# Q4 2021 Earnings Call

## Company Participants

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

## Other Participants

- Harlan Sur, Analyst
- John Pitzer, Analyst
- Ross Seymore, Analyst
- Srini Pajjuri, Analyst
- Stacy Rasgon, Analyst
- Timothy Arcuri, Analyst
- Toshiya Hari, Analyst
- Vivek Arya, Analyst

## Presentation

### Operator

Hello and welcome to Broadcom Inc's Fourth Quarter and Fiscal Year 2021 Financial Results Conference Call.

At this time for opening remarks and introductions, I will turn the call over to Ji Yoo, Director of Investor Relations of Broadcom, Inc. You may begin.

### Ji Yoo {BIO 21112206 <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; Tom Krause, President, Broadcom Software Group; and Charlie Kawwas, Chief Operating Officer. Broadcom also distributed a press release and financial tables after the market closed, describing our financial performance for the fourth quarter and fiscal year 2021. 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 a recording will be available via telephone play back for one week. It will also be archived in the Investors Section of our website at broadcom.com. During the prepared comments, Hock and Kirsten will be providing details of our fourth quarter and fiscal year 2021 results, guidance for our first 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 the environment we have today and enterprise demand rebounded sharply over 30% year-on-year. Hypercloud and service provider demand continued to be strong and strong wireless growth in Q4 was driven by the seasonal launch of next generation smartphones by our North American OEM. Our core -- meanwhile, our core software business continues to be steady with a focus on strategic customers.

On the supply side, our lead times remain extended and stable. Inventory in our channels and at our customers remains very lean. Accordingly in Q4, Semiconductor Solutions revenue grew 17% year-on-year to $5.6 billion and with Infrastructure Software revenue growing 8% year-on-year to $1.8 billion. Consolidated net revenue was a record $7.4 billion, up 15% year-on-year.

Let me now provide more color by end-markets. Let's start with networking. Networking revenue of $1.9 billion was up 13% year-on-year, in line with our forecast for low double-digit growth and represented 34% of our semiconductor revenue. Double-digit year-on-year growth was primarily driven by strong demand from campus switching, both from our merchant silicon, as well as ASIC solutions through OEMs like Cisco and HP. We also experienced similar double-digit growth with the deployment of Jericho routers within large-scale AI networks in the cloud, as well as Qumran in 5G infrastructure and DCI.

Our unique capability -- our unique capability here to deliver ultra-low latency ethernet networks, enables large-scale deployment of AI compute for the cloud. Meanwhile, in the core of these large data centers, we have begun to ramp Trident 4 and Tomahawk 4, the world's first -- first 25.6 terabyte per second switch to several hyperscale cloud customers as they address their ever-growing need for bandwidth demand in scaling out their massive data centers.

Now within the hyperscale cloud, we continue to lead in delivering ASIC silicon for multiple compute offload accelerators, which has manifested into being 20% of our net working revenue. We expect continued growth in the next fiscal year here to over $2 billion. The key to our success here lies with our robust design methodology which integrates a broad and substantial silicon IP and rapidly delivers world-class customized silicon SOCs to enable AI, virtualization, orchestration, video transcoding and security. We have now extended our footprint here beyond TPUs at multiple cloud customers. In Q1, networking is -- is firing on all cylinders and we expect networking revenue growth to accelerate to close to 30% year-on-year.

Next, our server storage connectivity revenue was $815 million, up 21% year-on-year, in sharp contrast to the first half of 2021 and represented 15% of semiconductor revenue. The better-than-expected results were driven by robust demand for storage controllers and Host Bus Adapters from renewed spend by enterprises upgrading their compute and storage infrastructure.

Additionally, (technical difficulty) hypercloud storage, we saw accelerated migration to (technical difficulty) terabytes. And the start of 20 terabyte hard disk drives, which drove our nearline storage revenue. To put things in perspective, today our nearline storage business is close to a billion dollars on an annualized basis. We continue to gain share in server storage connectivity as we expand our leadership in next generation SaaS 4, PCI Express Gen 5 and NVMe. Spending for enterprise continues to recover and we expect this will accelerate growth in our server storage connectivity revenue in Q1 to approximately 30% year-on-year growth.

Moving on to broadband, revenue of $872 million grew 29% year-on-year and represented 16% of semiconductor revenue. This was driven by the continued strong growth in deployment by service providers globally of next generation PON with Wi-Fi 6 and 6E access gateways. We continue to lead the industry with a portfolio of end-to-end integrated solutions across multiple access -- access protocols, whether it be PON, cable modem and DSL, all SOC controllers each with integrated the Wi-Fi managed through us software stacks, to reliably deliver more bandwidth, faster data speeds from the core service provider networks to homes. And a critical element in our broadband platform, I might add, is leading-edge Wi-Fi. Wi-Fi 6 and 6E today, and Wi-Fi 7 tomorrow. Having leading-edge wireless is important for service provider customers to reach digital homes from their networks.

By the same token, in campus switching in enterprises, it is also critical that our OEMs can connect enterprise data centers through campus switches to the access points with leading-edge Wi-Fi. In both markets, our platforms which encompass wired and wireless silicon and software uniquely differentiate Broadcom and sustain our market leadership. So in Q1, we expect this double-digit percent year-on-year growth rate in broadband to continue as we have seen for the last few (technical difficulty).

Moving on to wireless. Consistent with the launch of our customers' next generation phone during the quarter, Q4 revenue of $1.8 billion represented 32% of semiconductor revenue and was up 21% against a softer Q4 quarter a year ago. Nevertheless, we expect continuing strong demand into Q1 and what -- which will drive wireless revenue to be up sequentially single-digit and be flat-to-up low single-digit percentage year-on-year from the peak of a year ago.

Finally, industrial revenue of $197 million represented approximately 3% of our Q4 semiconductor solutions revenue. Having said this, resales of industrial of $232 million grew 36% year-over-year in Q4, driven by strong demand from OEMs for electric vehicles, robotics, factory automation and healthcare. As a result, our inventory in the general declined further to below a month.

And turning to Q1, we expect resales to continue to be strong and at the levels we saw in Q4. In summary, Q4 semiconductor solutions revenue was up 17% year-on-year. And in Q1, we expect the momentum to continue and revenue growth to be up double-digits again year-on-year. This implies that Q1 semiconductor revenue will be up low single-digits sequentially.

Turning to software, Q4, Infrastructure Software revenue of $1.8 billion grew 8% year-on-year, represented 24% of total revenue. Within this, Brocade showed strong growth of 19% year-on-year, consistent with strong enterprise recovery during the quarter and deployment of our next generation, generation seven fiber channels and products. Now excluding Brocade, our core software revenue grew 6% year-on-year. In dollar terms, consolidated renewal rates averaged 116% over expiring contracts, while within our strategic accounts, we actually averaged 127% consistent with prior quarters. Over 90% of the (technical difficulty) value represented recurring subscription and maintenance.

Stepping back and following the Software Investor Day last month, let me provide an update on the entire fiscal '21 for our core software. Total backlog at the end of the year totaled $14.9 billion, up 15% from a year ago, with average duration of contracts extending from 2.6 to 2.9 years. This backlog translates into an ARR or annual recurring revenue of $5.2 billion, which was up 5% from a year ago. 74% of this ARR comes from our approximate -- approximately 600 strategic accounts, which in fiscal '21, we renew at a 129% or $2.4 billion of annual -- annualized booking value. $1.9 billion of this represented renewals on expiring contracts and roughly $500 million represented cross selling, including PLAs of our portfolio products to these strategic customers.

For the year, we booked over 300 contracts generating greater than $1 million of revenue annually, with over 30 contracts generating over $10 million annually. With such stability in Q1, we expect our Infrastructure Software revenue to continue to sustain around mid single-digit percentage growth year-over-year.

So let me summarize. With the continued strength in our semiconductor segment and steady -- steady growth in our software segment, total Q4 net revenue grew 15% year-on-year.

Turning to Q1, semiconductor revenue excluding wireless is expected to be up 28% year-on-year. Wireless is expected to grow flat-to-low single-digit percentage compared to the peak of a year ago. So semiconductor revenue in total is expected to grow 17% year-on-year again and consolidated revenue is expected to grow 14% year-on-year. Sequentially, this will drive revenue to grow from $7.4 billion in Q4 to $7.6 billion in Q1. We are very well positioned in every one of our franchise markets in fiscal '22 and beyond. We continue to significantly out-invest anyone else across our platforms in switching and routing, off load compute, silicon photonics and wireless connectivity to accelerate our next generation road maps, as we continue to gain market share.

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. Revenue was $7.4 billion for the quarter, up 15% from a year ago. Gross margins were 75% of revenue in the quarter and up approximately 105 basis points year-on-year. Operating expenses were $1.1 billion, up 3% year-on-year driven by investment in R&D. Operating income for the quarter was $4.4 billion and was up 20% from a year ago. Operating margin was 59% of revenue, up approximately 286 basis points year-on-year. Adjusted EBITDA was $4.5 billion or 61% of net revenue. This figure excludes $134 million of depreciation.

Now overview of the P&L for our two segments. Revenue for our semiconductor solutions segment was $5.6 billion and represented 76% of total revenue in the quarter. This was up 17% year-on-year. Gross margins for our semiconductor solutions segment were approximately 70%, up 170 basis points year-on-year, driven by favorable product mix and content growth in the next generation products across our extensive product portfolio. Note, that we have been able to continue to expand our semiconductor gross margin despite higher wireless revenue mix.

Operating expenses were $790 million in Q4, up 3% year-on-year. R&D was $701 million in the quarter, up 6% year-on-year. As a side note, for fiscal '22, we are planning to increase R&D spend in semiconductors by mid-to-high single-digit percent year-on-year. As Hock indicated in his remarks, we are committed to investing heavily in our next generation products to maintain and even increase our leadership across all our franchises. Q4 operating margins increased to 56%, up 350 basis points year-on-year. So while semiconductor revenue was up 17%, operating profit grew 24%.

Moving to the P&L for our Infrastructure Software segment. Revenue for Infrastructure Software was $1.8 billion and represented 24% of revenue. This was up 8% year-on-year. Gross margins for Infrastructure Software were 90% in the quarter, up 19 basis points year-over-year. Operating expenses were $353 million in the quarter, up 1% year-over-year. R&D spending at $220 million is up 9% year-over-year and SG&A of $133 million is down 10% year-over-year. Operating margin was 70% in Q4, up 166 basis points year-over-year and operating profit grew 11%.

Moving to cash flow. Free cash flow in the quarter was $3.5 billion, representing 47% of revenue. We spent $88 million on capital expenditures. Days sales outstanding were 25 days in the fourth quarter compared to 32 days a year ago. We ended the fourth quarter with inventory of $1.3 billion, an increase of $137 million or 12% from the end of the prior quarter in preparation to meet customer demand in Q1. We ended the fourth quarter with $12.2 billion of cash and $39.7 billion of total debt, of which $290 million is short-term.

Turning to capital allocation. In the quarter, we paid stockholders $1.486 billion of cash dividends. We also paid $266 million in withholding taxes due on vesting of employee equity, resulting in the elimination of 525,000 AVGO shares. We ended the quarter with 413 million outstanding common shares and 448 million diluted shares. Based on current business trends and conditions, our guidance for the first quarter of fiscal 2022 is for consolidated revenues of $7.6 billion and adjusted EBITDA of approximately 61.5% of projected revenue.

Let me recap our financial performance for fiscal year 2021. Our revenue hit a new record of $27.5 billion growing 15% year-on-year. Semiconductor Solutions revenue was $20.4 billion, up 18% year-over-year. Infrastructure Software revenue was $7.1 billion, up 7% year-on-year. Gross margin for the year was 75%, up 100 basis points from a year ago. Operating expenses were $4.5 billion, down 2% year-on-year, as we completed the integration of Symantec. Operating income from continuing operations was $15.9 billion, up 23% year-over-year and represented 58% of net revenue. Adjusted EBITDA was $16.5 million, up 21% year-over-year and represented 60% of net revenue. This figure excludes $539 million of depreciation.

We spent $443 million on capital expenditures and free cash flow represented 49% of revenue or $13.3 billion. Free cash flow grew 15% year-over-year. For the year, we returned $7.5 billion to our stockholders, consisting of $6.2 billion in the form of cash dividends and $1.3 billion for the elimination of 2.8 million AVGO shares. We have extended our weighted average debt maturity to approximately 10.6 years, with a weighted average interest rate of approximately 3.6%.

Looking ahead to fiscal 2022, we remain committed to returning approximately 50% of our prior year free cash flow to stockholders in the form of cash dividends. Consistent with that, we are increasing our quarterly common stock cash dividend in Q1 fiscal '22 to $4.10 per share, an increase of 14% from the prior quarter. We intend to maintain this target quarterly dividend throughout this year, subject to quarterly Board approval.

Today, as part of our commitment to return capital to shareholders, we announced that the Company's Board of Directors has authorized the repurchase of $10 billion of our common stock under Broadcom's new share repurchase program. The authorization is effective until December 31, 2022. This new share repurchase program reflects our confidence in the Company's ability to generate strong and sustainable cash flow. Note that we expect the diluted share count to be 448 million in Q1. This excludes the potential impact of any share repurchase.

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

## Questions And Answers

### Operator

Thank you. (Operator Instruction) Our first question comes 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 congrats on the very solid results. Hock, I know you guys don't guide for the full year, but I was hoping you could kind of walk us through how you're thinking about fiscal year '22 on the semiconductor side. You know obviously bookings have been strong and continue to be strong across most of your buckets or end markets within semis. But if you can talk about bookings trends in the quarter, what you're seeing there, that would be super helpful. And then as you sort of answer the fiscal '22 question, if you can touch on supply and to what extent supply could be a gating factor over the next 12 months, that will helpful. Thank you.

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

That is a very good hell of a question on my end. So let me try to address in its various component, but what we continue to see with the recovery and I made a point of saying that there is now -- we are now in the midst of a very strong spending recovery in enterprise particularly. So we're continuing to see strong demand bookings in the semiconductor side. But a big part of that demand and increasing part of that demand is now coming from enterprise spending, which translates to end markets, tends to drive a lot of our broadband, continue to drive the broadband, which has been strong in most of '21, continuing to drive the enterprise part of our networking business and of course software storage and industrial is just very, very strong.

Having said that, on the hypercloud spending side, a lot of it resides in obviously in our networking business. It's -- things are still fairly very elevated, demand continues to be strong. And so when you combine all this together, we continue to see booking rates being at a fairly -- continue to be at very elevated level week after week so far. And as of right now, we're pretty much booked all the way through '22 and even beyond '22 into '23. If you think about 50-week lead time, no surprise, it goes to late '22. But we've going even in many cases now, gone beyond '22 into '23 and that's partly because, one, timing of our customers planning very far ahead and two, as I said, our continuing disciplined approach to ensuring that we deliver products at the right time to the right place, and we see that going on. And I hate to disappoint you, still -- we are still not really prepared to give you guidance on a whole fiscal year.

## Q - Toshiya Hari {BIO 6770302 <GO>}

Thank you.

## Operator

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

## Q - Stacy Rasgon {BIO 16423886 <GO>}

Hi guys. Thanks for taking my question. Hock, I wanted to follow up on those lead times orders. You said obviously on the industrial space your channel is lean, it sounds like you bookings overall is very strong. At the same time, we know you've been taking efforts to limit like worries around stockpiling and over shipping, whether it's parsing orders, expedite. I was wondering if you could just talk a little bit about what you are doing in that space. How are you feeling right now in terms of your shipments versus where end demand is? And how meaningful those like long with 50-plus week lead times actually are? Do they actually represent demand, even if it's that far out? Like if you could just talk about your efforts there, that would be -- that would be helpful.

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

Yes. Well, we've been doing this 50-weeks now for just since the beginning of '21. So -- and -- and we have been delivering very much as much as we can to those lead times. So in some ways, I'd like to believe it's giving some method -- some method to this booking methods, I guess is one I would call it, in terms of our ability and in terms of where we -- how we are shipping the products and but by keeping lead times very stable and predictable as we are doing now. We are also clearly communicating to our end users, the way they should be planning their business.

And I'd like to think this -- all this is working out in terms of allowing us to making sure we don't over ship and build up extra -- buffer inventory through our -- through our ecosystem out there, that means distributers, channels and customers. And all that has been done purposefully and the truth be told, that the day will come when things have to land and -- and we'd like to make sure it lands very gently and softly. And we like to think that it's working very well.

And, but -- so what we are reporting in some sectors now, what we are guiding in some sectors and reporting, where you see growth of some 20%, 30%, I know even from our perspective, it seems very hot, excessively hot and in those areas in particular, we take strong particular attempt -- to make those attempts to ensure these products we ship are for programs that get deployed, rather than sit on the shelfs for a future need. And so I'd like to believe that -- the areas -- that growth in networking, broadband, service storage lately of some 20% to 30% year-on-year are real to end demand.



## Q - Stacy Rasgon {BIO 16423886 <GO>}

Got it. That's helpful. Just a quick follow up along those lines on enterprise. You gave some numbers for year-over-year growth for things like networking and storage and those year-over-year numbers, does that imply a sequential decline, especially for networking and storage? Or just, I'm not sure if my year ago numbers are changed or not. But do you expect those businesses to decline sequentially within the (multiple speakers) guidance?

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

In me. Depending, then we're talking mathematical numbers now and how we ship, because some of the shipments are lumpy and you may see that for the quarter-to-quarter when you talk about sequential quarter. You may sometimes see then and -- and what I'm trying to say -- and we may also choose to deploying supplying to one market versus another as you go quarter-by-quarter.

So looking at it sequentially, but in specific verticals might sometimes for my -- for our case -- our point of view be, rather misleading, unintentionally I might add, simply because we may choose to deploy -- ship more to, for instance, sometimes to server storage because there is a hotter need there versus to networking and you may see then, because of that networking, see some sequential weakness in one particular -- particular quarter, which is why we report as much as we can on a year-on-year basis, where then you take out the effects of this short-term lumpiness and long short-term discontinuities.

## Q - Stacy Rasgon {BIO 16423886 <GO>}

That's helpful. Thank you so much.

## Operator

Thank you. Our next question comes from the line of Harlan Sur with JP Morgan. Your line is open.

## Q - Harlan Sur {BIO 6539622 <GO>}

Good afternoon and congratulations on the strong results and execution. Hock, you know in your networking business, you've been somewhat conservative on your view on the sustainability of the strong cloud and hyperscale growth, but yet in cloud. I mean, you guys are ramping seven nanometer Tomahawk 4 and Trident 4 during the early innings as the ramps demand is strong, you talked about Jericho and Qumran being strong in routing, your cloud ASIC customer is ramping their seven nanometer TPU and you have more programs firing next year as you mentioned, and then on the enterprise side, your large enterprise OEM customers are benefiting from the strong recovery.

So you're starting off the fiscal year in networking with strong double-digits growth, but do you see your networking business continuing to drive double-digits year-over-year growth for the full year? And will the growth be driven by all three of your end markets, cloud, enterprise and service provider?

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

Harlan, that's a hell of a question. It's -- and the only way I can answer that is it, this is very trying for me to guide -- to ask me to guide you on networking for the year and working, I'm not doing that. But -- but you're right though, there are lot of levers and I articulate quite a few of them and maybe I over say it in some cases and they all seem to be as I use the expression, as we sit here today and going into '22 firing on all cylinders and by that I mean more than just forecasting. We've actually seen the backlog. We have the backlog and they keep building up.

And you're right, hypercloud guys, I like you got -- you would have asked me six months ago, I would not believe the level of spending they are embarking on in right now in '22, but they appear to be. So we -- you're right, enterprise has been strong, and you've seen the rate of growth of enterprise year-on-year of 30% across broadly and cloud has -- as there are current the elevated levels we are seeing in networking, has not softened, has not weakened, it's still sustaining now. Its not recovering obviously year-on-year basis as fast as enterprise is showing, simply because enterprise is starting from a lower point, but cloud is still growing.

We are seeing hypercloud growing and is growing from not just net -- switching and routing, that's our traditional strength, it's growing now for us on -- well, for want of a better expression, collectively call offload computing applications, from virtualization, orchestration and more and more AI, beyond just a single lead customer we have in TPUs to date. So we're seeing multiple -- as I said multiple levers all moving in the right direction for fiscal '22 and good possibilities, what we've seen today, this in Q1 would run for a large part of fiscal '22.

## Q - Harlan Sur {BIO 6539622 <GO>}

Great. Thank you for the insights, Hock.

## Operator

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

## Q - Vivek Arya {BIO 6781604 <GO>}

Thank you for taking my question and congratulations on the strong results and the guidance. So Hock, I find two things interesting, one is, you didn't use the word metaverse in your commentary, but that's not my question. The question is on the buyback announcement. What changed your view, because for some time, you were not as favorable towards buybacks. So the $10 billion announcement, is that more a statement about business trend? Is it lack of M&A targets that -- are you going to be more consistent in buybacks? So that's Part A of the question.

And Part B is that, if I take that $6 billion or $7 billion in dividends that you will pay next year and add the $10 billion in buybacks and apply the free cash flow range that you have. It suggests sales of somewhere in the low-to-mid $30 billion, right, using that math and I know you're not giving a guidance. But does that math make sense? Thank you.

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

Hey, you're very good at these numbers. I shall just bow to those -- those better judgment and wisdom here. Thank you. Next question.

## Operator

Thank you.

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

You have another follow through?

## Q - Vivek Arya {BIO 6781604 <GO>}

Yes, thank you. Yes. So wireless is your more -- most seasonal business, is that a way you're thinking about wireless? So you said it could be up somewhat, right, in the January quarter. How are you thinking about seasonality for that business going into the April quarter?

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

Oh, April quarter is hard to focus. I mean this is consumer, right. So it's very -- I can't even begin to focus, much less -- I think my customer will be better at it and even then I suspect, they are very challenged. But what we do see interestingly is now -- is demand for our components for the January quarter is good, and hence you see the -- you know the fact that even as we measure year-on-year to a all time peak a year ago, was still flattish to slightly up and sequentially from Q4 which this -- in this current round, you're correct in this regard. Q4 is supposed to be back to normal -- normality in seasonality as being the big quarter, our Q1 will exceed our Q4 shipments as we forecast today. So, yes, it's sounds like even that part is doing quite well. It's just that year-on-year compare in percentage terms may not be exciting as the rest of the -- the semiconductor verticals that we're in, but it's still holding up very nicely.

## Q - Vivek Arya {BIO 6781604 <GO>}

Thank you.

## Operator

Thank you. Our next question comes from the line of Ross Seymore with Deutsche Bank. Your line is open.

## Q - Ross Seymore {BIO 20902787 <GO>}

Hi, thanks for letting me ask a question. I guess I'll ask the two questions and then I'll listen to the answers for both the question and the follow-up. So first Hock, I want to revisit kind of the quality of demand and may be ask it a different way. You've talked about under-shipping what the actual demand or what you're bookings are, because you believe you can ship to actual demand. So that delta between what you're shipping and what is being booked, is that changing, is it shrinking, growing? Basically trying to get at any change in customer behavior.

And then the second question would be a separate one for Kirsten, you mentioned about the OpEx in the semiconductor side rising going forward. Any more color about the linearity of OpEx as we go throughout the year? And any color on kind of the areas that would be focuses of that investment?

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

On the first, Ross, that's a very, very clever question I might add. Has anything changed between what we're booking versus what we're shipping. I'm trying to answer it not because -- I'm not trying to answer it is because the demand by verticals has rotated somewhat. And you can probably understand it. So what I'm saying is, one clear example is what I'm saying now, enterprise is actually waking up big time and they are asking for products -- they asking for products in a very, very urgent manner. And so we are seeing more ship -- a lot more shipments to OEMs who support those enterprises.

And by verticals, we are seeing strength in -- in basically in server storage in particular and also the enterprise portion all for networking, hence the strength in, as I mentioned campus switching and Wi-Fi in many -- in many ways, because enterprise you know campus switching now for enterprise switching, needs a wireless strategy component. And so we're seeing our Wi-Fi business for access gateways in enterprise really take off now.

Having said that, our classification of cloud includes telcos service providers. There have been steady. It's interesting cloud and telcos have been steady. And -- but have been steady in different manner. The cloud guys are now pushing more and more into compute outload, I mean the programs we're working on starting to happen -- is starting to manifest as deployment. So we're seeing that and that is really driving some more growth than just normal switching and routing that we have seen super strong in 2021.

We have seen areas like in some of their very massive scale out of machine learning or AI networks, here you need a different kind of performance of those networks. So we've seeing a different kind of products going into that areas and I highlighted in my remarks about Jericho being going into many of those AI networks in hypercloud and of course 5G continues to be -- goes through cycles and happen to be a (technical difficulty) 5G deployment and back haul is strong and we ship a lot of Qumrans.

So it varies. But if you take it from a macro point of view, not -- hasn't changed from six months ago, Ross, which is the under shipment from the level of bookings we are seeing.

## Q - Ross Seymore {BIO 20902787 <GO>}

So, the OpEx Kirsten.

## A - Kirsten Spears {BIO 19712531 <GO>}

Sure. Hi, Ross. So what I would expect, the way I'd look at OpEx, I'll comment on our consolidated view for the Company. You're going to see a step-up in Q1, definitely. And then, remember in Q2, we have the -- the payroll taxes that we pay in Q2. So we have another step-up in Q2 and then for the rest of the year, I'd look at that continuing out, how I would model that.

## Q - Ross Seymore {BIO 20902787 <GO>}

Great. Thank you.

## Operator

Thank you. Our next question comes from the line of John Pitzer with Credit Suisse. Your line is open.

## Q - John Pitzer {BIO 1541792 <GO>}

Yes. Good afternoon, guys. Thanks for letting me ask the question and congratulations on the strong results. Hock, maybe just a follow on to Ross' question about the R&D commentary that Kirsten had in the prepared comments. With the growth that you're expecting in the semi R&D, do you think that that will outstrip the semiconductor revenue growth for the year or not? And not having had the time yet to go back and look, is this an unusual spend year? And if so, what's driving it? Is it concern about increased competition? Is it the opportunity set getting a lot bigger and kind of what areas are you focused on? And then I have a follow-up.

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

Oh, I think we have continued to be -- to have been spending on R&D in the silicon side on a fairly consistent basis. And so we have. And, but in -- in some other areas and it's not so much about worried about competition as -- see the underlying part of our business model across our various franchises is simply that we always out-invest out-engineer anybody else in the verticals we -- in those franchises verticals we are in and so what -- from our point of view, hey, now is a great, because during COVID-19 in '20 and in part of '21, things were not as moving as fast as perhaps we believe a normal cadence of product cycle turnovers should be, product life cycle.

So we are now jumping in '22 to -- to basically bring it back up to where it should be in terms of a normal product cycle cadences and that -- in that sense, you're right, it's not because of competition, it's because we believe we need to deliver this new generation products with better features, better bandwidth, low latency to our customers who are now ready and willing to take it on.

And with having said that, may invest now, you don't see the impact of that probably until '23, '24. So, but we feel that there is some hiatus of new technology been absorbed in 2021. So, now is the time to really accelerate new technology, new generation of products for it's absorption as much as we could in '22 and definitely in '23. So it's logical that spending would go up and we are stepping up for that.

## Q - John Pitzer {BIO 1541792 <GO>}

And Hock, is it a message that R&D could grow faster than semi revenue growth this year or you're not ready to make that statement yet?

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

Oh, I don't think so. We never tend to do that. We are very well behaved, very disciplined.

## Q - John Pitzer {BIO 1541792 <GO>}

That's helpful. And then as my follow-up Hock, you guys have set up a really consistent track record around the dividend, but buybacks have been a little bit more episodic especially given the M&A strategy. Just with the authorization today, is the intent to do all of that within the next 12 months? Why not an ASR component around that authorization today, just to give investors confidence that you will follow through on the buyback?

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

Good point. But we intend to follow through on -- we intend to do the $10 billion and the reason we're doing it, as you guys can gather is, we haven't done a deal in -- we did not do a deal in '20, did not do a deal in '21 and got tons of cash -- we have pile up a ton of cash and debt has actually -- somewhat the growth there has actually declined somewhat and while our cash position is building out. And while we may still do a deal in '22, it says that we will still be generating a lot more cash in '22. So when we you add up this whole thing, it's just a very logical conclusion for us to not just sit on the cash, hoarded in some ways you may call it, but just returning to you guys as we continue to accumulate cash. And keep in mind, we still have a lot of debt and grow expanding debt capacity as our EBITDA expense and still be within investment grade of course.

## A - Kirsten Spears {BIO 19712531 <GO>}

This is Kirsten. We have consistently said that we would return capital to shareholders if we didn't announce an M&A by December. And so this is in line with what we've been saying and we plan to follow through on it. The $10 billion authorization will be executed pursuant to a trading plan, and it will be thoughtful and it's in line with what we said we'd do.

## Q - John Pitzer {BIO 1541792 <GO>}

Perfect. Thanks, Kristen. Great color.

## Operator

Thank you. Our next question comes from the line of Srini Pajjuri with SMBC Nikko. Your line is open.

## Q - Srini Pajjuri {BIO 5862807 <GO>}

Thank you. And let me also echo my congrats on the solid numbers. Hock, you called out your ASIC business. I think you said it's roughly 20% of the networking business and also said, it's going to be about $2 billion and I'm just curious if you could maybe provide us some additional color as to what's going on with that business. I mean you've been a leader in this market historically. And are you seeing more interest given what's going on with the hyperscale customers and their interest in developing in-house silicon or is this a continuation of a trend or any additional color you could provide, I think that would be helpful.

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

Right. Thank you for that. And by the way, our ASIC business is actually larger than the $2 billion we indicated. It's only that part of the ASIC business sitting in networking that we highlighted, is actually there are a couple of other areas where we do ASIC and it's done on a platform, under one and a particular franchise business that we run fairly separately as one of the product divisions. But you are right though, the larger part of it sits in networking and a big -- and half of it roughly, I would say, maybe grown more than half now, is to the hypercloud (technical difficulty) is to OEM's too, still remain very much OEM-related business as well.

And you're right, but it's a -- but your point is well taken. This is a steady stable business and growing over time, that we've had for many, many years and it has, as I said long time ago, 20 or 15 years ago, 10 years ago, been very much on networking, merchant silicon showed on the networking and which is switching and routing and it has not grown as much in networking, but in its place, having said that, other opportunities show up and most of it -- a lot of it is, what I call collectively offload computing, which is very much tied to hypercloud and that's a businesses that is -- that has been slowly but steadily growing, but it's slow.

And it's not something that shoots up exponentially overnight, because a lot of the hypercloud guys, as much as they have ambition to do their own designs, I like to make that point very clear, it's a very difficult thing for them to do, because, no they can go and hire a silicon architect and designers, it doesn't mean you can define a chip, SOC silicon chip on -- system on a chip that addresses what they're looking for, whether it's good transcoding, whether it's in security or even in virtualization or even in AI, it's hard when you don't do it on a full-time basis.

So we have been working with this hypercloud guys for the last five years and there has been fits and starts in many, many situations for among these hypercloud guys. But the message I want to say is, we're never given up. We continue to work with them and more slowly, more and more, after many tries, some of them become successful, more and more successful and to see the trend of growth in our ASIC business for offload computing.

I mean if those of you who have followed me consistently for the last three, four, five years, you have heard me talk about it three, four, five years ago. Then, two years ago, I just shut up. Because takes a while to get it going and is starting to translate into revenues and ramps now and it will be a nice driver to growth, I believe for us over the next year, two years I would say. So I'm bringing it back up again. But it's always been there.

## Q - Srini Pajjuri {BIO 5862807 <GO>}

Got it and then just to follow up on wireless, Hock, obviously the current demand looks pretty healthy and supply is very tight. But I guess if you take a, maybe a couple of year view out there, it looks like there is somewhat of a concern about 5G cycle peaking. So I'm just curious about how you think about wireless, especially in terms of your content opportunities for the next couple of years. Thank you.

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

Wireless is a great franchise and it continues to chug along very well and that's probably, I am being -- I am definitely wearing rose tinted glasses in this environment, because demand is good and it's holding up still very well. Beyond that, I really don't know the answer to what do you're saying. I do see content increasing over the next several years, because we have various products, multiple products, not just one particular product.

We have multiple -- we have various products into every one of those very high-end smartphones and that gives us opportunity to expand (technical difficulty) and to strengthen and increase our content and, but, and we never really plan for unit increases actually in all our plan, we just plan on some content increase year after year. But never on any unit increase.

So I guess I don't -- I stop thinking or worrying about whether the number of phones is going to decline in 5G in the next one or two years, as much as will the content decline from (technical difficulty) and we have not really seen it on the -- in any fashion that will make us worry.

## Q - Srini Pajjuri {BIO 5862807 <GO>}

Thank you. Very helpful.

## Operator

Thank you. Our last question comes from the line of Timothy Arcuri with UBS. Your line is open.

## Q - Timothy Arcuri {BIO 3824613 <GO>}

Thanks a lot. Hock, I had two. The first is on customer behavior and I'm wondering if you've seen any change there. So I guess the question really is around, are you seeing any change in the portion of customers that want product inside of lead time and are willing to pay your expedite fees? And I guess does that sort of inform you to the degree to which your shipments or the orders are sort of matching underlying consumption?

And then I had a second question too.

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

Not really. It's because I think we have -- we've gone through enough for one year and I think our customers have, most of them anyway, I can't say all of them, have started to plan their needs accordingly. Now it doesn't mean they are perfect in their planning and so occasionally it happens, they come running in and ask for order expedite -- expedite deliveries within lead times and we see that and we work through that. But by and large, our customers are planning better and better, because they have practice at doing that.

I don't mean it's perfect and in many -- in some cases where we can do win, they probably will look for, if they can find alternatives and to the extent there are alternatives, my competition get some benefit on those spot situations and that will happen, because we -- I love to be perfect, but we cannot be and sometimes like customer misses, we miss and that happens in situations and because of previous commitments, we cannot obviously pull in that demand. But those are getting -- those are still happening.

Is that changed since then? No, not for months. I think as I said, customers are much better at doing it now with at least when it comes to dealing with us.

## Q - Timothy Arcuri {BIO 3824613 <GO>}

Got it, Hock. Thank you. And then I guess the last question really is around the wireless and now that you're into December, you should I think have a pretty good handle on how much your content is going to grow for fiscal '22. So I was just wondering if you can sort of give us a sense of maybe how much content is growing, is it growing say let's -- say 10% this year type of thing? Thank you.

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

About 5%, 10%, very consistent with what we thought it would be 6 months ago.

### Q - Timothy Arcuri {BIO 3824613 <GO>}

Perfect. Okay, Hock. Thank you so much.

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

Thanks.

### Operator

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

### A - Ji Yoo {BIO 21112206 <GO>}

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

### Operator

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