence) is intelligence displayed by machines, in contrast with the natural intelligence displayed by humans and other animals.

And so, I ended up getting a job. I started there at the bottom level of an engineer. And the reason I went there was I thought everyone there was smarter than me, and I said that's a good – that's a good environment to go into. And it continues to be true, by the way, here.
[Laughter.]

MR. RUBENSTEIN: But, I mean, you seem – usually people in these chip companies, they're Asian-American, they're Indian-American, they're Jewish. I mean, you're not any of those.
[Laughter.] So how did you rise up in –

MR. MOLLENKOPF: Well, I was very lucky. I can – I can tell you, the company – the company is very aggressive from a technology point of view. We always want to go – “aggressive” is probably the wrong term. Ambitious. So, we want to go into new areas as technology's changing.

Now, we happen to always be at the nexus of a lot of innovation and a lot of societal impact. And so, for me, that provided a lot of opportunity to go into things. But, like anyone else in business, I was lucky to be in the right place at the right time with the right company culture that allowed that to turn out to be a good result.

MR. RUBENSTEIN: Well, speaking of that, as I mentioned, in 2011 you were made the chief operating – president and chief operating officer, and the CEO was the son of the founder. Paul Jacobs was the CEO. Irwin Jacobs had then become the chairman. And then there was a need for a new CEO at Microsoft, and some people say that you were maybe going to get that job, and all of a sudden you became the CEO of Qualcomm. So, were you actually offered the Microsoft job? And any regrets about not taking it?

MR. MOLLENKOPF: I'll tell you, I have – I won't comment directly on your question, other than to say I have tremendous – no regrets in being part of Qualcomm. When I – or continuing at Qualcomm. When I took the job as the CEO of Qualcomm – and it happened very quickly –

MR. RUBENSTEIN: Were you surprised that they kind of pushed the founder's son upstairs a little bit and made you the CEO?

MR. MOLLENKOPF: Well, look, we had – we'd always had a succession plan. Paul had been the CEO for a long time, continues to be an executive chairman. We continue to have a very strong relationship, talk all the time, as you would expect for people that have known each other for a long time.

I think – but with respect to regrets, none. We knew at the time, and I knew at the time of becoming CEO, that we would have to make some big changes to the company to deal with the change of – look, the first 28 years of the company's history – we're 32 years old – we had almost unlimited market growth at our back. So, we had everything from the smartphone wave in front of us, digital communication in front of us, the end market growing at 20, 30 percent a year. But we knew that at some point that was going to slow down. By the way, when I say

slow down, our end markets still grow, you know, in the high single digits, which is at least double GDP.

But we knew that a number of different industries were going to then be disrupted by cellular. So how do we position the company so that we continue to be profitable in the slower-growing but still growing cellular business, but how do we go into these new opportunities that are expanding? That was really what the – what the challenge was of my CEO tenure.

MR. RUBENSTEIN: Now, Paul Jacobs is the executive chair. Is that a good job, being executive chair? I'm trying to find out myself if it's going to be a good thing. [Laughter.]

MR. MOLLENKOPF: Yeah. I think he would tell you it's a pretty good job.

MR. RUBENSTEIN: OK. Now, the biggest chip manufacturer in the world, is that Intel?

MR. MOLLENKOPF: Yeah.

MR. RUBENSTEIN: And they have a strategy, and I guess they still have it, called Intel Inside, so they kind of promote their brand. Why do you not do something like that so people know Qualcomm better than they do?

MR. MOLLENKOPF: Well, I mean, one of the reasons why we don't do it is the – is the structure of the cellular phone industry. And essentially, what it is is the brand of the OEM⁸, the handset manufacturer, really is the leading element, whereas in the PC space the industry is organized probably less – with less-strong PC brands. There are still very strong PC brands, but from a branding perspective the OEM is probably not as strong. And so, essentially, we sit behind them.

But we also deal with everyone in the industry, and our view is be a strong technology provider behind the scenes to everyone. And sometimes, if you were to promote your brand too much, I think you can come in conflict with that.

Now, in China we have a very strong brand, that if you go on the internet and buy a phone there's a strong affinity for our products. It's actually called the Snapdragon product, and you'll see that has a very strong brand. It's just because it's very valuable there. It probably isn't as valuable here.

MR. RUBENSTEIN: So let's talk about China for a moment. You recently paid the Chinese government or somebody in China \$985 million. Was that a pleasant thing to do? And what was the reason for that? [Laughter.]

MR. MOLLENKOPF: Well, what happened was we did, actually, resolve a dispute on how we charge for our technology. And ultimately, it was something that we thought as a company, and I think the Chinese government thought, was a win-win situation that allowed us to essentially

⁸ Original equipment manufacturer

continue our business model and adjust our business model so that we can really help drive the growth of LTE in China.

So, if you look at China, huge, huge cellular industry in China. A couple stats. One, China Mobile, which is the largest carrier in the world, has over 900 million subscribers, just tremendous size in terms of its capacity. The number of base stations in the city of Shenzhen, which 20 years ago was a very small fishing village next to Hong Kong you couldn't get to – and that's probably an overestimate, but it was definitely a less-big, you know –

MR. RUBENSTEIN: City.

MR. MOLLENKOPF: – metropolis than it is today – there are more base stations in Shenzhen than there are in the – in the entire country of France. And, you know, that – participating in that growth and participating in that business and the growth of the cellular industry in China we thought was an important thing to be a part of.

MR. RUBENSTEIN: So, OK. So, you did that. Recently, when President Trump went to China, you accompanied him.

MR. MOLLENKOPF: Yes.

MR. RUBENSTEIN: Did you get any business out of that?

MR. MOLLENKOPF: We did. We signed three big deals with handset OEMs that are less-known in the United States, but they're number three, four, and five, I think, in the world.

MR. RUBENSTEIN: So when you go on one of those presidential trips, do you actually go on Air Force One, or you go on some other plane?

MR. MOLLENKOPF: We came on a different plane later.

MR. RUBENSTEIN: Different plane?

MR. MOLLENKOPF: Yeah, yeah.

MR. RUBENSTEIN: OK. And when you do those trips, do you know in advance you're going to get these agreements? They're kind of worked out in advance. You don't get there and all of a sudden, they give you an agreement, right?

MR. MOLLENKOPF: I think they're pretty well-scripted, actually, those things.

MR. RUBENSTEIN: All right. OK, all right.

MR. MOLLENKOPF: Yeah.

MR. RUBENSTEIN: So let's go through the major disputes you have now, or challenges. So right now, Broadcom – it's another semiconductor company – they have made an offer to buy you for \$70 a share, and your board has said not interested at that price, maybe not any price. And they have now announced that they're going to do a proxy fight, and they're going to get all of your directors replaced with their directors. Is that very friendly? Is that something – [Laughter.] – did you sit down with them and tell them that's not a good thing to do, or? And what do you think is going to happen? And when will this be resolved?

MR. MOLLENKOPF: Well, you know, obviously, the shareholder meeting is in March, so there's an endpoint on that for sure. And I think, you know, in that case there's not much more I can say than what was in the press release, which essentially is we didn't think that the offer was in the ballpark of value, and there's a lot of uncertainty or at least unknown timing related to regulatory. And, you know, if you look at our board, just speaking as one person, you know, it's a pretty strong board. Actually, it's a world-class board that has a strong – a strong resume not only outside of Qualcomm, but directly as to what they've done in Qualcomm.

So, this is – you know, in our view, it's probably the wrong next step. It's kind of an unusual case. But, you know, we're pretty comfortable with where we're going to take the company, and we'll let the shareholders decide.

MR. RUBENSTEIN: But this is America, and everybody has a price, right, in our country. So, like, what price would be in the ballpark? [Laughter.]

MR. MOLLENKOPF: Well, we're nowhere near it, I can tell you that much.

MR. RUBENSTEIN: OK. All right, OK. [Laughter.]

MR. MOLLENKOPF: But the – at least that's my view. The board, of course, has to decide, but –

MR. RUBENSTEIN: OK. All right, so you're in the middle of another acquisition. You're trying to buy a Dutch-based semiconductor company called NXP. You have offered a certain price for that, and you're awaiting regulatory approvals. You haven't received them all yet, is that right?

MR. MOLLENKOPF: Correct.

MR. RUBENSTEIN: But when you receive them, you then have to get 80 percent of the shareholders to agree. Is that right?

MR. MOLLENKOPF: That's correct.

MR. RUBENSTEIN: And Elliot Management is one of the shareholders that says you need to pay more. So, are you going to pay any more to get this approval?

MR. MOLLENKOPF: Well, not surprisingly, I probably won't answer that one – that one either.

MR. RUBENSTEIN: OK. All right.

MR. MOLLENKOPF: But the – but here's where that acquisition is. So, it's, I think, a well-positioned company as part of Qualcomm. It really helps us get into some of these areas that I was talking about in 5G. We're focused on getting through regulatory approval. And it's a very complementary merger. And, by the way, even being complementary, it takes about 14 months to get – to get through. We're kind of in the – I would say the late innings of that. We think it'll close here either this calendar year or early next year. And then there will be, you know, some discussion about how to get closed. We think the price is a full price, but I'm sure there will be lots of discussion about that.

MR. RUBENSTEIN: But you're getting pulled because Elliott is saying pay a higher price, but I think Broadcom is saying pay a lower price because they don't want you to pay too much to make it too expensive for them to buy you.

MR. MOLLENKOPF: Yeah.

MR. RUBENSTEIN: So –

MR. MOLLENKOPF: And I think there are a number of other shareholders in the company who want us to do the right thing long term, and we're listening very closely to them as well.

MR. RUBENSTEIN: OK. All right, let's go to the next issue, then, Apple. Apple has been somebody that you've been selling chips to and I guess licensing chips.

MR. MOLLENKOPF: Yeah.

MR. RUBENSTEIN: Now they are not paying you for money that they, I guess, maybe owe you, in your view. Isn't that hurting your bottom line? And how are you going to resolve that?

MR. MOLLENKOPF: Well, you know, we do – if you look at our two big businesses, we have a licensing business and we have a chip business. The chip business, I would say, is firing on all cylinders. The licensing business also is firing on all cylinders, with one exception, which is that we have a dispute with – actually, we have two disputes, but we have a dispute with Apple over the licensing fee. And that's not unusual. If you look at the history of that business, it tends to have somewhat lumpy revenue from time to time as a result of these disputes.

But if you look, it's really a contract dispute. We have a valid contract with – actually not directly with Apple, but with their contract manufacturers. We're in the process of enforcing that contract. It's in – it's in the legal process. We're very confident that we have the stronger hand, and it'll play forward.

MR. RUBENSTEIN: So, like, for something like that, Tim Cook⁹, does he call you up one day and say I'm not going to be paying you a couple billion dollars I might owe you? Or does he just send you a letter?

MR. MOLLENKOPF: Well, we actually – we were actually sued on the – on the contract, but that's not unusual. If you – the numbers that are involved, the companies that are involved probably look, you know, notable as a result, but we have disputes all the time. Many of them are resolved without anyone even knowing about it, and this one will get resolved too.

MR. RUBENSTEIN: But, for example, you're still doing business with Apple on other things.

MR. MOLLENKOPF: Yes.

MR. RUBENSTEIN: So isn't that awkward, you're doing business with them while they're suing you for some money?

MR. MOLLENKOPF: Well, that's – big technology companies always have a complicated relationship. If you look, it's not uncommon for Qualcomm to have a dispute with an OEM, maybe use them as a supplier. They might be a customer of ours two different ways. And I think that's really the challenge of being a CEO in a big technology company, is you have to try to figure out how to resolve all of those things.

MR. RUBENSTEIN: OK. So, explain to people – for people what – how big a chip is in a phone. In a cellphone, how big is the chip? If you were to open the phone, would you find the chip? And how big is it?

MR. MOLLENKOPF: You would find it. It'll be rectangular. It's about the size of a dime. And in our case, you might see several Qualcomm chips. You know, if you look at our latest chip, it probably has 5 billion transistors. If you were to compare that kind of on the scale of human achievement, it's probably some of the most complicated things, if not the most complicated single structure that we've created.

MR. RUBENSTEIN: So who designs these? Is this what your engineers do, you design the chips? And then where do you manufacture them?

MR. MOLLENKOPF: We do the designs. The manufacturing tends to be done by specialty companies that we actually don't own. So, we outsource the design of the – excuse me, of the manufacture of the chip, but we do the design.

So, if you look at the makeup of our company, it's essentially design engineers. We have some attorneys. Some people think we have a lot of attorneys and no engineers, but – [Laughter.] – but in reality, we have a lot of engineers. But we don't have manufacturing facilities, by and large. We do have some. But the majority of our – of our products are manufactured by other companies.

⁹ Tim Cook is an American business executive, industrial engineer, and developer. Cook is the Chief Executive Officer of Apple Inc., previously serving as the company's Chief Operating Officer, under its founder Steve Jobs.

And there's a very efficient way that the – that the semiconductor industry is organized called the fabless model¹⁰, where all of the fabs are essentially – tend to be in these large companies, and they spread the financial CAPEX¹¹. So, all of the financial risk is spread across the entire industry instead of in one company. And that's been a tremendous force of innovation. It's been one of the reasons why Qualcomm's been able to spend so much time on the innovation portion, the design portion, versus all of the manufacturing pieces.

MR. RUBENSTEIN: So Broadcom – when Broadcom wanted to buy you, did they sit down with you and tell you they wanted to buy you, or did they just send a letter?

MR. MOLLENKOPF: We read about it through the leak, like everyone else.

MR. RUBENSTEIN: Oh, really?

MR. MOLLENKOPF: Now, we had had some discussions earlier – about a year earlier, but since those broke off we heard about it the same way. But this – you know, I think that's not unusual in a – in a hostile.

MR. RUBENSTEIN: OK. And did you not at one point think of buying them?

MR. MOLLENKOPF: We had – like everyone in the industry, we always have discussions: Could we find shareholder value in some form of combination? We had had discussions in the past.

But I would just caution everyone to understand the industry that we're in. The semiconductor industry is going through a period of consolidation, and so everyone talks to everyone else all the time. So, it's a very – you know, everyone knows everyone.

MR. RUBENSTEIN: So, if I were a shareholder of Qualcomm, which I'm not, and I wanted to get advice about what I should do and what's best for the company, what would be the best argument for your staying independent and not being bought by Broadcom or somebody else?

MR. MOLLENKOPF: Well, I think for us the argument is – probably the best is, one, there's no real path to value that we see, at least in terms of offers now, in terms of an alternative. And if you look, we're probably the best-positioned company for 5G and the connected world. We are sitting in a momentary spot where our revenue is a little bit difficult to model because of these licensing disputes. But those will get resolved, and what you'll see is a company that really is providing the fundamental technology – probably one of the only companies in the world that can provide technology at scale into the connected world when the connected world is disrupting almost every industry, and a track record of being able to do it.

¹⁰ The fabless model is an attractive and popular option for many semiconductor companies. By adopting a fabless business strategy, a company can focus time and resources on the design of innovative integrated circuits, while avoiding the high cost of building, operating, and upgrading a manufacturing facility.

¹¹ CAPEX (capital expenditure) are funds used by a company to acquire, upgrade, and maintain physical assets such as property, industrial buildings, or equipment.

MR. RUBENSTEIN: So, when you went to China with President Trump, does he actually meet with the CEOs that go over there, or you don't get to see him that much?

MR. MOLLENKOPF: We got a – we had a good chance to interact with the administration. It was – it was a good opportunity, I think.

MR. RUBENSTEIN: And the tax bill that's going through Congress now, is that going to be advantageous to you?

MR. MOLLENKOPF: It will be. We are one of the companies that has a lot of offshore revenue, and in many respects that capital was stranded and not able for us to invest back in the business. And so, you know, we think it's moving in the right direction.

Like everyone else, there's always elements of it that we would like to have changed. That's probably the difficult part of this problem. In fact, we were going into – was it – the Rayburn Building yesterday, and you can tell there's a tax bill in the mix because it's very difficult to get through security. It's a long line. But we were there, of course.

MR. RUBENSTEIN: OK. And today – so you would support the tax bill, more or less, as you think it's going to go through.

MR. MOLLENKOPF: Yeah.

MR. RUBENSTEIN: And do you spend a lot of time in Washington lobbying regulators on other things, or seeing members of Congress on other things?

MR. MOLLENKOPF: We do, and I would say less on the lobbying piece, although we have a lot of important components. Our issues tend to be related to patent law and tend to be related to spectrum policy. Both of them, we think, are necessary kind of fundamental conditions for innovation to appear. But for us, a lot of what we do, because our business model is so related to, let's say, foreign governments and having the right playing field worldwide, we spend a lot of time trying to get the help of the U.S. government to really help us propagate our business model worldwide.

MR. RUBENSTEIN: Does the U.S. government do that?

MR. MOLLENKOPF: They do, actually. If you – if you look, we've had some success. Some of the reasons that we've been able to resolve our issues, let's say, in China was we had good partnership with the U.S. government.

MR. RUBENSTEIN: So what do you do when you're not designing chips? Are you – you were a high school basketball player and so forth, but you didn't play in the college or the NBA, right? You weren't good enough for that.

MR. MOLLENKOPF: That's correct. [Laughter.]

MR. RUBENSTEIN: So did you ever think about the NBA? Not really.

MR. MOLLENKOPF: I think about it, but I don't think I had a lot of options there, let's say.

MR. RUBENSTEIN: So what do you do on the outside? Do you just think about chips or read about chip books? Or what – [Laughter.] – there must be something that you do that's not related to chips. [Laughter.]

MR. MOLLENKOPF: Yeah. Well, I – my wife would tell me that I have a lot of hobbies that I talk about that I don't do. And I do a lot of email, which is really what I do most of the time.

But, you know, I like to swim. I would like to spend more – I'd like to fish more. I talk about fishing a lot, but I do it not as much as I'd like to, or as much as I'm able to. But like anybody in this industry, you pretty much work all the time. I mean, it's a – it's a worldwide industry. There's, you know – and, you know, we're very thankful to be in a position that people want to hear from us. And so, it's – that's really what fills the time.

MR. RUBENSTEIN: And do you consider yourself a bit of a spokesman for the semiconductor industry? And are you involved in industry-wide issues as well?

MR. MOLLENKOPF: We are. I would tell you the ethos of the company, it's probably less of a semiconductor company. We view ourselves as an innovation company that uses semiconductors and software to distribute that innovation worldwide. We have probably – we have – as a semiconductor company, we probably have more systems engineers and software engineers. That's the majority of the people. And that's just as a result of that fabless model that we talked about.

Now, we also, however, think that that is the right place to drive the best value. And that's where the real value is, at the design area, at the system design area.

Now, we also then lobby for semiconductor issues. And we think it's very important – actually, think very important for the U.S. to maintain its lead in this area because it's so important to the fundamental technologies that, you know, will drive economic growth in the future.

MR. RUBENSTEIN: So, if there were no silicon, would there be any semiconductors? I mean, do you –

MR. MOLLENKOPF: Not really. It's pretty well – it's a – that is the – that's the element that drives it.

MR. RUBENSTEIN: And how long does it take to design a new chip, typically, if you're going to – let's say for a new 5G kind of apparatus?

MR. MOLLENKOPF: It actually takes about three-plus months to get a chip out. And they – and it can take longer. So, you essentially have to commit to the chip, you know, a quarter ahead or more – in some cases a quarter-and-a-half ahead – to get production. So, it makes it pretty exciting.

MR. RUBENSTEIN: Now, you mentioned driverless cars or cars. Are driverless cars going to happen anytime soon? Are they safe?

MR. MOLLENKOPF: They're already happening. I would say –

MR. RUBENSTEIN: Would you – would you go in one of them, or?

MR. MOLLENKOPF: I have been in them. They work well. Just like in a plane, I like to have the person in charge, but that may be more of a statement of my own personality versus anything else. But the – driverless cars, I think, will be a reality. I think it's a 30-year journey. There are a lot of – there's a lot of work to be done, the least of which is we need to get every car connected to every car and get it connected to the internet. And I think we'll have a lot more safety as a result.

We're working on that through cellular. We've been working with kind of cellular vehicle-to-X, essentially, as a technology that we're here in Washington talking about. But I think the trend of having a connected car with a lot of computing power is going to be a safer – and also, if you think about society and you're going to have big cities, 30 million people in a city, how do you move logistics? How do you move people, how do you move goods through a city? And there's a lot of technology to be used in there that's just over and above – the efficiency by which you can do logistics actually will be a big benefit. And having more computing power and having cars work in a kind of coordinated fashion, there will be big benefits there as well.

MR. RUBENSTEIN: So, on the cellphones, what is the greatest new innovation that you can tell me I'm going to be getting in a year or so in a new smartphone?

MR. MOLLENKOPF: You know, you're going to – you're going to – it's not just one. You're going to have a continual amount of, I would say, smarts in the cellphone.

So, you talk about AI. People talk about, you know, artificial intelligence. And a lot of when they think about it, they think about something that happens in a data center, something in a Microsoft data center or Facebook or at Amazon, what have you. But what's happening is we're putting all of that technology in the device that's in your pocket, and it's essentially going to make decisions based on what it sees in its local environment – what you allow it to see, of course. And it's going to adapt itself to what your needs are going to be. It's going to anticipate what you need. And that is a – we're just beginning that phase, and that will have a tremendous improvement in sort of how this device helps you run your life.

MR. RUBENSTEIN: So today, if I wanted to look at buying a good technology company stock, would I be buying your stock? And do you think your stock's undervalued? And by how much, would you say? [Laughter.]

MR. MOLLENKOPF: Well, I would say I haven't met a CEO that doesn't think their company is undervalued, and I'm probably in that same fraternity of folks.

But the – you know, we're pretty excited about the future. We think the opportunity to connect everything in the world, and at the time when that's the fundamental driver of value we're in a unique position to do that.

MR. RUBENSTEIN: So, if you could communicate a message to the CEO of Broadcom, what would your message be? [Laughter.]

MR. MOLLENKOPF: Oh.

MR. RUBENSTEIN: Leave us alone? Or just we'll see you in the proxy fight wars, or?

MR. MOLLENKOPF: Well, I'll probably not answer that question, the first one. [Laughter.]

MR. RUBENSTEIN: OK. So today you would say that overall Qualcomm you think is in very good shape and poised for growth in the future, and you're pretty happy with where your company is today?

MR. MOLLENKOPF: I think we're exceedingly well-positioned. I think our products are the best they've been in the history that I can remember. We're more relevant in more industries than ever before. And I would say we're probably the best in the industry in resolving the type of problems that we have.

MR. RUBENSTEIN: And do you think the United States will continue to be the leader in semiconductor design and innovation, or not sure about that?

MR. MOLLENKOPF: I think in the near term yes. In the long term it's really, I would say, a sourcing problem, in the sense that you need to have people interested in going into those industries and you need to have capital flowing into those industries. If you look today, if you wanted to start up a semiconductor company, very tough to do. It'll be tough to raise money. It'll be tough to really get the time it takes to move forward because all the money is going into other areas. But I think there's just tremendous opportunity to drive – you know, the amount of innovation space that's left, you know, unsecured, or, you know, no one's claimed it, is pretty high right now.

MR. RUBENSTEIN: Right. So, when you have a – like, if I – you know, I have an iPhone. You have an iPhone as well. If you can't get it to work the way you want, do you go, like, to the Genius Bar at the Apple Store and they explain things to you? Or you don't – you have people that can help you without going there?

MR. MOLLENKOPF: Yeah. I would say I am – I’m a pretty good IT guy. I am –

MR. RUBENSTEIN: Well, I have – well, I’d like you to explain some – [Laughter.] – some things I got to work here.

MR. MOLLENKOPF: Yeah, yeah.

MR. RUBENSTEIN: OK. So, all right, so you can fix these things yourself?

MR. MOLLENKOPF: I can, yeah. In fact, that’s probably my main benefit to the – or that’s my main value proposition to the family, is that I can do their IT for them. I can take out the garbage and I can do the IT. [Laughter.]

MR. RUBENSTEIN: Well, I want to thank you for a conversation. Obviously, as I said at the beginning, I thought it was courageous for you to come because I realize everybody who’s your PR person and lawyer would tell you not to come because you could make a mistake, which you didn’t do as far as I could see. But I’m sure you’ll be criticized for something or another. [Laughter.] So, I wish you all the best in whatever happens for Qualcomm, and thank you very much for coming.

MR. MOLLENKOPF: David, thank you. [Applause.]



Steve Mollenkopf
CEO, Qualcomm Incorporated

Steve Mollenkopf is chief executive officer of Qualcomm Incorporated. Mollenkopf began his Qualcomm career as an engineer and, for more than 20 years, has helped define and implement Qualcomm’s strategy and technologies. He also serves on the company’s board of directors.

Mollenkopf oversaw Qualcomm's investment in technologies that propelled smartphones into the mainstream. During his tenure as president and chief operating officer, Qualcomm became a leader in mobile technology, including computing, graphics and multimedia. The company also extended its 3G and 4G modem leadership position.

Prior to his role as president and COO, Mollenkopf led the company's chipset business, overseeing the launch of 4G technology. He helped make Qualcomm the world's largest mobile chipset supplier and a global leader in LTE technology. He guided QCT through the worldwide expansion of Code Division Multiple Access (CDMA) technology; the introduction of Wideband Code Division Multiple Access (W-CDMA) technology; the launch of 4G/LTE systems; and drove Qualcomm's technology leadership position in smartphones.

He also spearheaded the company's largest acquisition, the \$3.1 billion purchase of chipmaker Atheros. The deal helped expand Qualcomm's business far beyond smartphones, and accelerated the adoption of Qualcomm's technologies and platforms in new segments.

Mollenkopf is a published IEEE author and holds seven patents in areas such as power estimation and measurement, multi-standard transmitters, and wireless communication transceiver technology. Mollenkopf is chairman of the Technology CEO Council, a board member for the Semiconductor Industry Association, and a past chairman of the Global Semiconductor Alliance.

He holds a Bachelor of Science degree in electrical engineering from Virginia Tech and a Master of Science degree in electrical engineering from the University of Michigan.