



## AVGO Earnings Call – FY2024 Q1

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### Operator

Hello, and welcome to Broadcom's Inc. First Quarter Fiscal Year 2024 Financial Results Conference Call. At this time, for opening remarks and introductions, I will turn the call over to Ji Yoo, Head of Investor Relations of Broadcom Inc. You may begin.

### Ji Yoo

Thank you, operator, and good afternoon, everyone. Joining me on today's call are Hock Tan, President and CEO; Kirsten Spears, Chief Financial Officer; and Charlie Kawwas, President, Semiconductor Solutions Group. Broadcom distributed a press release and financial tables after the market closed, describing our financial performance for the first quarter of fiscal year 2024. If you did not receive a copy, you may obtain the information from the Investors section of Broadcom's website at [broadcom.com](https://broadcom.com). This conference call is being webcast live and an audio replay of the call can be accessed for one year through the Investors section of Broadcom's website. During the prepared comments, Hock and Kirsten will be providing details of our first quarter fiscal year 2024 results, guidance for our fiscal year 2024 as well as commentary regarding the business environment. We'll take questions after the end of our prepared comments. Please refer to our press release today and our recent filings with the SEC for information on the specific risk factors that could cause our actual results to differ materially from the forward-looking statements made on this call. In addition to U.S. GAAP reporting, Broadcom reports certain financial measures on a non-GAAP basis. A reconciliation between GAAP and non-GAAP measures is included in the tables attached to today's press release. Comments made during today's call will primarily refer to our non-GAAP financial results. I'll now turn the call over to Hock.

### Hock Tan

Thank you, Ji, and thank you, everyone, for joining us today. In our fiscal Q1 2024, consolidated net revenue was \$12 billion, up 34% year-on-year as revenue included 10.5 weeks of contribution from VMware. Excluding VMware, consolidated revenue was up 11% year-on-year. Semiconductor solutions revenue increased 4% year-on-year to \$7.4 billion, and infrastructure software revenue grew 153% year-on-year to \$4.6 billion. With respect to infrastructure software, revenue contribution from consolidating VMware drove a sequential jump in revenue by 132%. We expect continued strong bookings at VMware will accelerate revenue growth through the rest of fiscal 2024. In semiconductors, AI revenue quadrupled year-on-year to \$2.3 billion during the quarter, more than offsetting the current cyclical slowdown in enterprise and telcos. Now let me give you more color on our two reporting segments. Starting with software. Q1, software segment revenue of \$4.6 billion was up 156% year-on-year and included \$2.1 billion in revenue contribution from VMware. Consolidated bookings in software grew sequentially from less than \$600 million to \$1.8 billion in Q1 and is expected to grow to over \$3 billion in Q2. Revenue from VMware will grow double-digit percentage sequentially, quarter-over-quarter, through the rest of the fiscal year. This is simply a result of our strategy with VMware. We are focused on upselling customers, particularly those who are already running their compute workloads with vSphere virtualization tools to upgrade to VMware Cloud Foundation, otherwise branded as VCF. VCF is the complete software stack, integrating compute, storage and networking that virtualizes and modernizes our customers' data centers. This on-prem self-service cloud platform provides our customers a complement and an alternative to public cloud. And in fact, on a VM Explore last August, VMware and NVIDIA entered into a partnership called VMware Private AI Foundation, which enables VCF to run GPUs. This allows customers to deploy their AI models on-prem. And wherever they do business without having to compromise on privacy and data -- in control of their data. And we are seeing this capability drive strong demand for VCF, from enterprises seeking to run their growing AI workloads on-prem. And reflecting all these factors for the full year, we reiterate our fiscal 2024 guidance for software revenue of \$20 billion. Turning to semiconductors. Before I give you an overall assessment of this segment, let me provide more color by end markets. Q1 networking revenue of \$3.3 billion grew 46% year-on-year, representing 45% of our semiconductor revenue. This was largely driven by strong demand for our custom AI accelerators at our 2 hyperscale customers. This strength extends beyond AI accelerators. Our latest generation Tomahawk 5 800G switches saw through Ethernet mix refinements, DSPs and optical components are experiencing strong demand at hyperscale customers as well as large-scale enterprises deploying AI data centers. For fiscal 2024, given continued strength of AI NAND working demand, we now expect networking revenue to grow over 35% year-on-year compared to our prior guidance for 30% annual growth. Moving on to wireless. Q1 wireless revenue of \$2 billion decreased 1% sequentially and declined 4% year-on-year representing 27% of semiconductor revenue. As you all may know, the engagement with a North American customer continues to be very deep strategic and, of course, multiyear. And in fiscal 2024, helped by content increases, we reiterate our previous guidance for wireless revenue to be flat year-on-year. Next, our Q1 server storage connectivity revenue was \$887 million or 12% of semiconductor revenue, down 29% year-on-year. We are seeing weaker demand in the first half, but expect recovery in the second half. Accordingly, we are revising our outlook for fiscal '24 server storage revenue to decline in the mid-20 percentage range year-on-year compared to prior guidance for high teens percent decline year-on-year. On broadband, Q1 revenue declined 23% year-on-year to \$940 million and represented 13% of semiconductor revenue. We are seeing a cyclical trough this year for broadband as telco spending continues to weaken and do not expect improvement until late in the year. And accordingly, we are revising our outlook for fiscal '24 broadband revenue to be down 30% year-on-year from our prior guidance of down mid-teens year-on-year. And finally, Q1 industrial resales of \$215 million declined 6% year-on-year. In fiscal '24, we continue to expand industrial resales to be down high single digits' year upon year. And in summary, with stronger-than-expected growth from AI more than offsetting the cyclical weakness in broadband and server storage, Q1 semiconductor revenue grew 4% year-over-year to \$7.4 billion. Turning to fiscal '24. We reiterate our guidance for Semiconductor Solutions revenue to be up mid- to high single-digit percentage year-on-year. I know we told you in December, our revenue from AI would be 25% of our full year semiconductor revenue. We now expect revenue from AI to be much stronger, representing some 35% of semiconductor revenue at over \$10 billion. And this more than offset weaker-than-expected demand in broadband and service storage. So for fiscal 2024 in summary, we reiterate our guidance for consolidated revenue to be \$50 billion, which represents 40% year-on-year growth. And we reiterate our full year adjusted EBITDA guidance of 60%. Before I turn this call over to Kirsten, who will provide more details of our financial performance this quarter, let me just highlight that Broadcom recently published its fourth annual ESG report available on a corporate citizenship side, which discusses the company's sustainability initiatives. As a global technology leader, we recognize Broadcom's responsibility to connect our customers, employees and communities. Through our product and technology innovation and operational excellence, we remain committed to this mission. Kirsten?

### Kirsten Spears

Thank you, Hock. Let me now provide additional detail on our Q1 financial performance, which was a 14-week quarter and included 10.5 weeks of contribution from VMware. Consolidated revenue was \$12 billion for the quarter, up 34% from a year ago. Excluding the contribution from VMware, Q1 revenue increased 11% year-on-year. Gross margins were 75.4% of revenue in the quarter. Operating expenses were \$2.2 billion and R&D was \$1.4 billion, both up year-on-year.

primarily due to the contribution from VMware. Q1 operating income, including VMware, was \$6.8 billion and was up 26% from a year ago, with operating margin at 57% of revenue. Excluding transition costs of \$226 million in Q1, operating profit of \$7.1 billion was up 30% from a year ago, with operating margin of 59% of revenue. Adjusted EBITDA was \$7.2 billion or 60% of revenue. This figure excludes \$139 million of depreciation. Now a review of the P&L for our two segments, starting with Semiconductor. Revenue for our Semiconductor Solutions segment was \$7.4 billion and represented 62% of total revenue in the quarter. This was up 4% year-on-year. Gross margins for our semiconductor solutions segment were approximately 67%, down 190 basis points year-on-year driven primarily by product mix within our semiconductor end markets. Operating expenses increased 8% year-on-year to \$865 million, reflecting a 14-week quarter resulting in semiconductor operating margins of 56%. Now moving on to our infrastructure software segment. Revenue for infrastructure software was \$4.6 billion, up 153% year-on-year, primarily due to the contribution of VMware and represented 38% of revenue. Gross margins for infrastructure software were 88% in the quarter, and operating expenses were \$1.3 billion in the quarter, resulting in infrastructure software operating margin of 59%. Excluding transition costs, operating margin was 64%. Moving on to cash flow. Free cash flow in the quarter was \$4.7 billion and represented 39% of revenues off a higher revenue base. Excluding restructuring and integration spend of \$658 million free cash flows were 45% of revenue. We spent \$122 million on capital expenditures. Days sales outstanding were 41 days in the first quarter compared to 31 days in the fourth quarter on higher accounts receivable due to the VMware acquisition. The accounts receivable we brought on from VMware has payment terms of 60 days unlike Broadcom standard 30 days. We ended the first quarter with inventory of \$1.9 billion, up 1% sequentially. We continue to remain disciplined on how we manage inventory across the ecosystem. We ended the first quarter with \$11.9 billion of cash and \$75.9 billion of gross debt. The weighted average coupon rate and years to maturity of our \$48 billion in fixed rate debt is 3.5% and 8.4 years, respectively. The weighted average coupon rate and used to maturity of our \$30 billion in floating rate debt is 6.6% and three years, respectively. During the quarter, we repaid \$934 million of fixed rate debt that came due. This week, we repaid \$2 billion of our floating rate debt, and we intend to maintain this quarterly repayment of debt throughout fiscal 2024. Turning to capital allocation. In the quarter, we paid stockholders \$2.4 billion of cash dividends based on a quarterly common stock cash dividend of \$5.25 per share. We executed on our plan to complete our remaining share buyback authorization. We repurchased \$7.2 billion of our common stock and eliminated \$1.1 billion of common stock for taxes due on vesting of employee equity, resulting in the repurchase and elimination of approximately 7.7 million AVGO shares. To help you with modeling share count, the weighted effect of the 54 million shares issued for the VMware acquisition resulted in a sequential increase in Q1 to \$478 million. With the Q2 non-GAAP diluted share count expected to increase to approximately \$492 million as the shares issued are fully weighted in the second quarter. Now on to guidance. Regardless of the updated dynamics of our semiconductor and software segments as Hock discussed, we choose to reiterate our guidance for fiscal year 2024 consolidated revenue of \$50 billion and adjusted EBITDA of 60%. With regard to VMware, in February, we signed a definitive agreement to divest the end-user computing division with the transaction expected to close in 2024, subject to customary closing conditions, including regulatory approvals. The EUC division has been classified as discontinued operations in our Q1 financials. We have decided to retain the Carbon Black business and merge Carbon Black with Symantec to form the enterprise security group. The impact on revenue and profitability is not significant. That concludes my prepared remarks. Operator, please open up the call for questions.

#### **Operator**

[Operator Instructions] Our first question comes from the line of Harsh Kumar with Piper Sandler.

#### **Harsh Kumar**

Yes, thank you, Hock. Once again, tremendous results and tremendous activity that you guys are benefiting from in AI. But my question was on software. I think if I heard you correctly, Hock, you mentioned that your software bookings will rise quite dramatically to \$3 billion in 2Q. I was hoping that you could explain to us why it would rise almost 100% up, if my math is correct, in 2Q over 1Q. Is it something simple? Or is it something that you guys are doing from a strategy angle that's making this happen?

#### **Hock Tan**

As I indicated, with the acquisition of VMware we're very focused on selling, upselling and helping customers, not just buy but deploy this private cloud what we call virtual private cloud solution or platform on their on-prem data centers. It has been very successful so far. And I agree it's early innings still at this point. We just have closed on the deal -- well, we closed on the deal late November, and we are now March, early March. So we had the benefit of at least three months, but we have been very prepared to launch and focus on this push initiative on private cloud, VCF. And the results has been very much what we expect it to be, which is very, very successful.

#### **Harsh Kumar**

Thank you, Hock.

#### **Operator**

Our next question comes from the line of Harlan Sur with JPMorgan. Your line is open.

#### **Harlan Sur**

Good afternoon. Thanks for taking my question. Hock, on the AI outlook being revised from greater than \$7.5 billion, I think, last quarter to \$10 billion plus this quarter. As you mentioned, AI compute pulls your ASICs, but it also pulls your networking, optical, PCIe, connectivity solutions as well. So can you just help us understand like of that \$2.5 billion increase in outlook? Is it stronger AI ASIC demand, stronger networking, stronger optical, et cetera. But more importantly, are you also seeing a similar acceleration in your forward ASIC design win pipeline as well?

#### **Hock Tan**

There's a lot of questions, a lot of information you want me to disgorge. Let's take them one at a time, shall we. Yes, the increase, as we have said before as we shown before, it's roughly two-thirds, one-third or 70-30, which is AI celebrators which are custom ASIC AI accelerators this. We've a couple of hyperscalers compared to the other components, which are collectively considered as networking components. And it's about 70%, 30% mix. And that increase of almost \$3 billion that you mentioned, it's a similar combination.

#### **Harlan Sur**

And then are you seeing a similar acceleration on the forward design win pipeline and customer engagements?

**Hock Tan**

I have indicated that I only have to really only have to say, I don't count anybody. I do not go into production as a rail customer at this point.

**Harlan Sur**

Okay. Thanks, Hock.

**Operator**

Our next question comes from the line of Vivek Arya with Bank of America Securities. Your line is open.

**Vivek Arya**

Thank you for taking my question. Hock, on, again, on the over \$10 billion for AI, is this still a supply constrained number? Or do you think that this is kind of a very project-driven number, so it's not really supply that gets it. So if you were to get, let's say, increase supply, could there be upside? And then kind of part B of that is, on the switching side, have you already started to see benefits from the 51 terabit per second switches? Is that something that comes along later? Like what is the contribution of 51T to the switching upside that you mentioned for this year?

**Hock Tan**

Yes. No, our Tomahawk 5 is going great guns. Now it's not driven unlike in the past, Tomawak 3, Tomawak 4 by traditional scale-out in hyperscalers on their cloud environment. This is all largely coming from a scaling out of AI data centers. The building of larger and larger clusters to enable generative AI computing functionality. And you're going for bigger and bigger pipes. Hence, the Tomahawk 5 51 terabit is a perfect solution, and we're seeing a lot of demand. And in many cases, we are basically, they are surpassing the rate of adoption that we had previously thought. So it is a very good solution in connecting GPUs. And with respect to AI accelerators where I think you are focusing on, is that a constraint on supply chain? We do get enough lead time out of our hyperscale customers that we do not have a supply chain constraint.

**Vivek Arya**

Thank you.

**Operator**

Our next question comes from the line of Stacy Rasgon with Bernstein Research. Your line is open.

**Stacy Rasgon**

Hi, guys. Thanks for taking my question. I had a question on the core software business. So you said VMware for the two months that was in there was \$2.1 billion, which would put the rest of the software, CA Symantec and Brocade at like 2.5 almost could be up like 25% sequentially and almost 40% year-over-year. I guess do I have my math right? And if so, like how can that be? What's going on in the core business? And how should we be thinking about the growth of the core business in VMware as we go through the year? Is the VMware still \$12 billion or just -- how do we think about that?

**Hock Tan**

Yes, don't get too excited over that. I think it's certain products, contracts we obtained and -- but it's very strong contract renewals in the older -- from old Broadcom contracts, especially in mainframes were very strong, as was some of our other distributor software platform. So that has also accelerated, but that's not the star of this show, Stacy. Star this show is the accelerating bookings and backlog we are accumulating on VMware.

**Stacy Rasgon**

Okay. So VMware is still running at like an \$11 billion to \$12 billion run rate benefit. So that sounds like that should accelerate. So the overall for VMware should be more than the \$12 billion that you talked about. So the core business, the strength this quarter that was kind of a onetime we could model that kind of like falling off because you've shown at the overall software at 20?

**Hock Tan**

Correct.

**Stacy Rasgon**

Got it. Okay. Thank you.

**Operator**

Our next question comes from the line of Aaron Rakers with Wells Fargo.

**Aaron Rakers**

Yes. Thanks for taking the question. I wanted to ask kind of continuing on the VMware discussion a little bit. Hock, now that you've had the asset for a little while, I'm curious of how you how the go-to-market strategy looks with VMware relative to the prior software acquisitions that you've done. What I'm really getting at is

kind of like how have you kind of thought about the segmentation of the customer base of VMware? Are you -- I know there's been some discussion around your channel engagement, VM legacy VMware channel in the past. So I'm just kind of curious of how you've been managing that go-to-market.

#### **Hock Tan**

I think now we haven't had it for that long, to be honest. It's like three months, about three months. But yes, it's what -- and it seems to be that things to work out, but things seem to be progressing very well as we had hoped it would. Because where we are focusing our go-to-market -- and more than go to market, where we are focusing our resources on don't just go to market but on engineering a very improved VCF stack, which we have and selling it out there and being able to then support it and in the process that help customers deploy and start to really make it stand up in your data centers. All that focus is on the largest, I would say, 2,000 strategic customers. These are guys who want to still have significant distributed data center on-prem. Many of our customers is looking at a hybrid situation, not trying to use the word too loosely. Basically, a lot of these customers had some very legacy but critical mainframe. That's an old platform not growing, except it's still vital. Then what they have in modernizing workloads cut today and in the future, is they really have a choice, which they are taking both angles of running a lot of applications in data centers on-prem distributed data centers on-prem, which can handle these modernized workloads while at the same time to -- because of elastic demand, to be able to also put some of these applications into public cloud. Today's environment, most of these customers do not have an on-prem data center that resembles what's in the cloud, which is very high availability, very low latency, highly resilient, which is one we are offering with VMware Cloud Foundation of VCF. It's exactly replicate what they get in a public cloud. And they love it. Now three months. But we are seeing it in the level of bookings we are generating over the last three months.

#### **Aaron Rakers**

Thank you.

#### **Operator**

Our next question comes from the line of Chris Danely with Citi. Your line is open.

#### **Chris Danely**

Thanks, for letting me ask question. I have just a question on the AI upside in terms of a customer perspective. How much of the upside is coming from new versus existing customers? And then how do you see the customer base going forward? I think it's going to broaden. And we know how you like to price. So if you do get a bunch of new customers for these products, could there be some better pricing and better margins as well? Hopefully, they're not listening to the call.

#### **Hock Tan**

Chris, thanks for this question. Love it. Because perhaps let me try to perhaps give you a sense how we think of the AI market, the new generative AI market, so to speak, using it very loosely and generically as well. It's really -- we see it as two broad segments. One segment is hyperscalers, especially very large hyperscalers with huge, huge consumer subscriber base. You probably can guess who this few people are, very large subscriber base and very -- an almost infinite amount of data. And their model is getting subscribers to keep using this platform they have. And through that, be able to generate a better experience for not only the subscribers, but a better advertising opportunity for their advertising clients. It's a great ROI as we are seeing ROI that comes very quickly. And the investment continues vigorously with those -- with that segment, comprising very few players. But we will choose subscriber base, but with the scale to invest a lot. And here, ASICs custom silicon, custom AI accelerators makes plenty of sense and that's where we focus that attention on. They also buy as a scale out those AI accelerators, through clusters increasing large clusters because of the way the models are running, the foundation models run and large language models need to generate those parameters. They buy a lot of networking together with it. But in comparison, obviously, to the value of AI accelerators we sell. Now the network working side, while growing its small percentage compared to the size, the value of the accelerators. That's one big segment we have. The other segment we have, which is smaller is the enterprise, what I broadly call enterprise segment in AI. Here, you're talking about companies, large not so large, but large who wants to do -- who have AI initiatives going on. All these big news and hype about AI being the savior to productivity and all that gets all these companies on multiple on their own initiatives. And here, short of going to public cloud, they're trying to run it on-prem. If they try to run it on-prem, they take standard silicon for an AI accelerators as much as possible. And here, in terms of the AI accelerator, we don't have a market. That's the merchant silicon market. But in the networking side as they tie it together with their data centers, they do buy all those are -- our networking components beginning with switches, routers even through people like Arista 7800 but switches for sure, and the various other components I mentioned. And that's a different sense market that we have. So it's an interesting mix, and we see both.

#### **Chris Danely**

Thanks a lot, Hock.

#### **Operator**

Our next question comes from the line of Karl Ackerman with BNP Paribas. Your line is open.

#### **Karl Ackerman**

Yes, thank you. Hock, weakness in broadband, server and storage customers is understandable given what your peers have said this earnings season. But perhaps you could speak to the backlog visibility you have with your customers in those markets that would indicate those markets could begin to order again and see sequential growth in the second half through the calendar year? Thank you.

#### **Hock Tan**

You're correct. We are -- as I say, we are almost like near the trough. This year, '24, first half, for sure, will be the trough. Second half 24, don't know yet. But I tell you what, we have 52-week lead time, as you know. We are very disciplined in sticking to it. And based on that, we are seeing bookings lately, significantly up from bookings a year ago.

**Karl Ackerman**

Thank you.

**Operator**

Our next question comes from the line of Christopher Rolland with Susquehanna. Your line is open.

**Christopher Rolland**

Thanks for the question. So Hock, this one is for you on optical. So, our checks suggest that you're vertically integrating there. You're now putting in your own drivers, TIAs, you're starting to get traction in PAM4 DSP. And I think you kind of had an early lead in 100-gig data center lasers as well. And this is -- a lot of this should be on the back of AI networking that appears to be exploding here. So I was wondering if you could help us size the market and then also talk about how fast this is growing for you. I think there may have been some clues in that one-third number the AI you gave us, but perhaps if you can kind of double click or square that for us, it would be great. Thanks.

**Hock Tan**

Okay. Before you get carried away, please, and those in the other categories outside AI accelerators, all those things that PAM-4, DSPs, optical components, retirements. They are small compared to Tomahawk switches and Jericho routers using AI networks. And also being in an environment where, as you all know, traditional enterprise networking is kind of also in a bit of a slowdown now. So always think, it's demand driven very much by AI. And that tends to push us in a line of thinking that could be very biased because what it is showing is that the mix and the content on networking relative to compute, is very skewed very different from -- in an AI data center compared to a traditional CPU-based data center. So I don't want to get you guys all in the wrong way. But you're right, in the AI data center, there's a lot of -- there's quite a bit of content on DSPs, PAM4s, optical components and retirements and PCI Express switches. But they are still not that big in the overall scheme of things compared to what we sell in switches and routers. And compared to AI accelerators, they are even small, I think in that ratio. As I said, AI revenue of \$10 billion plus this year, 70% would be AI accelerators. 30%, everything else. And within that everything else, 30% or so, I would say more than half of that 30%, more like 20% are the switches and routers. And the rest are other various retirement DSP components because we are not -- unlike what you said, we're not vertically integrated in the sense we do not do the entire transceiver the optical transceiver. We don't do that. Those are manufactured typically by OEM contract manufacturers like in online, Eoptolink guys in China. Where those guys are much more competitive, but we provide those key components we talk about. So when you look at it that way, you can understand the kind of the weighting of the various values.

**Christopher Rolland**

Super helpful. Thank you, Hock.

**Operator**

Our next question comes from the line of Toshiya Hari with Goldman Sachs. Your line is open.

**Toshiya Hari**

Hi, thank you for taking the question. Hock, I think we all appreciate the capabilities you have in terms of custom compute. I asked this question last quarter on the group call back. But there is one competitor based in Asia, who continues to be pretty vocal and adamant that one of the future designs at your largest customer, they may have some share and we're picking up conflicting evidence, and we're getting a bunch of investor questions. I was hoping you could address that and your confidence level in sort of maintaining, if not extending your position there? Thank you.

**Hock Tan**

You know, I can't stop somebody from trash talking, okay? It's the best way to describe it. Let the numbers speak for themselves, please, and leave it that way. And I add to it like most things we do in terms of large critical technology products. We tend to always have, as we do here, a very deep strategic and multiyear relationship with our customer.

**Toshiya Hari**

Understood. Thank you.

**Operator**

Our next question comes from the line of Vijay Rakesh with Mizuho. Your line is open.

**Vijay Rakesh**

Yes, hi, Hock. Just on the custom silicon side, obviously, you guys dominate that space. But you mentioned two customers, only two major customers. But just wondering what's really holding back other hyperscalers from ramping up their custom silicon side. And on the flip side, you're hearing some peers talk about custom silicon road maps as well, so if you could hit both? Thanks.

**Hock Tan**

Well, number one, we don't dominate this market. I only have two. I can't be dominating it, too and number one. Number two, the second point is very -- it takes years. It takes a lot of heavy lifting to create that custom silicon because you need to do more than just hardware of silicon to really have a solution for generative AI or even AI in trying to create those AI capabilities in our data centers. It's more than just silicon. You have to invest a lot in creating software models that works on your custom silicon that matches. You've got to match your business model in the first place, which leads to and create foundation models which then needs to work and optimize on the custom silicon you are developing. So it's an iterative process. And it's a constant evolving process even for the same customer we deal

with. I mentioned that in the last call. So it takes years to really understand or to be able to basically reach a point where you can say that, hey, I'm finally delivering production worthy -- and it's not because silicon is bad. It's because it doesn't work well with the foundation models that the customer put in place and a software layer that works with it, the firmware, the software layer that translates into it. All that has to work you are almost like creating an entire ecosystem on -- in a limited basis, which we are recognized very well in x86 CPUs, but in GPUs, those kind of AI accelerators is something still very early stage. So it takes years. And for our two customers, we have engaged for years. With one of them, we have engaged for eight years to get to this point. So it's something you have to be very patient, persevere and hope that everything lines up because ultimate success, if you are just a silicon developer, it's not just dependent on you, but dependent as much even more on your partner or customer doing it. So just got to be patient guys. I got the two only so far.

**Vijay Rakesh**

And on the peers getting into that market?

**Hock Tan**

Who is getting to the market, please repeat?

**Vijay Rakesh**

You talked about some of your peers like I think NVIDIA has been talking about entering the custom silicon market. Just your thoughts around that, yes.

**Hock Tan**

Oh, custom silicon market. I have no comment to be made on it. All I do say is I have no interest in going into a market where -- we have a philosophy in running our business, Broadcom. And maybe other people have a different philosophy. Let me tell you my simple philosophy, which I've articulated over time, every now and then, which is very clear to my management team and to the whole Broadcom. You do what you're good at. And you do -- you keep doubling down on things you know you are better than anybody else. And you just keep doubling down because nobody else will catch up to you if you keep running in of the pack. But do not do something that you think you can do, but somebody else is doing much better job than you are. That's my philosophy.

**Vijay Rakesh**

Thanks, Hock.

**Operator**

Our next question comes from the line of Matt Ramsay with TD Cowen. Your line is open.

**Matt Ramsay**

Thank you very much for squeezing me in guys. Just kind of a 2-part thing on the custom silicon stuff. I guess, Hock, if some of the merchant leaders in AI who are interested in some custom networking stuff from you either in switching routing would you consider it? And the second question is for Kirsten. The business model around custom silicon for most folks is taking our e-payments upfront and sell the end product at a lower gross margin, but a higher operating margin and you guys have wrapped this massive custom business with no real impact to gross margin. So maybe you could just unpack the philosophy and the accounting about the way that you guys approach the custom silicon opportunities just from a margin perspective? Thanks guys.

**Hock Tan**

I'll take that, because you're asking business model, you're not asking really number crunching. So let me try to answer in this way. No, there's no particular reason shot of what constitutes an AI accelerator. An AI accelerator, the way it's configured now, whether it's a merchant or its customer has a -- for AI accelerator to run foundation models very well needs not just a whole bunch of loads of floating point multipliers to do matrix multiplication, matrix analysis on regression. That's the logic part, compute part. It comes -- you have to come with access to a lot of memory, literally almost cash memory tied to it. The chip is not just a simple multiplier. It has -- it comes attached to memory. It's almost a layer 3-dimensional chip, which it is. Memory is not something we -- any of us in AI accelerators are super good at designing or building. So we buy the memory from very specialized high-bandwidth memory, you all know about that, from key memory suppliers. Every one of us does that. So you partly combine the two together, that's what an AI accelerator is. So even if I get very good net corporate silicon gross margin on mine compute, logic chip on multipliers. There's no way I can apply that kind of add-on margin to the high-bandwidth memory, which is a big part of the cost of the total chip. And so naturally, by simple math, it will -- that hold an entire consolidated AI accelerator brings a gross margin below on a traditional silicon product we have out there. No going away from that because you are adding on memory, even though we have to create the excess, the IOs that attach in, we do not and could not justify adding that kind of margin to memory. Nobody could, for us. So it brings a natural lower margin. That's really the simple basis to it. But on the logic part of it, sure, with the kind of content with the kind of IP that we develop cutting edge to make those high-density floating point multipliers [ph] on 800 square millimeters of advanced silicon we can command the margin similar to our corporate gross margin.

**Operator**

Our next question comes from the line of Edward Snyder with Charter Equity Research. Your line is open.

**Edward Snyder**

Thanks a lot. First, a housekeeping one, if I could, Hock. You mentioned the second customer as customer, but you also mentioned that it takes years of work iteratively. I mean you can -- anybody has looked at the TPU history, I guess, understands that. So -- and you've said before that it takes time to ramp it up. But maybe you could give us a little bit of color of phenomenal growth in your custom silicon products. Is much or a material part of that coming from your second customer and taking into account the low revenue number, is the growth rate, generally speaking, fairly comparable? And then I had a question about VMware.

**Hock Tan**

You better go on to VMware customers. And because on the first -- I don't tell about my customer individually, sorry.

**Edward Snyder**

Okay. Okay, never mind. That's a waste of time. So closing VMware held kind of a significant shift in your software strategy from focus on the largest 1,000 or so customers to hundreds of thousands now. Why should we expect once you get through, I don't say, the low-hanging fruit of selling into the, like you mentioned, the first 1,000 customers with the VCF product that your OpEx is a share of sales, firstly, in sales and marketing would start to increase because that's the big leverage Broadcom has had over almost all your acquisitions in software, and that seems to be changing now?

**Hock Tan**

We have a shift here. And it's interesting. You're right, now we've got. We are spending more on go-to-market and support because we have a lot of customers with VMware. They are 300,000, but we stratify. So we have the strategic guys. We sell, upsell VC private cloud very good. But the long tail of what we call smaller commercial customers, we continue to support and sell improved versions of just vSphere compute virtualization to improve productivity on their service. We don't attempt to say, go build up your whole VCM. They don't have the skills, don't have the scale to do it. But only it adds up you're right, costs of my spend, OpEx spend, be it support services, go-to-market will increase. But the difference between that and, say, CA, under acquisition we did is we're growing this business very fast. And you don't have to increase your spend growing this business. So we have operating leverage through revenue growth over the next three years.

**Edward Snyder**

Great. If I could squeeze one more in. You'd mentioned several times actually in the last quarter that there were two divisions you're going to divest including Carbon Black, and that's changed. What has changed? Is the market outlook kind of softened and you just wait and see? Or did you change your strategy and how you're going to integrate? I'm just curious why last quarter, you said you probably get rid of it in months and now you're keeping it.

**Hock Tan**

Well, we find now that we could generate more value to you, the shareholders. I assume you are -- I'm just kidding, but we would generate more value to our shareholders by taking Carbon Black, which is not that big and integrating it, Symantec, that by doing it, we would generate much better value to our shareholders than taking a one-shot divestiture on this asset, not particularly large to begin with.

**Edward Snyder**

Great. Thank you.

**Operator**

Ladies and gentlemen, just in the interest of time, I would now like to turn the call back over to Ji Yoo for closing remarks.

**Ji Yoo**

Thank you, operator. In closing, we would like to highlight our Broadcom enabling AI at an Infrastructure Investor Meeting on Wednesday, March 20, 2024, at 9:00 a.m. Pacific 12:00 p.m. Eastern Time. Charlie Kawwas, President of Broadcom's Semiconductor Solutions Group and several General Managers will present on Broadcom's merchant silicon portfolio. The live webcast and replay of the investor meeting will be available at [investors.broadcom.com](http://investors.broadcom.com). Broadcom currently plans to report its earnings for the second quarter of fiscal '24, after close of market on Wednesday, June 12, 2024. A public webcast that Broadcom's earnings conference call will follow at 2:00 p.m. Pacific Time. That will conclude our earnings call today. Thank you all for joining. Operator, you may end the call.

**Operator**

Thank you. Ladies and gentlemen, this concludes today's conference call. Thank you for your participation. You may now disconnect.