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PRESENTATION

Operator

Welcome to the Q4 2021 Harmonic Earnings Conference Call. My name is Valerie, and I'll be your operator for today's call. (Operator Instructions) Please note that this conference is being recorded.

I will now turn the call over to David Hanover, Investor Relations. David, you may begin.

David Hanover

Thank you, operator. Hello, everyone, and thank you for joining us today for Harmonic's fourth quarter 2021 financial results conference call. With me today are Patrick Harshman, President and Chief Executive Officer; and Sanjay Kalra, Chief Financial Officer.

Before we begin, I'd like to point out in addition to the audio portion of the webcast, we've also provided slides to this webcast, which you may see by going to our webcast on our Investor Relations website.

Now turning to Slide 2. During this call, we will provide projections and other forward-looking statements regarding future events or future financial performance of the company. Such statements are only current expectations and actual events or results may differ materially. We refer you to documents Harmonic filed with the SEC, including our most recent 10-Q and 10-K reports and the Forward-looking Statements section of today's preliminary results press release. These documents identify important risk factors, which can cause actual results to differ materially from those contained in our projections or forward-looking statements.

And please note that unless otherwise indicated, the financial metrics we provide you on this call are determined on a non-GAAP basis. These metrics, together with corresponding GAAP numbers and a reconciliation to GAAP, are contained in today's press release, which we posted on our website and filed with the SEC on Form 8-K. We will also discuss historical financial and other statistical information regarding our business in operation, and some of this information is included in the press release. The remainder of the information will be available on a recorded version of this call or on our website.

And now I'll turn the call over to our CEO, Patrick Harshman. Patrick?

Patrick J. Harshman ***Harmonic Inc. - President, CEO & Director***

Well, thanks, David, and welcome, everyone, to our fourth quarter call. Harmonic capped a strong 2021 with another quarter of excellent financial and strategic results. Revenue was a record $155.8 million, up 18.5% year-over-year. EPS was $0.16. Cash generation was strong. And book-to-bill was 1.7%, resulting in record backlog and deferred revenue of over $440 million. Full year revenue grew over 33% as both our Cable Access and Video segments continue to invest in the future and secure new strategic wins while also delivering positive operating income.

Fourth quarter Cable Access segment revenue grew 53% as the number of customers deploying CableOS grew 66% year-over-year. Our Video segment delivered strong year-over-year streaming revenue growth of 56.5% and adjusted EBITDA margin of 19.8%. These 2021 results and our 2022 outlook demonstrate that execution of the multiyear strategic and financial plans we shared with you in our June investor days remain firmly on track, despite continuing pandemic and supply chain headwinds.

We're entering 2022 with truly industry-leading technology, strong market momentum, new customers actively deploying our latest solutions, record backlog and deferred revenue and solid cash position, a great foundation for extending our solutions, market impact and growth.

So looking now more closely to our Cable Access segment. It was another very good quarter and a very strong year. By quarter end, 73 broadband service providers were deploying our CableOS, up 66% year-over-year. Broadband modem served grew to 4.8 million, up 82% year-over-year. Segment revenue was $69.7 million, up 53% from a year ago and adjusted EBITDA margin was 9.6%, despite ongoing supply chain headwinds which impacted both top line and gross margins.

In December, we announced Rogers' selection of Harmonic and CableOS to power the company's next-generation multi-gigabit broadband services. Rogers is a true market leader and this high-profile win further validates our technology leadership and significantly expands our market position in North America.

Looking ahead, we have a strong pipeline of demand from existing customers who are already deploying CableOS; newer customers, such as Rogers, who are still in the early stages of scaling up deployment; and customers that were still working to convert to our platform.

Existing cable customers seeking to secure supply well into 2022 drove the lion's share of our very strong fourth quarter bookings. However, newer customers and new software and service applications are a growing part of the demand story.

We're particularly encouraged by the progress we're seeing with the Fiber-to-the-Home application of our CableOS solution. Q4 was a strong quarter for new Fiber-to-the-Home wins, spanning existing cable customers, new cable customers and new rural telco customers who have no cable infrastructure. Supporting these wins, we also began shipping our new 60-gig remote switch during the quarter.

We continue to see Fiber-to-the-Home as a competitive multiplier within cable accounts where our integrated hybrid DOCSIS plus Fiber-to-the-Home solution is both powerful and unique. Validating this value proposition, we're making good progress qualifying our fiber-to-the-home solution with a couple of Tier 1 cable operators. We also see fiber-to-the-home as a means of significantly expanding our addressed market. Our recent noncable operator wins highlight the still developing market expansion opportunity and, of course, finally broadening our fiber-to-the-home go-to-market investments in 2022.

Overall, for 2022, we see a strong demand environment for both our software and, more than previously anticipated, for hardware DAA nodes and modules. And this is important because it demonstrates that our end-to-end solution leadership and market share continue to grow.

That said, we're also continuing to contend with supply chain challenges, which means that our current outlook for 2022 is supply constrained and burdened by exceptionally high costs. Despite these challenges, we remain confident in our ability to continue to deliver on our multiyear top line and income growth targets. Specifically, we continue to see greater than $2 billion of addressable market and a current path for us to leverage our cloud native and DAA technology to be #1 in cable broadband and will expand into attractive adjacent applications.

The technology, marketplace and financial progress achieved in 2021 and our strong sales pipeline of both cable and fiber-to-the-home opportunities demonstrate that we're on track to meet or exceed our broadband access growth objectives.

Turning now to our Video segment. Here, also, we delivered a solid quarter, capping a year of strong financial and strategic achievements. Fourth quarter segment revenue was $86.1 million, up 25% sequentially and flat year-over-year. Segment gross margin was 58.8%, up 260 basis points year-over-year. Full year Video segment revenues were 18.5% and full year adjusted EBITDA was 12.6% driven by both stronger-than-anticipated traditional broadcast application demand and excellent progress with our strategic push into streaming. Streaming revenue for the year, encompassing SaaS and perpetual license sales, was $48.5 million or 56.5% year-over-year.

As a reminder, in June last year, we laid out our multiyear video business strategic plan. Our video plan has 2 core elements: taking a leading position in the growing streaming infrastructure market and maximizing revenue and profit from a large, but slowly declining, video broadcast market. Our 2021 results highlight strong execution of both elements of this plan.

On the broadcast side of the business, higher-than-anticipated revenue demonstrates that the global broadcast market still has a lot of life left, and we're capable of profitably taking a growing share of this business. Although we don't expect the surge of broadcast appliance demand we saw in 2021 to fully repeat itself in 2022, we see good opportunity to continue to profitably leverage the broadcast market for several years to come as we continue to transform and grow our streaming SaaS business.

And on the streaming SaaS side of the business, our investments have translated into a growing number of new accounts and a sustainable growth trajectory. On our third quarter call, we highlighted new streaming SaaS design wins with several Tier 1 media companies. And during the fourth quarter, we saw a corresponding growing number of new services launched on our streaming platforms. By year-end, we were delivering over 2,500 live sporting events per month on our VOS360 SaaS. Associated with growing adoption and usage by Tier 1 customers, we're seeing growing volume associated with major U.S. and international sports leagues and high-profile events like the upcoming Olympic Games, big time content with big time quality of service and target advertising requirements that enable our solution to really scale and shine.

Looking ahead, we believe our ongoing streaming platform investments will continue to translate into growth with market-leading content owners and streaming service providers, particularly for high-value live sports. Consequently, we expect our streaming SaaS revenue to again grow over 50% in 2022. And we remain firmly on track to achieve over $100 million streaming revenue by 2024, of which we expect at least 2/3 to be SaaS, as we laid out for you in our June 2021 Investor Day.

In summary, for our Video segment, we delivered an exceptionally strong 2021, and we remain on track to attain the multiyear strategic transformation and financial performance targets we set for ourselves, creating an increasingly differentiated and valuable video streaming business.

So now over to you, Sanjay, for a closer look at the financial results and our outlook.

Sanjay Kalra ***Harmonic Inc. - Senior VP & CFO***

Thanks, Patrick. And thank you all for joining us today. Before I discuss our quarterly results and outlook, I'd like to remind everyone that the financial results I'll be referring to are provided on a non-GAAP basis. As David mentioned earlier, our Q4 press release and earnings presentation includes reconciliations of non-GAAP financial measures to GAAP that are discussed on this call. Both of these are available on our website.

For the fourth quarter of 2021, we delivered solid results near or above the top of our guidance ranges. These results demonstrate the strength of our businesses, which continues to perform well even with the challenges caused by the pandemic and supply chain landscape. As we enter the new year, we are incredibly proud of everything our teams accomplished in 2021. We have positioned our business for continued long-term success and are excited to build upon this foundation in 2022.

Before I run through our quarterly and annual financials in more detail, I'll briefly review some of the highlights on Slide 7. We reported record revenue of $155.8 million, along with solid gross margin and EPS. We also saw strong sustained business momentum with a record book-to-bill ratio, which contributed to record backlog and deferred revenue, positioning us well for 2022. For the full year 2021, total revenue was $507.1 million, up 33.9% compared to 2020. Annual revenue in our Cable Access segment was $218.6 million, up 60.4% year-over-year; and Video was $288.5 million, up 19% year-over-year.

Now let's review our fourth quarter financials in more detail. Turning to Slide 8. As I just mentioned, total company Q4 revenue was $155.8 million, up 23.4% sequentially and 18.5% year-over-year.

Looking first at our Cable Access business segment. Revenue for the quarter was $69.7 million, up 21% sequentially and 53.2%

year-over-year, reflecting both the continued ramp-up of existing customers and new customer wins. In our Video segment, we reported Q4 revenue of $86.1 million, up 25.3% sequentially and approximately flat year-over-year. This solid performance reflects continuing broadcast demand, robust revenue from 5G bandwidth reclamation projects and strong streaming SaaS revenue growth. During the fourth quarter, our total streaming revenues grew 56.5% and streaming SaaS revenues grew 133% year-over-year due to increasing usage from existing customers and activation of new customers. We ended Q4 '21 with 112 SaaS customers, 24.4% year-over-year growth.

In the quarter, we added 13 new SaaS customers and saw a churn of 2 small deployments. We had 2 customers representing greater than 10% of total revenue during the quarter. Comcast contributed 26% of total revenue and Intelsat contributed 15% of total revenue. As shown earlier, total company gross margins declined by 480 basis points to 50.5% in Q4 '21 compared to 55.3% in Q4 '20. This is due to Cable segment revenues becoming an increasing part of our overall revenue mix. For the full year 2021, Cable segment revenues grew over 60% compared to 2020.

Cable Access gross margin for Q4 '21 was consistent with our expectations at 40.3% compared to 42% in Q3 '21 and 53.7% in Q4 '20. Extraordinary supply chain costs related to the pandemic continued to depress margins in 2021 relative to prior year, with a sequential decline primarily reflecting a high supply chain costs in Q4.

Video segment gross margins was 58.8% in Q4 '21 compared to 61.9% in Q3 '21 and 56.2% in the year ago period. The sequential decrease was due to product mix, while the annual improvement reflects an improved software mix within our appliance category as that our expanding SaaS business.

Moving down the income statement on Slide 9. Q4 '21 operating expenses were $58 million compared to $54.9 million in Q3 '21 and $49.3 million in Q4 '20. The year-over-year increase is primarily due to increased research and development and sales and marketing activities to drive the growth of our Cable Access business.

Adjusted EBITDA for Q4 '21 was 15.3% of revenue at $23.8 million, comprised of $6.7 million from Cable Access and $17.1 million from Video. This compares to an adjusted EBITDA of 11.7% of revenue at $14.8 million in Q3 '21 and 20.1% of revenue at $26.4 million in Q4 '20. These all translated to Q4 EPS of $0.16 per share compared to $0.09 per share in Q3 '21 and $0.20 for Q4 '20.

We ended the quarter with a diluted weighted average share count of 110.5 million compared to 106.4 million in Q3 '21 and 100.3 million in Q4 '20. The sequential increase is primarily due to convertible debt dilution of 2.3 million shares and the dilutive effect of outstanding RSUs and options by 1.1 million shares, both resulting from an increase in our average stock price in the quarter and 0.7 million shares due to weighted effect of stock and ESPP shares issued to employees. The year-over-year increase reflects dilution of our convertible debt by 4.2 million shares and the dilutive effect of our outstanding RSUs and options by 1.1 million shares, both resulting from an increase in our average stock price during the quarter and 4.9 million shares due to the weighted effect of stock and ESPP shares issued to employees.

Q4 bookings were a record $267.3 million compared to $114.3 million in Q3 '21 and $206.4 million in Q4 '20. We are pleased to report another strong quarter of new bookings demonstrating continued robust demand for our innovative solutions and services.

Our book-to-bill ratio was a record 1.7 in Q4 '21, 0.9 in Q3 '21 and 1.6 in Q4 '20. The strong Q4 '21 book-to-bill ratio was primarily due to cable access bookings driven partly by accelerating CableOS deployments and partly by customers ordering ahead to secure supply well into 2022 due to increased lead times in this extraordinary supply chain landscape. The full year 2021 book-to-bill ratio is 1.0 for Video and 1.3 for Cable.

Turning to Slide 10. We'll now discuss our liquidity position and balance sheet. We ended Q4 with cash of $133.4 million compared to $128.4 million at the end of Q3 '21 and $98.6 million last year. The $5 million sequential increase is comprised of $7.4 million of cash generated from operations, primarily attributable to both Cable Access and Video segment operating profits, net of $2.4 million cash used in purchase of fixed assets.

Our days sales outstanding at the end of Q4 was 51 days compared to 54 days at the end of Q3 '21 and 45 days in Q4 2020, all reflecting very healthy collection metrics. Our days inventory on hand was 83 days at the end of Q4 compared to 78 days at the end of Q3 '21 and 54 days at the end of Q4 '20, reflecting increasing inventory at the end of the quarter as we prepare for heavy 2022 shipments. Where possible, we continue to stock up on the inventory at higher-than-normal levels in anticipation of continuing supply chain challenges.

At the end of Q4, total backlog and deferred revenue was a record $441 million, up 32.3% sequentially from $333.3 million at Q3 '21 and representing 51.8% growth year-over-year from $290.5 million at Q4 '20. This Q4 backlog and deferred revenue reflects continued growing demand from our large cable customers and increasing video streaming SaaS volume commitments. Note that historically, about 80% to 90% of our backlog and deferred revenue gets converted into revenue within a rolling 1-year period.

As mentioned on previous calls, not included in our backlog is additional contractually agreed CableOS business with 3 of our initial Tier 1 cable customers. At the end of Q4 '21, this incremental amount was approximately $104 million, down from $137 million last quarter. And approximately $33 million went through the purchase order process and, therefore, moved into bookings. Taking these CableOS contracts into account, we have total future contracted revenues of approximately $545 million, which continues to provide us with a very solid base for 2022 and beyond.

With a strong finish to 2021, I will now share highlights of our progress towards our long-term models for Cable Access and Video segments which we shared with you during our investor events in June of 2021.

Starting with Cable Access on Slide 11. We are making solid progress towards our 2024 revenue and profit goals. In 2021, top line growth was well in excess of our multiyear growth rate target. Our 2022 outlook further reflects continuing strong revenue growth despite of the current supply chain environment. This faster-than-anticipated growth is due in part to higher-than-expected DAA hardware market share and sales. Consequently, gross margins were lower in 2021 due to both extraordinary supply chain costs and product mix, although gross margin dollars remain roughly on track. We expect these trends to continue in 2022.

Having said that, when normalizing for these industry-wide issues, our hardware margins continue to improve with volume, and we remain confident in software growth rates we outlined last June. In fact, excluding supply chain costs, our gross margins in 2021 would have been approximately 46%, and we expect this to improve further in 2022. Hence, we expect adjusted EBITDA margins to improve in 2022 and remain in line with the progress anticipated to meet or exceed our 2024 goal.

As for the Video segment on Slide 12. 2021 was an outstanding year compared to 2020 and with respect to our 2024 goals. Both revenues and gross margins improved significantly, already approaching our 2024 targets. Broadcast revenue in 2021 was stronger than anticipated and strategically important streaming revenue growth remains on target to achieve our $100 million goal by 2024. Streaming revenue growth is substantially driven by SaaS growth, and 2021 SaaS revenues grew 66% over 2020.

Looking at adjusted EBITDA margins. While we anticipate a slight step-back in 2022 from an exceptional 2021, the overall picture is fully in line with the transformation trajectory plan to achieve our 2024 target.

Now with that big picture background, I also want to provide an update on our convertible debt. We have $153.2 million of outstanding convertible debt, of which $37.7 million will mature in December 2022 and $115.5 million will mature in September 2024. In 2021, in light of our expectations for healthy cash generation under our multiyear business model, we made an irrevocable election to redeem the principal amount of these notes in cash upon maturity, thereby eliminating dilution exposure of 6.6 million shares in 2022 and 13.3 million shares in 2024.

I'll now turn to our detailed non-GAAP guidance for 2022 beginning on Slide 13. I will first review guidance for full year for our Cable segment, followed by Video segment and then for the full company. To offer some further clarity, as I go through the guidance, I'm going to highlight anticipated effects of certain items included in our 2022 guidance versus 2021 with respect to operating expenses, changes in accounting treatment of SaaS R&D and income tax rate.

For the full year 2022, based on the progress to date, we expect Cable Access to achieve revenue in the range of $295 million to $307 million and gross margins in the range of 41% to 43.6% as we expect continued heavy DAA hardware demand and supply remediations; gross profit in the range of $121 million to $134 million; operating expenses to range from $92 million to $96 million; adjusted EBITDA to range from $34 million to $43 million.

For our full year 2022 Video segment results we expect revenue in the range of $275 million to $289 million; gross margins in the range of 56.5% to 58.3%; gross profit in the range of $155 million to $168 million; operating expenses in the range of $146 million to $150 million.

With a strong pipeline of streaming SaaS opportunities, we are increasing SaaS investments accordingly. Our operating expenses guidance reflects the impact of discontinuing the capitalization of certain SaaS R&D costs and needing to expense these going forward. This change was required because in the fourth quarter of 2021, certain SaaS R&D activities are also supporting some of our broadcast appliance products. We expect this to result in approximately $2 million higher R&D expenses in 2022 compared to 2021 and then higher SaaS gross margins thereafter; adjusted EBITDA to range from $15 million to $24 million.

For our total company for full year '22, we expect revenue in the range of $570 million to $596 million; gross margin in the range of 48.5% to 50.7%; gross profit to range from $276 million to $302 million; operating expenses to range from $238 million to $246 million. Our 2022 operating expenses expectations include approximately $4 million of additional expenses associated with higher-than-normal salary increases and additional planned travels to secure new customer wins. Adjusted EBITDA to range from $49 million to $67 million; EPS to range from $0.26 to $0.40 per share.

The net result of additional operating expenses I just mentioned, together with the change in SaaS R&D capitalization and tax rate change, which I will discuss momentarily, results in a $0.05 decrease to our full year EPS at the low end and a $0.06 decrease at the high end; and effective tax rate of 13%, which is an increase from 10% in 2021, this is primarily due to reduction of NOLs as we continue to be profitable; the weighted average diluted share count of approximately 112.6 million, reflecting the impact on share carried via our convertible debt and due to stock issuance to employees.

Finally, cash at the end of 2022 is expected to come in between $100 million to $110 million, which allows for healthy continued investment in working capital needed for growth. This cash range is net of approximately $38 million that we have committed to pay in cash for the redemption of convertible debt principal due in December 2022, which I mentioned earlier.

Now on Slide 14, I'll review our non-GAAP guidance for the first quarter of 2022. For our Cable Access segment in Q1, we expect revenue in the range of $70 million to $80 million; gross margin in the range of 36% to 38%; gross profit in the range from $25 million to $30 million; operating expenses in the range of $22 million to $23 million; adjusted EBITDA to range from $4 million to $8 million.

For our Video segment in Q1, we expect revenue in the range of $64 million to $69 million; gross margin in the range of 56% to 57%; gross profit in the range of $36 million to $39 million; operating expenses in the range of $37 million to $38 million; adjusted EBITDA to range from breakeven to a profit of $3 million.

For our total company for first quarter of 2022, we expect revenue in the range of $134 million to $149 million; gross margin in the range of 45.6% to 46.8%; gross profit in the range of $61 million to $69 million; operating expenses to range from $59 million to $61 million; adjusted EBITDA to range from $4 million to $11 million; EPS to range from $0.01 to $0.06; a weighted average diluted share count of approximately 111.7 million. At the end of Q1, cash is expected to range from $110 million to $120 million.

In summary, we made significant progress in 2021 to position ourselves for continued business momentum in 2022 and towards attaining our long-term targets. We are very proud of what we have already achieved, and our 2022 outlook remains consistent with long-term revenue and operating models we shared with you previously.

We appreciate your attention today. Thank you, everyone. And now I'll turn it back to Patrick for final remarks before we open up the call for questions.

Patrick J. Harshman ***Harmonic Inc. - President, CEO & Director***

Okay. Thanks very much, Sanjay, a lot there. Well, we'd like to conclude by summarizing our strategic priorities as we enter 2022. For our Cable Access business, our objectives remain, enabling volume deployments with our growing list of Tier 1 customers, winning and scaling with new global operators and expanding our addressed market through our unique converged software core for DOCSIS and Fiber-to-the-Home applications.

Our Video segment objectives continue to be accelerating the growth of our streaming SaaS customer base, extending the capabilities of our streaming SaaS to support the requirements of our growing list of top-tier customers and the most valuable content, especially for online sports, and capitalizing on the traditional broadcast business to profitably enable these transformations.

2021 was a year of strong, strategic and financial execution. In 2022, we aim to continue to leverage and extend our industry-leading solutions and create even greater value for our customers and for our shareholders.

And with that, I want to thank you all for your support and open up the call for questions.

QUESTIONS AND ANSWERS

Operator

(Operator Instructions) Our first question comes from Simon Leopold of Raymond James.

Simon Matthew Leopold ***Raymond James & Associates, Inc., Research Division - Research Analyst***

You're right, Patrick. There's a lot to digest here. So looking first at the gross margin trends in the Cable Access segment. You've given us a forecast for the first quarter and the full year. And I think this implies a lot of improvement as we get through the year. So I'm trying to get a better sense of where do you think we exit 2022 in terms of gross margin in Cable segment and what gets us to that higher level that's implied by the full year guidance. And I'm assuming you've got input costs probably not going down. To what degree are you able to raise prices? Or how much of this is about mix shifting more towards software from hardware? So if you could maybe paint a picture of the drivers and trajectory for Cable Access gross margin, and then I've got a follow-up.

Sanjay Kalra ***Harmonic Inc. - Senior VP & CFO***

Thanks, Simon. So there are a couple of things here. I think, first of all, I'll start with, yes, Q1, as you said, we guided a range in high 30s. But for full year, it's close to 43.6% at high end and range of 41% to 43%. So overall, for the full year, the margins are expected to be where we ended last year or with a slight improvement if we get closer to high end. That said, in Q1 itself, the margins are a little lower. And yes, they are expected to improve in the outer quarters compared to Q1. Q1 is mainly the mix and the supply chain carryover coming from last year. Because of it, the margins are more on the lower end, I would say. But as we progress during the year, we expect that to get back in the regular normal shape.

That said, overall, for the full year, as I pointed out, Simon, the margins have been impacted by supply chain. With our supply chain impact, in my prepared remarks, I mentioned we could be 47% instead of 42.6% we showed. So that's the situation for supply chain impact.

That said, in 2022, there are a couple of things happening. Even though you see the margins are in the similar range of last year, but our supply chain impacts are higher in 2022 versus 2021. Instead of 4%, it may go up to 6%, the supply chain impact. That said, these supply chain impacts are offset by price increases which we are working with our customers, at the same time, with the economies of scale which we are seeing because of the growth. So overall, the margin may be same, but there's a lot going on with these offsets.

Simon Matthew Leopold ***Raymond James & Associates, Inc., Research Division - Research Analyst***

And then just as a follow-up here, you've been giving us the metrics in terms of cable modems served, and it's kind of had a steady cadence. I don't think you gave us the number of passings. So I'm trying to get a better sense of what is the penetration rate for cable modems? And my sense is that it's not growing that quickly at this point. And I'm just wondering how to think about maybe longer-term trending of the number of modems that should be served given the potential that you can serve.

Patrick J. Harshman ***Harmonic Inc. - President, CEO & Director***

The number of passings is approximately in the neighborhood of [$60 million], Simon, you're right, as we reported now, serving 4.8 million. So we still are below 10% of the passings. I think that there's been a modest pickup. And from our perspective, that's good news. On one hand, we continue to add new customers. And there's a lot, including a couple of new Tier 1s who have not really gotten going in earnest. So while, I think, we're starting to hit a pretty good cadence with some of our larger customers, we continue to expand that passed market.

That being said, I do think that I would expect sometime during this year us to maybe probably cross more than 10% of the passings addressed. But I certainly wouldn't expect it to be 20% this year. It's one of the reasons why we're so confident in this business and our multiyear trajectory. We see the demand, just from the customers we've already won, being strong and driving very healthy growth for the next several years. And you layer on top of that the additional business we expect to win, we think we're going to have a very strong runway in this business for the foreseeable future.

Operator

Our next question comes from Steve Frankel of Colliers.

Steven Bruce Frankel ***Colliers Securities LLC, Research Division - Senior VP & Director of Research***

And then, again, to go back on the supply chain situation, maybe give us a little color on how it got incrementally worse from the last time we talked and your confidence that you can get your hands on the parts you need to meet the tremendous demand that's in front of you. Is this really going to be a cost issue and the equation around how much of that you can pass through? Or are there material risks to just getting your hands on material and being able to deliver nodes?

Patrick J. Harshman ***Harmonic Inc. - President, CEO & Director***

Well, there are risks, Steve, but we think we've taken a fairly balanced approach in the forecast that we've given today. As Sanjay mentioned, actually, and I think as I mentioned as well in my prepared remarks, the outlook we've given you today is supply limited. We see more demand than we can supply and more demand than is reflected in the guidance we've given today. So we definitely have taken a haircut on that, and the haircut we've taken is informed by our experience over the past year. So we're relatively confident, I'd say we're quite confident, that we can deliver what we've outlined here today based on our work to date. There is an upside opportunity, but it's premature to assume any of that. In fact, we're not and we wouldn't advise you to as well.

That being said, what we can supply is going to be a high cost for the full year. And as Sanjay was just saying a moment ago, when you compare year-over-year, in 2021, we were not struggling with certain price increases and certain challenges for the whole year. A number of things really kicked in, in the second half of the year. Now we're entering the beginning of '22 with those things in full force. And while that is somewhat mitigated by some pricing adjustments, et cetera, from a full year perspective, it's a bigger challenge.

So I don't want to suggest that the situation has materially deteriorated from the second half of last year. It has not. But we are in a situation where we're contending with it from day one. We think we've done a good job. We think we'll continue to do a good job. But the issues are with us and we don't, at this point, anticipate them subsiding before the end of the year. I'll pause there. That was also a mouthful. But tell me, does that address the questions you're asking?

Steven Bruce Frankel ***Colliers Securities LLC, Research Division - Senior VP & Director of Research***

Yes. I think that addressed my question. And then you made 2 other comments during your prepared remarks. One was it sounded like you might be able to quantify what that supply chain impact was to revenue. In Q4, you said there were some things that you probably couldn't deliver. And then my second question maybe is a little more color on those comments around, well, beefed up travel to go after some potential customer wins, maybe some color on what that means.

Patrick J. Harshman ***Harmonic Inc. - President, CEO & Director***

Well, okay. Look, Q4, I would say, a very modest impact in terms of unfulfilled demand in Q4. Sanjay, do you concur?

Sanjay Kalra ***Harmonic Inc. - Senior VP & CFO***

Yes.

Patrick J. Harshman ***Harmonic Inc. - President, CEO & Director***

So our comment really on being demand constrained, I mean that's all relative to the guidance we had and the plan we put in place for the second half of the year, Steve. The comment really is, as we look at 2022, we see a very strong demand environment. And frankly, we don't think we can keep up with all of that demand. We're working closely with our customers to basically do what they need. But we see demand being realized, orders being booked in 2022 where the delivery, at this point we assume, is going to spill over into 2023.

From a long-term perspective, we don't think we're losing that business. It's not going away. But it means that 2022 probably is not going to be quite as strong as it otherwise would be. That being said, it's a strong year-over-year from a growth perspective, as you can see from the guidance we've given. And so we're not at all, let's say, embarrassed about what we're able to do. We're doing a heck of a job. Let's say it's kind of hitting the job for the business that we see even stronger demand by virtue of the good success we're having with existing customers and the growing number of customers we're bringing into the fold.

And maybe on that, bringing customers into the fold, maybe the current short-term pandemic issues notwithstanding, our preliminary view right now is that, over the course of this year, the pandemic situation will recede somewhat and that there will be growing opportunities as well as a desire on the part of our customers for us to meet with them in person. We are getting those requests already from customers. And indeed, we think more in-person meetings may help us actually accelerate some of the market share gains that we've been able to ramp up over the last 18 months.

So it means our travel and entertainment budget is going to not get back to where it was pre-pandemic. But right now, our guidance anticipates a significant step-up relative to 2020 and 2021. But really, that's all in the service of continuing, if not accelerating, market share gains on both sides of the business, both the Cable Access as well as Video.

Steven Bruce Frankel ***Colliers Securities LLC, Research Division - Senior VP & Director of Research***

And would you characterize the CableOS pipeline as something that still has a material number of Tier 1s that you haven't conquered yet? Or were you into the next...

Patrick J. Harshman ***Harmonic Inc. - President, CEO & Director***

Look, our ambition and our belief is we are going to be #1. I think eventually, we're going to be, one way or another, in every Tier 1, Steve. It may not happen in '22, but it's going to happen, in my belief. And we are engaged, in one way or another, with virtually every Tier 1 out there. So in terms of the pipeline of 2022, I won't say that it's every Tier 1. But our 2022 pipeline is strong overall, and it certainly includes remaining Tier 1s as well as a growing list of, let's call them, Tier 2 and Tier 3 operators, both Cable as well as a growing number of Fiber-to-the-Home. And so that's something that's unchanged with this business. The sales pipeline continues to be strong. And that's one of the reasons why you see us continuing to invest in the go-to market.

Operator

Our next question comes from Tim Savageaux of Northland Capital Market.

Timothy Paul Savageaux ***Northland Capital Markets, Research Division - MD & Senior Research Analyst***

Congrats on both the strong quarter and, obviously, the bookings and backlog results. And my question is kind of in that direction, maybe following on, on your comments about customer acquisition. But I wonder if you could kind of give us your latest view of the competitive environment. I mean you've had a couple of your big competitors, in Analyst Days late last year, kind of maybe throw in the towel but, certainly, offer outlooks for growth in cable networking that are flat after seeing declines this year versus your substantial growth. I guess what did you take out of that? And how do you look at this competitive environment going forward as you kind of see this market leadership position? And I can follow up from there.

Patrick J. Harshman ***Harmonic Inc. - President, CEO & Director***

Well, look, we compete against some very good companies that have kind of long histories and a very strong installed base. And we give them a lot of respect, and take them seriously as competitors. That being said, as you know, Tim, for some time, we have continued to believe that we are way out in front on the next generation of technology. And well, some of the public comments that you mentioned were a surprise to some of the market. For us, they were more confirmation of what we think we're seeing day in and day out in the marketplace.

So we think we're ahead, and we think that our technology leadership position is not something that can be easily -- and I think that the experience over the last year or 2 has demonstrated that doing a completely new cloud-native, virtualized access platform is a monumental task that's not a quick R&D program. So we think we're way out in front. And that's why, frankly, hopefully, not with bravado, but why, in all sincerity, we believe that we can and we'll ultimately be #1 in this space. That won't happen overnight. There's a lot of installed competitor product out there, et cetera. But from a competitive perspective, we think our position, frankly, has never been stronger.

Timothy Paul Savageaux ***Northland Capital Markets, Research Division - MD & Senior Research Analyst***

And to follow up, I guess, maybe you could extend those comments to the PON side of the house as well or maybe you were including them. And going back to the bookings performance in the quarter, I think you mentioned a couple of drivers: both an acceleration in customer deployment activity and maybe some preordering and given the supply chain issues. I wonder if you can kind of parse among those 2 factors. And to what extent did you really see a meaningful step-up in deployment plans, both among your top customers or more broadly?

Patrick J. Harshman ***Harmonic Inc. - President, CEO & Director***

Okay. Well, let's start with the PON piece of that first. I think it's premature for us to compare our fiber-to-the-home solution with, let's say, the telecom specialists who are, let's say, selling to ATT and Verizon every day. Where we do think we are increasingly strong is in the hybrid converged solution for DOCSIS and PON. It's unique. And it really is a competitive multiplier within cable accounts, which are increasingly themselves going after rural opportunities, business services and the like. I think we all heard a lot of that on recent conference calls. So when it comes to fiber applications for cable operators, that in itself is a significant TAM expansion, and we think we really have something that's truly unique.

That being said, going beyond that, we think that our fiber solution is pretty slick. And as I mentioned in the prepared remarks, we've started to see some interesting wins with operators that have no cable infrastructure at all. Now I think it's premature to declare victory there, but it's a pretty encouraging trend. It's something we're leaning into more and will continue to report on as we go forward.

Now in terms of the backlog and the fourth quarter bookings, both in particular Sanjay talked about, indeed, we saw 2 things. Number one, we've just got a bigger group of customers, and they're all at various places on kind of accelerating deployment curve. So I wouldn't say it's a market step-up by anybody. But all of our customers, existing and new, are not kind of on a flat deployment curve but, in fact, they're on a parabolic or accelerating deployment curve. So that's part of just what is feeding the overall growth of the business.

Now in addition to that, we are in a very difficult supply environment. And our customers are seeing that not only from us but from their other suppliers across product categories. And so a number of customers really are working to get out ahead of that. And so we saw, from several customers, orders that really look beyond Q1 look into Q2 and, in some cases, even into Q3. So it's a mix of those 2 things that drove the kind of extraordinary order input that we saw in the fourth quarter.

Operator

Our next question comes from Ryan Koontz of Needham.

Ryan Boyer Koontz ***Needham & Company, LLC, Research Division - MD***

And most of my questions have been answered, but any more color you can share on the supply chain costs here that are impacting Q1 in terms of the types of chips. Are there any logistics costs? And any more color would be helpful. That's the only question I had.

Patrick J. Harshman ***Harmonic Inc. - President, CEO & Director***

Well it's all of the above, to tell you the truth, Ryan. I think that components is the big thing -- component costs. But you're right, component availability kind of comes quickly after that. And late availability kind of drives continuing higher production costs, having to run certain lines late in the quarter around the clock, for example, and airfreight as opposed to lower cost transport. So it's all of the above that we're dealing with, but it's a component cost and component availability that is really the core of the problem.

Operator

Our next question comes from George Notter of Jefferies.

George Charles Notter ***Jefferies LLC, Research Division - MD & Equity Research Analyst***

I guess I wanted to ask about pricing increases. I think Patrick, earlier on the call, you mentioned that you guys are starting to mobilize on pricing increases. Could you just talk about how that works with customers both on the video appliance side and then also, I guess, on the hardware piece of the Cable Access business, the nodes business? How do you go into large customers like Comcast and negotiate higher pricing? And how much higher do you think you can get in terms of where pricing levels can go?

Patrick J. Harshman ***Harmonic Inc. - President, CEO & Director***

Well, thanks for the question, George. I just heard the ears of all my competitors perk up. Seriously, I can't and I shouldn't be too explicit about that. What I will say is, particularly the larger customers, I mean every one of them is unique in every regard. And so every discussion is unique. Every existing commercial agreement is unique. I think the good news is, on both sides of our business, I think we've increasingly established ourselves as not just a supplier but a partner. And these are discussions not just about selling but about working together to help our customers deliver on their plans. When you think about our cable customers, our objective isn't just to get a lower price. They're out there delivering a competitive broadband service that's going to compete with AT&T fiber or what have you. So we're having a collaborative discussion about what can be done to get the job done on time and most efficiently. And that conversation takes different forms just with different operators.

What I would say is that we're seeing a fair amount of success in that regard. But in some cases, agreements haven't kicked in yet or only kicking in now in Q1 or kicked in late in Q4. So I think, as Sanjay alluded to, we expect more benefits from that over the course of 2022. That's part of the answer to improving gross margins above and beyond what we're forecasting for Q1. But I also have to say it is a moving target. We don't think we're done seeing surprises. Our customers don't think we're done seeing surprises. So it's an ongoing cooperative conversation that I think is, in general, very much in a partnering mode.

George Charles Notter ***Jefferies LLC, Research Division - MD & Equity Research Analyst***

Got it. Okay. And then I guess the other one I had was really on CableOS. And I guess I'm trying to drill down a bit in terms of what growth rates and revenue contributions look like there. I ask because you've had a lot of success on cable modem adds. You've gone from, I think, 3.9 million to 4.8 million sequentially, and that's the biggest jump we've seen in, I think, forever in the CableOS business.

And then, at the same time, the SaaS and service segment isn't growing that much on a year-on-year basis or on a sequential basis. So I guess I'm kind of wondering, are there moving parts in here that I'm missing in terms of what's going on with the Cable Access business and then that SaaS and service revenue line? I guess I'm inferring perhaps that maybe more of the business is coming from Comcast where you have more kind of all-you-can-eat type of pricing structure rather than other customers. Is that the right read? Or am I on the wrong path here?

Patrick J. Harshman ***Harmonic Inc. - President, CEO & Director***

Not quite, I guess. I mean I appreciate the question. We appreciate the question. And we agree that it's not completely transparent. In fact, our SaaS and service revenue today is actually dominated by the video side of our business. As you may know, we have billions of dollars of video appliances out there in the market. And so a heavy part of that video broadcast business is actually legacy support agreements associated with all that deployed product.

And part of what you're seeing in terms of the weakness of the services and SaaS piece of things is a decline associated with the decline of our broadcast appliance business being offset by the video SaaS growth. Because CableOS is still relatively new, in fact, as a percentage of revenue, support revenue on CableOS is still relatively more modest. So I guess that's one top-level comment as you look at those different categories. We're not breaking out, correct me if I'm wrong, Sanjay, software and services by cable versus video.

Sanjay Kalra ***Harmonic Inc. - Senior VP & CFO***

You're right.

Patrick J. Harshman ***Harmonic Inc. - President, CEO & Director***

But just because you asked the question or for clarity, George, it's where SaaS and support is today. That being said, as we have discussed, George, within Cable, in general, software licenses kind of should grow proportionate to hardware revenue in all accounts except for Comcast where we have a unique software license agreement. And we continue to see that happening. If you look at our strong cable growth, Sanjay, I think, mentioned in his comments, the software component is absolutely growing at the trajectory we envisioned. That being said, the hardware is growing probably even faster, a greater market share and, in some cases, greater segmentation of those networks.

So I think we should think about, Sanjay, going forward, maybe there is an additional way to provide a little bit more clarity to get after what George is looking for. So I think we'll take that on, George. But in the short term, please know that the software piece of our cable business continues to look very much in good shape, very much aligned with our projections and, fortunately, not impacted by the supply chain and cost challenges that are pulling down the hardware piece of that business.

Sanjay Kalra ***Harmonic Inc. - Senior VP & CFO***

I'll just add to that, that the SaaS growth, which primarily is for SaaS streaming, we have seen a very significant growth in the most recent quarters, 133% up from Q4 year-over-year. And if you look at for the full year, the streaming SaaS is up 60%. So I agree, Patrick, as you said, SaaS and service mainly for the Video but for Cable, it's the support, which is more linked to the hardware growth. So maybe we have to see going forward how we dissect between the 2 to clarify George's question. But overall, we are on target for SaaS and support for video as well as our software growth relative to our long-term targets.

Operator

I'm showing no further questions at this time. I will turn the call back over to Patrick Harshman for any closing remarks.

Patrick J. Harshman ***Harmonic Inc. - President, CEO & Director***

Okay. Well, good. We're just about at the top of the hour. We appreciate your time today. And more generally, we appreciate all your support or your business. We had a fantastic 2021. Thanks again for your support throughout the year. We're looking forward to an equally exciting 2022. We're excited about the opportunities, and we have the momentum that we have. And we look forward to keeping you all updated as we progress through the year. Thank you very much, everyone and good day.

Sanjay Kalra ***Harmonic Inc. - Senior VP & CFO***

Good. Thank you all.

Operator

Thank you. Ladies and gentlemen, this does conclude today's conference. Thank you all for participating. You may now disconnect. Have a great day.