Q2 2023 Earnings Call

Company Participants

- Hock E. Tan, President and Chief Executive Officer
- Ji Yoo, Head of Investor Relations
- Kirsten Spears, Chief Financial Officer and Chief Accounting Officer

Other Participants

- Ambrish Srivastava, Analyst
- Antoine Chkaiban, Analyst
- Edward Snyder, Analyst
- Harlan Sur, Analyst
- Harsh Kumar, Analyst
- Joseph Moore, Analyst
- Karl Ackerman, Analyst
- Kurt Sievers, Analyst
- Ross Seymore, Analyst
- Timothy Arcuri, Analyst
- Toshiya Hari, Goldman Sachs
- Vijay Rakesh, Analyst
- Vivek Arya, Analyst
- William Stein, Analyst

Presentation

Operator

Welcome to Broadcom Inc. Second Quarter Fiscal Year 2023 Financial Results Conference Call.

At this time, for opening remarks and introductions, I would like to turn the call over to Ji Yoo, Head of Investor Relations of Broadcom Inc.

Ji Yoo {BIO 22177393 <GO>}

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 second quarter fiscal year 2023. If you did not receive a copy, you may obtain the information from the Investors section of Broadcom's website at 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 second quarter fiscal year 2023 results, guidance for our third quarter, 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 US 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 E. Tan {BIO 1460567 <GO>}

Thank you, Ji, and thank you, everyone, for joining us today.

So in our fiscal Q2 2023, consolidated net revenue was $8.7 billion up 8% year-on-year. Semiconductor solutions revenue increased 9% year-on-year to $6.8 billion, and infrastructure software grew 3% year-on-year to $1.9 billion as the stable growth in core software more than offset softness in the Brocade business.

Now, as I start this call, I know you all want to hear about how we are benefiting from this strong deployment of generative AI by our customers. Put this in perspective, our revenue today from this opportunity represents about 15% of our semiconductor business. Having said this, it was only 10% in fiscal '22, and we believe it could be over 25% of our semiconductor revenue in fiscal '24. In fact, over the course of fiscal '23, that we are in, we are seeing a trajectory where our quarterly revenue entering the year doubles by the time we exit '23. And in fiscal third quarter '23, we expect that this revenue to exceed $1 billion in the quarter.

But as you well know, we're also a broadly diversified semiconductor and infrastructure software company, and in our fiscal Q2, demand for IT infrastructure was driven by hyperscale while service providers and enterprise continued to hold up. Following the 30% year-on-year increases we have experienced over the past five quarters, overall IT infrastructure demand in Q2 moderated to mid-teens percentage growth year-on-year.

As we have always told you, we continue to ship only to-end user demand. We remain very disciplined on how we manage inventory across our ecosystem. We exited the quarter with less than 86 days on hand, a level of inventory consistent with what we have maintained over the past eight quarters.

Now, let me give you more color on our end markets. Let me begin with wireless. As you saw in our recent 8-K filing, we entered into a multi-year collaboration with our North American wireless OEM on cutting-edge wireless connectivity and 5G components. Our engagement in technology and supply remains deep, strategic and long-term.

Q2 wireless revenue of $1.6 billion represented 23% of semiconductor revenue. Wireless revenue declined seasonally, down 24% quarter-on-quarter and down 9% year-on-year. In Q3, as we just begin the seasonal ramp of next -- of the next-generation phone platform, we expect wireless revenue to be up low-single digit sequentially. We expect however, it will remain around flattish year-on-year.

Moving on to networking. Networking revenue was $2.6 billion, and was up 20% year-on-year, in line with guidance, representing 39% of our semiconductor revenue. There are two growth drivers here. One, continued strength in deployments of our merchant Tomahawk switching for traditional enterprise workloads as well as Jericho routing platforms for telcos, and two, strong growth in AI infrastructure at hyperscalers from compute offload and networking. And speaking of AI networks, Broadcom's next-generation Ethernet switching portfolio consisting of Tomahawk 5, and Jericho 3 AI offers the industry's highest-performance fabric for large-scale AI clusters by optimizing the demanding and costly AI resources. These switches based on an open distributed disaggregated architecture won't support 32,000 GPU clusters running at 800 gigabit per second bandwidth.

Ethernet fabric as we know it, already supports multi-tenancy capability and end-to-end congestion management. This lossless connectivity with high QoS performance has been well-proven over the last 10 years of network deployment in the public cloud and telcos. In other words, the technology is not new, and we are as Broadcom very well-positioned to simply extend our best-in-class networking technology in generative AI infrastructure while supporting standard connectivity which enables vendor interoperability. In Q3, we expect networking revenue to maintain its growth year-on-year of around 20%.

Next, our server storage connectivity revenue was $1.1 billion, or 17% of semiconductor revenue, and up 20% year-on-year. And as we noted last quarter, with the transition to next-generation mega rate [ph] largely completed and enterprise demand moderating, we expect server storage connectivity revenue in Q3 to be up low-single digits year-on-year.

Moving on to broadband, revenue grew 10% year-on-year to $1.2 billion and represented 18% of semiconductor revenue. Growth in broadband was driven by continued deployments by telcos of next-generation 10G-PON and cable operators of DOCSIS 3.1 with high attach rates of Wi-Fi 6 and 6E. And in Q3, we expect our broadband growth to moderate to low single digit percent year-on-year. And finally, Q2 industrial resales of

$260 million increased 2% year-on-year as the softness in China was offset by strength globally in renewable energy and robotics, and in Q3, we forecast industrial resales to be flattish year-on-year on continuing softness in Asia offset by strength in Europe. So summary, Q2 semiconductor solutions revenue was up 9% year-on-year, and in Q3, we expect semiconductor revenue growth of mid-single-digit year-on-year growth.

Turning to software. In Q2, infrastructure software revenue of $1.9 billion grew 3% year-on-year and represented 22% of total revenue. As expected, continued softness in Brocade was offset by the continuing stable growth in core software.

Relating to core software, consolidated renewal rates averaged 114% over expiring contracts, and in our strategic accounts, we averaged 120%. Within -- with the strategic accounts, annualized bookings of $564 million included $133 million, or 23% of cross-selling of other portfolio products to these same core customers. Over 90% of the renewal value represented recurring subscription and maintenance. And over the last 12 months, consolidated renewal rates averaged 117% over expiring contracts, and among our strategic accounts, we averaged 128%. Because of this, our ARR, the indicator of forward revenue at the end of Q2 was $5.3 billion, up 2% from a year ago. And in Q3, we expect our infrastructure software segment revenue to be up low-single digits percentage year-on-year as the core software growth continues to be offset by weakness in Brocade. On a consolidated basis, we are guiding Q3 revenue of $8.85 billion, up 5% year-on-year.

Before Kirsten tells you more about our financial performance for the quarter, let me provide a brief update on our pending acquisition of VMware. We're making good progress with our various regulatory filings around the world, having received legal merger clearance in Australia, Brazil, Canada, South Africa and Taiwan, and foreign investment control clearance in all necessary jurisdictions.

We still expect the transaction will close in Broadcom's fiscal 2023. The combination of Broadcom and VMware is about enabling enterprises to accelerate innovation and expand choice by addressing their most complex technology challenges in this multi-cloud era. And we are confident that regulators will see this when they conclude their review.

With that, let me turn the call over to Kirsten.

Kirsten Spears {BIO 19712531 <GO>}

Thank you, Hock. Let me now provide additional detail on our financial performance.

Consolidated revenue was $8.7 billion for the quarter, up 8% from a year ago. Gross margins were 75.6% of revenue in the quarter, about 30 basis points higher than we expected on product mix. Operating expenses were $1.2 billion, down 4% year-on-year. R&D of $958 million was also down 4% year-on-year on lower variable spending.

Operating income for the quarter was $5.4 billion and was up 10% from a year ago. Operating margin was 62% of revenue, up approximately 100 basis points year-on-year.

Adjusted EBITDA was $5.7 billion, or 65% of revenue. This figure excludes $129 million of depreciation.

Now, a review of the P&L for our two segments. Revenue for our semiconductor solutions segment was $6.8 billion and represented 78% of total revenue in the quarter. This was up 9% year-on-year. Gross margins for our semiconductor solutions segment were approximately 71%, down approximately 120 basis points year-on-year, driven primarily by product mix within our semiconductor end-markets.

Operating expenses were $833 million in Q2, down 5% year-on-year. R&D was $739 million in the quarter, down 4% year-on-year. Q2 semiconductor operating margins was 59%, so while semiconductor revenue was up 9%, operating profit grew 10% year-on-year.

Moving to the P&L for our infrastructure software segment. Revenue for infrastructure software was $1.9 billion, up 3% year-on-year and represented 22% of revenue. Gross margins for infrastructure software were 92% in the quarter and operating expenses were $361 million in the quarter, down 3% year-over-year. Infrastructure software operating margin was 73% in Q2, and operating profit grew 8% year-on-year.

Moving to cash flow. Free cash flow in the quarter was $4.4 billion and represented 50% of revenues in Q2. We spent $122 million on capital expenditures. Days sales outstanding were 32 days in the second quarter compared to 33 days in the first quarter. We ended the second quarter with inventory of $1.9 billion, down 1% from the end-of-the prior quarter. We ended the second quarter with $11.6 billion of cash and $39.3 billion of gross debt, of which $1.1 billion is short-term. The weighted-average coupon rate and years to maturity of our fixed-rate debt is 3.61% and 9.9 years, respectively.

Turning to capital allocation. In the quarter, we paid stockholders $1.9 billion of cash dividends. Consistent with our commitment to return excess cash to shareholders, we repurchased 2.8 billion of our common stock and eliminated 614 million of common stock for taxes due on the vesting of employee equity resulting in the repurchase and elimination of approximately 5.6 million AVGO shares.

The non-GAAP diluted share count in Q2 was $435 million. As of the end of Q2, $9 billion was remaining under the share repurchase authorization. Excluding the potential impact of any share repurchases, in Q3, we expect the non-GAAP diluted share count to be $438 million.

Based on current business trends and conditions, our guidance for the third quarter of fiscal 2023 is for consolidated revenues of $8.85 billion, and adjusted EBITDA of approximately 65% of projected revenue. In Q3, we expect gross margins to be down approximately 60 basis points sequentially on product mix.

That concludes my prepared remarks. Operator, please open up the call for questions.

Questions And Answers

Operator

Thank you. (Operator Instructions) And today's first question will come from the line of Ross Seymore with Deutsche Bank. Your line is open.

Q - Ross Seymore {BIO 20902787 <GO>}

Thanks for letting me ask a question. Hock, maybe I just start off with the topic that you started AI these days is everywhere. Thanks for the color that you gave in the percentage of sales that it was potentially going to represent into the future. I wanted to just get a little bit more color on two aspects of that. How you've seen the demand evolve during the course of your quarter? Has it accelerated in what areas, et cetera? And then is there any competitive implications for it?

We've heard from some of the compute folks that they want to do more on the networking side and then obviously, you want to do more into the compute side. So I just wondered how the competitive intensity is changing given the AI workload increases these days.

A - Hock E. Tan {BIO 1460567 <GO>}

Okay. Well, on your first part of your question, yeah, we -- I mean last earnings call, we have indicated there was a strong sense of demand, and we have seen that continue unabated in terms of that strong demands such that's coming in. Now, of course, we all realize lead times -- manufacturing lead times on most of these cutting-edge products is fairly extended. I mean, you don't make this manufacture -- this product under our process in anything less than six months or thereabouts. And while there is strong demand and strong urgency of demand, the ability to ramp up won't be more measured and addressing demands that are most urgent.

On the second part, no, we've always seen competition, and really even in traditional workloads in enterprise data centers and hyperscale data centers, our business -- our markets in networking, switching, routing continues to face competition. So really nothing new here. The competition continues to exist and we all -- each of us do the best we can in the areas we are best at doing.

Q - Ross Seymore {BIO 20902787 <GO>}

Thank you.

Operator

Thank you. One moment for our next question. That will come from the line of Vivek Arya with Bank of America Securities. Your line is open.

Q - Vivek Arya {BIO 6781604 <GO>}

Thanks for taking my questions. Hock, I just wanted to first clarify. I think you might have mentioned it, but I think last quarter you gave a very specific numerical target of $3 billion

in ASICs and $800 million in switches for fiscal '23. I just wanted to make sure if there is any specific update to those numbers. Is it more than $4 billion in total now, et cetera?

And then my question is longer-term, what do you think the share is going to be between kind of general-purpose GPU-type solutions versus ASICs? Do you think that share shifts towards ASICs? Do you think it shifts to work general-purpose solutions because if I look outside of the compute offload opportunity, you have generally favored, right, more the general-purpose market? So I'm curious how do you see this share between general-purpose versus ASICs play out in this AI processing opportunity longer term.

A - Hock E. Tan {BIO 1460567 <GO>}

On your -- first part of your question, you guys love your question in two parts. Let's do the first part first.

You know, we guided or we indicated that for fiscal '23, that the revenue we are looking in this space is $3.8 billion. There's still no reason nor we're trying to do it now in the middle of the year to change that forecast at this point. So we still keep to that guide -- that forecast we've given in fiscal '23. We obviously, give a sense of trajectory in my remarks on what we see '24 to look like. And that again is a guide -- is a broad trajectory of the guidance, nothing more than that. Just to give you a sense for the accelerated move from '22, '23 and headed into '24, nothing more than that. But in terms of a specific number that you indicated, we gave, it's -- we stay by our forecast of fiscal '23, 3.8, [ph] frankly because in my view, it's a bit early to give you any revised forecast.

Then beyond that, on your most brand-specific questions, ASICs versus merchant. You know, I always favor merchant, whether it's in compute, whether it's in networking. It's -- to -- I mean, my long-term merchant will eventually, in my view, have a better shot at prevailing. But what we are not talking -- what we're talking about today is obviously, a shorter-term issue versus a very long-term issue. And the shorter-term issue is yeah, compute offload exists, but again, the number of players in compute offload ASICs is very, very limited and that's what we continue to see.

Q - Vivek Arya {BIO 6781604 <GO>}

Thank you, Hock.

Operator

Thank you. One moment for our next question. And that will come from the line of Harlan Sur with J.P. Morgan. Your line is open.

Q - Harlan Sur {BIO 6539622 <GO>}

Hi. Good afternoon, and thanks for taking my question. Great to see the strong and growing ramp of your AI compute offload in networking products. On your next-generation -- Hock, on your next-generation AI and compute offload programs that are in the design phase now, you've got your next-gen switching and routing platforms that are being qualified like are your customers continuing to push the team to accelerate the design funnel, pull in program ramp timing?

And then I think you might have addressed this, but I just want to clarify. All of these solutions use the same type of very advanced packaging like stacked die HBM memory, CoWoS packaging, and not surprisingly, this is the same architecture used by your AI GPU peers, which are driving the same strong trends. So is the Broadcom team facing are expected to face like advanced packaging, advanced substrate supply constraints? And how is the operations team going to sort of manage through all of this?

A - Hock E. Tan {BIO 1460567 <GO>}

Well, you're right, in that they we -- this AI product -- in these generative AI products, next-generation, current-generation are all using very leading-edge technologies in wafers, silicon wafers and substrates and packaging, including memory stacking. And -- but you know, it's -- from consumption, it's still -- there's still products out there and there's still capacity out there as I say. And this is not something you want to be able to ship or deploy right away. It takes time, and we see it as a measured ramp over that has started in fiscal '23 and will continue its pace through to '24.

Q - Harlan Sur {BIO 6539622 <GO>}

And on the design wins funnel, are you seeing customers still trying to pull in all of their designs?

A - Hock E. Tan {BIO 1460567 <GO>}

No. It's -- you know, we are -- our basic opportunity still lies in the networking of AI networks, and we have the products out there and we are working with many, many customers obviously, to put in place this aggregated -- distributor disaggregated architecture, which of Ethernet fabric on AI. And yeah, that's a lot of obvious interest and lots of design that exists out there.

Q - Harlan Sur {BIO 6539622 <GO>}

Thank you, Hock.

Operator

Thank you. One moment for our next question. And that will come from the line of Timothy Arcuri with UBS. Your line is open.

Q - Timothy Arcuri {BIO 3824613 <GO>}

Thanks a lot. And Hock, I was wondering if you can sort of help shed some light on the general perception that all this AI spending is sort of boxing out traditional compute. Can you talk about that? Or is it that just CapEx budgets are going to have to grow to support all this extra AI CapEx? I mean, the truth is probably somewhere in between, but I'm wondering if you can help shed some light on just the general perception that all of this is coming at the extent of the traditional compute and the traditional infrastructure. Thanks.

A - Hock E. Tan {BIO 1460567 <GO>}

You know, your estimate -- your guess is as good as mine. Actually, I can't tell either. I mean right days and there's this AI network and this budget that now allocated more and

more by the hyperscaler towards this AI networks, but not necessary, particularly in enterprise at the expense of traditional workloads and traditional data centers.

I think there is going to be -- there is definitely coexistence and a lot of the launch amount we're spending an AI today that we see for us that is very much on the hyperscale. And so enterprises are still focusing a lot of their budget as they have on the traditional data centers and traditional workloads supporting x86. And -- but it's just maybe too early to really for us to fund -- to figure out whether that is that cannibalization.

Q - Timothy Arcuri {BIO 3824613 <GO>}

Thank you, Hock.

Operator

Thank you. One moment for our next question. And that will come from the line of Ambrish Srivastava with BMO Capital Markets. Your line is open.

Q - Ambrish Srivastava {BIO 4109276 <GO>}

Hi. Thank you very much, Hock. And I have a less (inaudible) topic to talk about, but this is very important in how you manage the business. You talk about lead times and especially in the light of demand moderating, manufacturing cycle times coming down, not to mention the six-month that you highlighted for the cutting-edge. Are you still staying with the 52-week kind of early quoting to customers, or has that changed? Thank you.

A - Hock E. Tan {BIO 1460567 <GO>}

By the way, it's 50. Yes, my standard lead-time for our products is 50 weeks and we are still staying with it because it's not about as much lead-time to manufacture the products as our interest and frankly, mutual interest between our customers and ourselves to take a hard look at providing visibility for us in ensuring we can supply and supply in the right amount at the right time their requirements. So yes, we're still sticking to 50 weeks.

Q - Ambrish Srivastava {BIO 4109276 <GO>}

Got it. Thank you, Hock.

Operator

Thank you. One moment for our next question. And that will come from the line from Harsh Kumar with Piper Sandler.

Q - Harsh Kumar {BIO 3235392 <GO>}

Yeah. Hey, Hock. I was hoping you could clarify something for us. I think earlier in the beginning of the call when you gave your AI commentary, you said that gen AI revenues are 15% odd today. They will go to 25% by the end of 2024. That's practically all your growth. That's the 4 -- $3 billion, $4 billion that you grow.

So looking at your commentary, I know your core business is doing really well, so I know that I'm probably misinterpreting it. But I was hoping that maybe there is not too many -- hoping that there is no cannibalization going on in your business, but maybe you could clarify for us.

A - Hock E. Tan {BIO 1460567 <GO>}

To answer from an earlier question by a peer of yours, we do not see -- obviously, we don't know. We do not see cannibalization, but these are early innings, relatively speaking, and budgets don't change that rapidly. If there is cannibalization, obviously, it comes from where the spending goes in terms of priority. It's not obvious to us there is that the clarity to be able to tell you that's cannibalization, none in the list.

And by the way, if you look at the numbers that all the growth is coming from it, perhaps, you're right. But as we talk -- as we sit here in '23, and we still show some level of growth, I would say, we still show growth in the rest of our business, in the rest of our products augmented perhaps -- that growth is augmented with the growth in AI revenue in delivering AI products. But it's not entirely all-out growth. I would say, at least half the growth is still on our traditional business. The other half may be out of generative AI.

Q - Harsh Kumar {BIO 3235392 <GO>}

Thank you so much.

Operator

Thank you. One moment for our next question. And that will come from the line of Karl Ackerman with BNP Paribas. Your line is open.

Q - Karl Ackerman {BIO 19693285 <GO>}

Yes. Thank you for taking my question. Hock, you rightly pointed to the customer silicon opportunity that supports your cloud AI initiatives. However, your AI revenue that's not tied to customer silicon appears to be doubling in fiscal '23, and the outlook for fiscal '24 implies that it will double again. I mean, obviously, Broadcom has multiple areas of exposure to AI, really across PCI switches, Tomahawk, Jericho and RMON, ASICs and electro-optics.

I guess, let's talk about opportunity. Do you see your electric optics portfolio playing a role in high-performance networking environments for inferencing and training AI applications?

A - Hock E. Tan {BIO 1460567 <GO>}

No. What you said is very, very insightful. It's -- a big part of our growth now in AI comes from the networking components that we supply into creating this Ethernet fabric for AI clusters. In fact, a big part of it you hit on the rate of growth there. It's probably faster than offload computing can grow, and that's where we're focused on.

As I say, our networking products are merchant standard products, supporting the very rapid growth of generative AI clusters out there in the compute side. And for us, this growth in the networking side is really the faster part of the growth.

Q - Karl Ackerman {BIO 19693285 <GO>}

Thank you.

Operator

Thank you. One moment for our next question. That will come from the line of Joseph Moore with Morgan Stanley. Your line is open.

Q - Joseph Moore {BIO 17644779 <GO>}

Great. Thank you. I wanted to ask about the renewal of the wireless contract. Can you give us a sense for how much sort of concrete visibility you have into content over the duration of that? And just you mentioned it's both RF and wireless connectivity, just any additional color you can give us would be great.

A - Hock E. Tan {BIO 1460567 <GO>}

Okay. Well, I don't want to do be what's (inaudible) or nitpicky. It's an extension, I would call it, of our existing long-term agreement, and it's an extension in the form of a collaboration and strategic arrangement is the best way to describe. It's not really a renewal, but the characteristics are similar, which is with supply technology, with supply products in a bunch of very specific products related to 5G components and wireless connectivity, which is our strength, which is the technology we keep leading in the marketplace. And it's multi-year, and beyond that, I truly -- what I'll refer you to our 8-K and not provide any more specifics simply because of sensitivities all around.

Q - Joseph Moore {BIO 17644779 <GO>}

Great. Thank you.

Operator

Thank you. One moment for our next question. And that will come from the line of Christopher Rolland with Susquehanna. Your line is open. Mr. Rolland, your line is open.

Okay. We'll move on to the next question. And that will come from the line of Toshiya Hari with Goldman Sachs. Your line is open.

Q - Toshiya Hari {BIO 6770302 <GO>}

Hi. Thank you so much for taking the question. And Hock, I'm curious how you're thinking about your semiconductor business long-term. You've discussed AI pretty extensively throughout this call. Could this be something that drives higher growth for your semiconductor business on a sustained basis?

I think historically you've given relatively subdued or muted growth rates for your business vis-a-vis many of your competitors. Is this something that can drive sustained -- the growth acceleration for your business? And if so, how should we think about the rate of R&D for us going forward as well because I think your peers are growing R&D faster than what you guys are doing today. Thank you.

A - Hock E. Tan {BIO 1460567 <GO>}

Well, very, very good question, Toshiya. Well, we are still a very broadly diversified semiconductor company, as I pointed out, with multiple -- with still multiple end-markets beyond just AI. Most of which AI revenue happened to sit in my networking segment of the business as you all noted and you see. So we still have plenty of others. And even as I mentioned for fiscal '24, our view is that it could hit over 25% of our semiconductor revenue.

We still have many large number of underpinnings for the rest of our semiconductor business. I mean, our wireless business, for instance, has a very strong lease of life for multi-years and that's a big chunk of business, just that the AI business appears to be trying to catch up the way in terms of the size, but our broadband service storage enterprise business continues to be very, very sustainable.

And when you mix it all up, I don't know. We haven't updated our focus long-term. So, Toshiya, I really have nothing more to add than what we have already told you in the past. Would it have a bigger difference in our long-term growth rate, don't know. We haven't thought about it. I leave it to you to probably speculate before I put anything on paper.

Q - Toshiya Hari {BIO 6770302 <GO>}

Appreciate it. Thank you.

Operator

Thank you. One moment for our next question. And that will come from the line of William Stein with Truist Securities. Your line is open.

Q - William Stein {BIO 15106707 <GO>}

Great. Thank you. Hock, I'm wondering if you can talk about your foundry relationships. I know you've got a very strong relationship with TSM, and of course, Intel has been very vocal about winning new customers potentially. I wonder if you can talk about your flexibility and openness in considering new partners, and then maybe also talk about pricing from foundry and whether that's influencing any changes quarter-to-quarter. There have been certainly a lot price increases that we've heard about recently and I'd love to hear your comments. Thank you.

A - Hock E. Tan {BIO 1460567 <GO>}

Thank you. We tend to be very loyal to our suppliers. The same reason we look at customers the same -- in that same manner. It cuts both ways for us. So that's deep binding loyalty to all our key suppliers. Having said that, we also have to be very realistic

of the geopolitical environment we have today. And so we are also very open to looking in certain specific technologies to broaden our supply base. And we have taken steps to constantly look at it much as we still continue want to be very loyal and fair to our existing base.

So no. And so we continue that way. And because of that partnership and loyalty, for us, price increase is something that is a very long-term thing. I know, it's part of the overall relationship and put it simply, we don't move because -- just because of prices. We stay put because of support service and abiding sense of -- a very abiding sense of commitment mutually.

Q - William Stein {BIO 15106707 <GO>}

Thank you.

Operator

Thank you. One moment for our next question. And that will come from the line of Edward Snyder with Charter Equity Research. Your line is now open.

Q - Edward Snyder {BIO 2498283 <GO>}

Thank you very much. Basically a housekeeping question. It sounded like your comments in the press release on the wireless deal did not include mixed signal which is part of your past agreement. I mean everything you seem to have said today doesn't suggest that may not be the mix in wireless and all that, but you're also doing a lot of mixed-signal stuff too, so if you can provide some clarity on that.

And then also, why should we expect the increased interest in gen -- AI to increase the prospects if not the orders immediately for electro-optic products that are coming on basically, [ph] but I think that would be much greater demand given the clusters and the size of these are ways that people are trying to put together and it provides enormous benefits I think empower with it. So maybe give us some color on that. Thanks.

A - Hock E. Tan {BIO 1460567 <GO>}

All right. You have two questions here on. Don't you, Ed?

Q - Edward Snyder {BIO 2498283 <GO>}

Well, that was a two-part question. I was going to do a three more part one.

A - Hock E. Tan {BIO 1460567 <GO>}

All right. Thank you. I love you guys have your multipart questions. Let's do the first one. You're right, our long-term collaboration agreements that we recently-announced includes asset indicator, wireless connectivity and 5G components. It does not include the high-performance analog components -- mixing of components that we also sell to the North American OEM customer.

All right. That doesn't make it any less. I would add strategic non-deeply engage with each other. I would definitely hasten to add. And on the second part, Ed, and if we could indulge me, could you repeat that question?

Q - Edward Snyder {BIO 2498283 <GO>}

Yes. So you're talking about generative AI and the increasing demand that you're seeing from hyperscale guys, and we've already seen how big these clusters can get and it's really putting I don't want to say [ph] stress on your networking assets. But I would think given the size of the razor facing with the electro-optic products that you're releasing next in Tomahawk 5 that you're releasing next year, that puts the Tomahawk right on the chip will become more attractive because it significantly reduces the power requirements. And I know (inaudible) deployed, but I would think interest in that should increase. Am I wrong?

A - Hock E. Tan {BIO 1460567 <GO>}

You're not wrong. All of this, as I indicated upfront in my remarks, yeah, we see our next generation coming up Tomahawk 5, which will have silicon photonics, which is called packaging as a key part of that offering, and not to mention that is going up to 51 terabit per second then cut-through bandwidth is exactly what you want to put in place for very-high demanding AI networks. Especially those AI networks start running to 30 -- over [ph] to 32,000 GPU clusters running at 800 gigabit per second. Then you really need a big amount of switching because those kind of networks, as I mentioned, have to be very low latency, virtually lossless. Ethernet lossless calls for some interesting signs and technology in order to make Ethernet losses because by definition, Ethernet tends to have it traditionally but the technology is there to make it losses.

So all this fits in with our new generation of products, and not to mention our Jericho 3 AI, which as you know, the router has a unique -- a differentiated technology that allows for very, very low tail latency. And in terms of how it transmits and reorder packets, so that there is no loss and very little latency. And that exists in network routing in telcos, which we now apply to AI networks in a very effective manner. And that's our whole new generation of products, so yes, we are leaning into this opportunity with our networking technology and next-generation products very much. So you hit it right on. And which is one makes it very exciting for us in AI is in the networking area -- networking space that we see more interesting opportunities.

Operator

Thank you. One moment for our next question. And that will come from the line of Antoine Chkaiban with New Street Research. Your line is open.

Q - Antoine Chkaiban {BIO 21142044 <GO>}

Hi. Thank you very much for the question. I'll stick to a single-part question. Can you maybe double-click on your computes offload business? What can you maybe tell us about how growth could split between revenues from existing customers for potential diversification of that business going forward? Thank you.

A - Hock E. Tan {BIO 1460567 <GO>}

Thank you. Good question. And I reiterate the answers in some other ways I've given to certain other -- our audience who have asked this question. We really have only one real customer -- one customer, and in my forecast, in my remarks so far in offload computing, it's pretty much very, very largely around one customer. It's not very diversified. It's very focused. That's our compute offload business.

Operator

Thank you. One moment for our next question. And that will come from the line of C.J. Muse with Evercore ISI.

Q - Kurt Sievers {BIO 16696736 <GO>}

Hey, thank you. This is Kurt Sievers [ph] on for C.J. Wanted to touch on software gross margins which continue to tick higher alongside softness in Brocade. Curious what sort of visibility you may have into Brocade stabilization, and how we should think about software gross margins as the mix normalizes. Thank you.

A - Hock E. Tan {BIO 1460567 <GO>}

Okay. Well, you know, our core -- our software segment comprises, you hit it correctly, two parts. That's our core software products revenue and sold directly to enterprises. And these are typical infrastructure software products, and there are multi-year contracts and we have a ton -- and we have a lot of backlog -- something like $17 billion of backlog averaging over almost two and a half, three years, and every quarter, a part of that renews ad we give you the data on it. It's very stable.

And given our historical pattern of renewing on expanding consumption of our core group of customers, we tend to drive that in a very stable manner and the growth rate is very, very predictable and we're happy with that. Then we overlay on a business that is software, but also very appliance-driven, the fiber-channel SAN business or Brocade. And that's very enterprise driven, and very, very much soon, [ph] you only use it by enterprises obviously, unless enterprises are there, and it is a fairly cyclical business.

And last year was a very strong upcycle, and this year, not surprisingly, the cycle not as strong, especially compared year-on-year to the very strong numbers last year. So this will be -- this is the phenomenon. This -- the outcome of the combining the two is what we're seeing today. But given another my view next year, the cycle could turn around and Brocade would go on, and then instead of a 3% year-on-year growth in this whole segment, we could end up with a high-single-digit year-on-year growth rate because the core software revenue, as I've always indicated you guys, you want to plan long-term on mid-single-digit year-on-year growth rate. And that's the very predictable part of our numbers.

Operator

Thank you. And today's final question will come from the line of Vijay Rakesh with Mizuho. Your line is open.

Q - Vijay Rakesh {BIO 5884146 <GO>}

Yeah. Hi, Hock. Just a quick. I'll keep it a two-part question for you to wrap up. So just wondering what the content uplift for Broadcom is on an AI server versus a general compute server? And if you look at generative AI, what percent of servers today are being outfitted for generative AI as you look you have the dominant share there? And where do you see that uptake ratio for generative AI and year out if you look at fiscal '24-'25?

A - Hock E. Tan {BIO 1460567 <GO>}

I'm sorry to disappoint you on your two part, but it's too early for me to be able to give you a good answer or a very definitive answer on that because by far the majority of servers today are your traditional servers driving x86 CPUs, and your networking today a very, very still running Ethernet traditional data center networking because most enterprises -- it's not virtually all enterprises today are very much still running their own traditional servers on x86.

Generative AI is something so new and in a way so -- where the limits of it is so extended that what we largely see today at the hyperscale guys in terms of deploying at scale those generative AI infrastructure.

Enterprises continue to deploy and operate a standard x86 servers and Ethernet networking in their traditional data centers, and so that's still. So what we're seeing today maybe early part of the whole cycle, that's the question, which is why I'm -- I cannot be -- I cannot give you any definitive view opinion of how -- what the attach rate, what the ratio will be, or if there is any stability that could be achieved anywhere in the near-term. We see both running and co-existing very much together.

Q - Vijay Rakesh {BIO 5884146 <GO>}

Thanks.

A - Hock E. Tan {BIO 1460567 <GO>}

All right.

Q - Vijay Rakesh {BIO 5884146 <GO>}

Thank you. Thanks.

Operator

Thank you. I would now like to turn the call over to Ji Yoo for any closing remarks.

A - Ji Yoo {BIO 22177393 <GO>}

Thank you, operator. In closing, we would like to highlight that Broadcom will be attending the BoA Global Technology Conference on Tuesday, June 6th. Broadcom currently plans

to report its earnings for the third quarter of fiscal '23 after close of market on Thursday, August 31, 2023. A public webcast of Broadcom's earnings conference call will follow at 2:00 PM Pacific.

That will conclude our earnings call today. Thank you all for joining. Operator, you may end the call.

Operator

Thank you all for participating. This concludes today's program. You may now disconnect.