

Q4 2022 MPS Earnings Webinar

Monolithic Power Systems, Inc. (NASDAQ:[MPWR](#))

Q4 2022 Earnings Call Transcript

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Company Participants:

Genevieve Cunningham - *Marketing Communications Manager*

Michael Hsing - *Founder, Chairman, President & Chief Executive Officer*

Bernie Blegen – *Vice President & Chief Financial Officer*

Analysts:

Quinn Bolton - *Needham & Company, LLC*

Chris Caso – *Credit Suisse*

Gary Mobley – *Wells Fargo*

Matt Ramsay - *Cowen*

Rick Schafer – *Oppenheimer & Co, Inc.*

Ross Seymore - *Deutsche Bank AG*

William Stein - *Truist Securities, Inc.*

Tore Svanberg - *Stifel, Nicolaus & Company, Incorporated*

Alex Vecchi - *William Blair*

Genevieve Cunningham

Welcome, everyone, to the MPS fourth quarter 2022 earnings webinar. My name is Genevieve Cunningham, and I will be the moderator for this webinar. Joining me today are Michael Hsing, CEO and founder of MPS, and Bernie Blegen, VP and CFO. In the course of today's conference call, we will make forward-looking statements and projections that involve risk and uncertainty, which could cause results to differ materially from management's current views and expectations.

Please refer to the Safe Harbor statement contained in the earnings release published today. Risks, uncertainties, and other factors that could cause actual results to differ are identified in the Safe Harbor statements contained in the Q4 2022 earnings release and in our latest 10-K and 10-Q filings that can be found on our website. MPS assumes no obligation to update the information provided on today's call. We will be discussing gross margin, operating expense, R&D and SG&A expense, operating income, other income, income before income taxes, net income, and earnings on both a GAAP and a non-GAAP basis. These non-GAAP financial measures are not prepared in accordance with GAAP and should not be considered as a substitute for or superior to measures of financial performance prepared in accordance with GAAP.

A table that outlines the reconciliation between the non-GAAP financial measures to GAAP financial measures is included in our Q4 and full-year 2022 earnings release, which we have filed with the SEC and is currently available on our website.

I'd also like to remind you that today's conference call is being webcast live over the internet and will be available for replay on our website for one year, along with the earnings release filed with the SEC earlier today. Now, I'd like to turn the call over to Bernie Blegen.

Bernie Blegen

Thanks, Gen. For the full year 2022, MPS achieved record revenue of \$1.79 billion, growing 48.5% from the prior year. This is despite industry-wide supply chain capacity constraints. This performance represented consistent execution against our strategies and having more tier one customers recognize MPS for advanced technologies, product quality, and excellent customer support. Here are a few highlights from 2022.

We introduced a new product line of isolated power modules for applications exceeding 1 kilowatt with a fully integrated controller, isolator, and power devices. Our initial revenue ramp for this highly integrated and reliable solution is targeted for 2024. These modules are critical building blocks for power management applications for data centers, EVs, plug-in traction inverters, EV chargers, solar power, wind turbines, battery power storage, and other industrial applications. Our products are designed to set the industry standard for these critical system-level applications.

MPS's first advanced data converter products for high-precision industrial and medical applications were made commercially available during 2022, and we expect to have an initial revenue ramp in 2023.

We continued to diversify our global footprint with expansion of our R&D centers, supply chain partnerships, and facilities outside of China to better match our resource distribution with our customers' geographic demand profile. With our global presence, we believe MPS is in a strong position to support our customers worldwide.

Turning to our full-year 2022 revenue by market segment compared with 2021, enterprise data revenue was up 116.1%, storage and computing revenue up 76.8%, communication revenue up 53.2%, automotive revenue up 46.8%, industrial revenue up 18.6%, and consumer revenue up 13.2%, demonstrating broad-based full-year 2022 revenue improvements.

Full-year 2022 enterprise data revenue grew \$135.1 million over the prior year to \$251.4 million. This 116.1% increase is primarily due to higher sales of our power management solutions for cloud-based CPU and GPU server applications. Enterprise data revenue represented 14.0% of MPS' total revenue in 2022, compared with 9.6% in 2021.

Storage and computing revenue for 2022 grew \$196.7 million over the prior year to \$452.6 million. This 76.8% increase primarily resulted from strong sales growth for storage applications and enterprise notebooks. Storage and computing revenue represented 25.3% of MPS' total revenue in 2022, compared with 21.2% in 2021.

Communications revenue grew \$87.4 million to \$251.5 million. This 53.2% improvement reflected higher sales of products for both 5G and satellite communications infrastructure applications. Communications revenue represented 14.0% of our 2022 revenue, compared with 13.6% in 2021.

Automotive revenue grew \$95.7 million to \$300.0 million in 2022. This 46.8% year-over-year gain primarily represented increased sales of our highly integrated applications supporting automated driver assistance systems, the digital cockpit, and connectivity. Automotive revenue represented 16.7% of MPS' full-year 2022 revenue, compared with 16.9% in 2021.

Industrial revenue grew \$34.4 million to \$219.2 million in 2022. This 18.6% year-over-year increase primarily reflected higher sales in applications for smart meters and industrial automation. Industrial revenue represented 12.2% of MPS' full-year 2022 revenue, compared with 15.3% in 2021.

Consumer revenue grew \$37.2 million to \$319.5 million in 2022. This 13.2% year-over-year increase primarily reflected increased product sales for home appliances and smart TVs. Consumer revenue represented 17.8% of MPS' full-year 2022 revenue, compared with 23.4% in 2021.

Let's talk about the general business conditions.

During our Q3 '22 earnings call, we highlighted that customers were becoming more concerned with near-term business conditions and order patterns might oscillate in the near future. As a result of this change in

ordering patterns, we indicated that our inventory levels would likely catch up to our target of 180 to 200 days and possibly be higher in the near term. During the quarter, ordering pattern stabilized as customer-requested push-outs slowed.

While this is positive, customers orders are still trending below historic norms, and our Q4 '22 inventory is above our target levels. As a result, we remain cautious about near-term business conditions. We also believe MPS can swiftly adapt to market changes as we have done so successfully during similar macroeconomic changes in the past.

Switching to Q4, MPS had a record fourth quarter with revenue of \$460.0 million, down 7.1% from revenue generated in the third quarter of 2022, but up 36.7% from the comparable quarter of 2021. On a year-over-year basis comparison by market segment, fourth quarter 2022 revenue for automotive grew 72.8%, enterprise data revenue increased 69.0%, storage and computing revenue grew 55.0%, communications revenue grew 40.1%, and industrial revenue grew 13.3%, while consumer revenue decreased 20.1%. Fourth quarter 2022 GAAP gross margin was 58.2%, down 50 basis points from third quarter 2022, but 60 basis points higher than the fourth quarter of 2021.

Our GAAP operating income was \$136.9 million, compared to \$151.9 million reported in the third quarter of 2022 and \$78.6 million reported in the fourth quarter of 2021.

Fourth quarter 2022 non-GAAP gross margin was 58.5%, 50 basis points below the third quarter of 2022, but 60 basis points higher than the fourth quarter of 2021. The year-over-year expansion in fourth quarter non-GAAP gross margin was largely due to a shift in sales mix favoring high-value greenfield products and operational efficiencies, which more than offset higher product input costs.

Our non-GAAP operating income was \$174.1 million, compared to \$193.7 million reported in the prior quarter and \$102.0 million reported in the fourth quarter of 2021.

Let's review our operating expenses. Our GAAP operating expenses were \$130.9 million in the fourth quarter compared with \$139.0 million in the third quarter of 2022 and \$115.3 million in the fourth quarter of 2021. Our non-GAAP fourth quarter 2022 operating expenses were \$94.8 million, down from the \$98.4 million we spent in the third quarter of 2022 and up from the \$83.0 million reported in the fourth quarter of 2021.

On both a GAAP and a non-GAAP basis, fourth quarter 2022 litigation expense was \$3.2 million, compared with a \$2.1 million in Q3 2022 and a \$420,000 credit balance in Q4 2021. The fourth quarter 2021 litigation credit reflected an IP settlement and refund of a legal retainer.

The differences between GAAP and non-GAAP operating expenses for the quarter as discussed here are primarily stock compensation expense and income or loss from an unfunded deferred compensation plan. Fourth quarter 2022 stock compensation expense, including \$1.0 million charge cost of goods sold, was

\$35.3 million, compared with \$43.0 million recorded in the third quarter of 2022. The quarter-over-quarter change in stock compensation expense reflected a change in plan vesting assumptions.

Switching to the bottom line, fourth quarter 2022 GAAP net income was \$119.1 million, or \$2.45 per fully diluted share, compared with \$2.57 per share in the third quarter of 2022 and \$1.51 per share in the fourth quarter of 2021. Q4 2022 non-GAAP net income was \$154.0 million, or \$3.17 per fully diluted share compared with \$3.53 per share in the third quarter of 2022 and \$2.12 per share in the fourth quarter of 2021. Fully-diluted shares outstanding at the end of Q4 2022 were 48.5 million.

Now let's look at the balance sheet

As of December 31, 2022, cash, cash equivalents, and investments totaled \$739.6 million, compared to \$738.1 million at the end of the third quarter of 2022. For the fourth quarter of 2022, MPS generated operating cash flow of about \$52.2 million, compared with Q3 2022 operating cash flow consumed of \$18.2 million. Fourth quarter 2022 capital spending totaled \$12.8 million.

Accounts receivable ended the fourth quarter of 2022 at \$182.7 million, or 36 days of sales outstanding, compared with the \$153.4 million, or 28 days of sales outstanding, reported at the end of the third quarter of 2022 and the \$104.8 million, or 28 days, reported at the end of the fourth quarter of 2021. Our internal inventories at the end of the fourth quarter of 2022 were \$447.3 million, up from \$397.4 million at the end of the third quarter of 2022.

Calculated on a basis consistent with our past practice-- and as you can see on the webinar video-- days of inventory rose to 212 days at the end of Q4 2022 from the 167 days at the end of the third quarter of 2022.

Historically, we've calculated the days of inventory on hand as a function of current-quarter revenue. We believe comparing current inventory levels with following quarter's revenue provides a better economic match. On this basis, again, you can see days of inventory increase to 214 days at the end of the fourth quarter of 2022 from 188 days at the end of the third quarter of 2022.

I would now like to turn to our Q1 2023 outlook

We are forecasting Q1 2023 revenue in the range of \$440 to \$460 million. We also expect the following-- GAAP gross margin in the range of 57.4% to 58.0%, non-GAAP gross margin in the range of 57.7% to 58.3%, total stock-based compensation expense of \$40.2 to \$42.2 million, including approximately \$1.2 million that would be charged cost of goods sold. GAAP R&D and SG&A expenses, including litigation expenses between \$135.1 and \$139.1 million.

Non-GAAP R&D and SG&A expenses will be in the range of \$96.1 to \$98.1 million. This estimate excludes stock compensation expense but includes litigation expense.

Beginning with the Q1 2023 outlook, MPS will no longer separately forecast litigation expenses. Interest income is expected to be in the range from \$1.8 to \$2.2 million before foreign exchange gains or losses and charitable contributions. The non-GAAP tax rate for Q1 2023 will be 12.5%.

The non-GAAP tax rate remains unchanged from 2022 as there have not been any material changes in tax regulations. Fully-diluted shares to be in the range of 48.2 to 49.2 million shares.

Finally, I'm pleased to announce a 33% increase in our quarterly dividend to \$1 per share from \$0.75 per share for stockholders of record as of March 31, 2023.

In conclusion, while we remain cautious about near-term business conditions, we believe MPS can swiftly adapt to market changes and take advantage of the current environment to focus on business development and investing in infrastructure necessary to support long-term growth. I will now open the webinar up for questions.

Genevieve Cunningham

Thank you, Bernie. Analysts, I would now like to begin our Q&A session. As a reminder, if you would like to ask a question, please click on the Participants icon on the Menu bar and then click the Raise Hand button. Our first question is from Quinn Bolton of Needham. Quinn, your line is now open.

Quinn Bolton

Hey, guys, congratulations on the strong results and the nice outlook in this environment. I guess I wanted to start, Bernie and Michael, the compute and storage business was much stronger than at least I expected in the fourth quarter. You grew revenue quarter-on-quarter when the rest of the PC market is clearly experiencing softness and inventory correction. So I guess can you give us your outlook? How do you see that business trending over the next couple of quarters? And then, I've got a follow-up. Thank you.

Bernie Blegen

Sure, I think that there's been a lot of press recently around weakness in notebooks as far as unit sales, and in addition, we've started to see some word in here about declines, also, in the memory market. Interestingly, memory continued to be very strong for us, offsetting a decline in notebooks. And as we look ahead here, we actually see notebooks beginning to improve in the early part of '23. And probably, those gains will offset a decline in memory.

So we're basically looking at this category, at least for the first half of the year, to be flattish.

Quinn Bolton

OK.

Michael Hsing

But the one component, the AI portions, still remain to be very strong in the near future, and that we see a very high growth.

Bernie Blegen

Absolutely. In the enterprise data, we've really got good traction with the GPUs for artificial intelligence. And so that should really be one of our growth drivers in the first half of 2023.

Quinn Bolton

That was going to be my next question. Enterprise data was down slightly in the fourth quarter, but it sounds like you see the ramp, or just stronger results, in the first half driven by, it sounds like specifically, GPUs? Is that right?

Michael Hsing

Yes, related to artificial intelligence.

Bernie Blegen

Yeah, when we look at CPUs in the enterprise data, *there's still initial softness as we're waiting for the platform launches for both the Sapphire Rapids and Genoa to take off.*

Quinn Bolton

Do you expect that in the second half, then? The CPU to kick in more second half of the year?

Bernie Blegen

Yes.

Quinn Bolton

Perfect, thank you.

Genevieve Cunningham

Our next question is from Tori Svanberg of Stifel. Tori, your line is now open.

Tore Svanberg

Yes, thank you, and congratulations on another record year. Michael, I was hoping you could talk a little bit more about the power isolation module business that you expect to ramp in 2024. Is this still based on the company's BCD technology, or are you now starting to venture into some newer technologies? I'm just curious because you haven't talked the whole lot about, potentially, getting into silicon carbide, or GaN, or anything like that.

Michael Hsing

Yes, so we do have programs that are going to a wide band gap materials. And in the past, I think we talked about it. And we have a program to make-- to investigating and develop those devices since 2017. And now, we see the first results. And we do have some samples ready, but not in the production yet. My prediction is that they're somewhere in the middle of the year, and/or second half of the year.

And related to your questions about the isolator modules, when any higher-power-- so [INAUDIBLE] inverters, solar inverters in the data centers, also chargers, on-board chargers, and all these-- and the wind turbines, all of these have one basic component in all these very high-power applications, which is all the power devices drive by using the isolated modules.

And MPS is using-- again, using our own BCD process, and as well as wide band gap materials. And we combine together, and then making a very simple nice and a very ease of use power modules for those type of applications. Some of these are products are already in production in EVs currently, and things that we expected a higher growth in the next couple of years.

Tore Svanberg

That's very, very helpful. And as my follow-up, could you just give us an update on the manufacturing footprint-- both from a capacity perspective, but more importantly about diversification? You talked about you're looking at all sorts of regions to partner with some new manufacturing partners. So yeah, both capacity, but then also from a geographical perspective, perhaps, an update? Thank you.

Michael Hsing

Yeah, we see it a bit as everybody else sees it in the geopolitical tensions. And as you know, MPS, in the past, we always want to be a local company in every political region. And we did that successfully in the R&D side, because for one thing, it's close to customers. Other ones, we isolated from these tensions further between the countries. And for the manufacturing side, currently, we can fulfill all our customers' demand to-- demand for wherever they want to manufacture.

And we want to, by end of the year-- by end of the year and next year, we will have a full [INAUDIBLE] for the new capacities, just in case the [INAUDIBLE] are really separated.

Tori Svanberg

Great, thank you so much, and congrats again.

Bernie Blegen

Thanks, Tori.

Genevieve Cunningham

Our next question is from Alex Vecchi of William Blair. Alex, your line is now open.

Michael Hsing

Oh, she's not there.

Genevieve Cunningham

Our next question is from Matt Ramsay of Cowen. Matt, your line is now open.

Matt Ramsay

Thank you very much. Good afternoon, guys. Can you hear me OK?

Michael Hsing

Yes.

Matt Ramsay

Hey. Hey, Michael. Hey, Bernie.

Michael Hsing

Hi.

Matt Ramsay

One question that I wanted to ask you that we've heard-- you guys have heard, I guess, addressed in your prepared script, how you're working to move the operations and the manufacturing footprint and other pieces outside of China to, in the long term, more sort of aligned with your TAM and revenue mix for the really, really long term in the company. And you've been very clear about those plans. But there's been some more, I guess, acute reports of, maybe, some customers that want to very quickly use product sources outside of China, and you'll probably know some of those reports that I'm talking about. I guess have those impacted your revenues at all?

Are you seeing any strange behaviors from customers that maybe want to move and source product outside of China more quickly than you're able to? Or are you already sourcing outside of China to support many of your global customers? Thanks.

Michael Hsing

Yeah, it's a misconception for MPS is we are a lot of manufacturers that's in China. That's true, but it's a misconception. So we do, in a [INAUDIBLE] we do-- most of we do at least half of manufacturing, and at least we have a capacity, is outside of the country, or outside of China. And to answer your question, it will have a zero impact in for whoever customers request to manufacture in the outside of China, in the past and the future.

Matt Ramsay

OK, all right. Thank you for that, Michael. That's really clear. It's just a question we get a lot.

I wanted to talk a little bit about the consumer business, which is maybe the least important strategic segment, but also the most volatile if you look at where, I guess, the numbers came in in the fourth quarter. And I guess what I'm wanting to understand a little bit is the philosophy that you guys might have if and when some of those consumer markets and the China market in general recover. Are you excited to keep that segment down around 10% of revenue and will continue to prioritize everything else? Or is that a business that you want to serve, Michael, as it potentially rebounds? Thank you.

Michael Hsing

Yeah, and again, as I said in the [INAUDIBLE] in the past, it's last year capacity issues, constrain the consumer growth. And we do have a lot of opportunity. We just didn't pick it up because the capacity issues. And in the downturns, and in the past, as you know that, OK? And it will be a lot more aggressive in these consumer market segments.

Because when you react to a price, and you react to the opportunity, and how fast you react to the opportunity, and within the six months, you will see the turn up. You'll see the bigger number change in the consumer segment. And that's what we will do.

Bernie Blegen

And Matt, keep in mind, that the resilience of our business model has to do with the diversity of the end markets, the customers, the geographies that we serve. So consumer, while it has dropped to around 10% for the quarter, remains a very important part of that strategy, and we'll continue to invest in it.

Matt Ramsay

Thank you very much, guys. Appreciate it.

Genevieve Cunningham

Our next question is from Alex Vecchi of William Blair. Alex, your line is now open.

Michael Hsing

Hello?

Genevieve Cunningham

Our next question is from Gary Mobley of Wells Fargo. Gary, your line is now open.

Gary Mobley

Hey, Michael. Hey, Bernie, as well, and thanks for taking my question for the first time as a coverage analyst. And I related to that, I apologize in advance if I ask an uninformed question here, but the inventory for you guys, that 212 days, that's internal inventory. I believe, however, your sales-- 83% of your sales, roughly, go through distribution. So maybe if you can give us a view in terms of distribution inventory, and did it increase? And if so, to what extent did it favor revenue?

Bernie Blegen

Gary, opening up, welcome to the party. This is Gary's first call with us.

Michael Hsing

And a welcome to the inventory question.

Bernie Blegen

The inventory question.

[LAUGHTER]

I thought we finished this question!

Michael Hsing

For Gary, it's OK.

Bernie Blegen

OK, Gary, it's OK. So, uh, when I look at the channel inventories from Q4 to Q1-- or, I'm sorry, from Q3 to Q4-- they basically stabilized. So, we didn't see a significant increase, either in terms of dollars or days in the quarter. Likewise, when we talk about inventory on our balance sheet-- and I'll address that as well-- you know, there's about a six-month lead time from when we can slow down wafer starts to when you see it on the balance sheet. So likewise, as we're looking out ahead to Q1, we see both inventory in terms of dollars on our balance sheet, as well as in the channel, stabilizing. Sell-through in the channel remains very good. And then, it should normalize in the second half of the year.

Gary Mobley

I apologize if I stepped in--

Michael Hsing

And it's a fair to say-- in 2019, we deliberately built a 200-days plus inventory because we did receive all these opportunities. And then, now, the inventory goes this high because it goes over 200 days again. And that is because the customers' demand start to pushing out. And this is on the high side. And we will-- OK, well, we'll cautiously in the reduce it. And it's not-- this is not the same as the 2019.

Gary Mobley

Got it, thank you for that. And I wanted to ask about contributors to the revenue growth for the fiscal year, for the quarter. 48 and 1/2% is quite commendable. I was hoping maybe you can deconstruct that between ASP increases and UD increases, and how you see that playing out for fiscal year '23 as well.

Michael Hsing

It's very diverse, the growth, and with a little more aggressive activities in the consumer segment. And this is different from 2022 or '21. And everything is the same, so because we are not-- it's not a one-trick

pony, OK? Not a two-trick pony either-- so [INAUDIBLE] we have a multiple product. We have a products like a 5,000, 6,000 different products. We have a few thousands of customers. Large customers and less than-- biggest customer is less than 4% in a different industry. And with our-- that's the same way as we do in the last 10, 12 years. And we still continue to pass.

Bernie Blegen

Clearly, as you look at a business driver in 2022, and as we look ahead, you can also see the impact of selling higher-value technologies and higher ASPs that go along with it. So while many companies use this supply-demand imbalance as an opportunity to raise prices to their customers, we only had one single-digit price increase back in February, and all of the other is representative of higher ASPs and volume gains.

Gary Mobley

Helpful. Thank you, guys.

Genevieve Cunningham

Our next question is from Ross Seymour of Deutsche Bank. Ross, your line is now open.

Ross Seymore

Hi, guys. Can you hear me?

Michael Hsing

Yes.

Bernie Blegen

Just fine.

Ross Seymore

Perfect. Well, first, I also want to welcome Gary to the call and thank him so much for being the one asking the inventory question.

[LAUGHTER]

Michael Hsing

I still remember that!

Ross Seymore

I knew you would. So I had just one question, one follow-up. The question on the near term, first, was you talked a little bit about stabilization in your orders but said they're still below normal. So any color on that? And then, folding another near-term follow on is the first quarter, you said it sounded like Storage and Computing would be flat and Enterprise Data would be up a bit. If you're flat overall, what's going down sequentially in the first quarter to get you to that? So that's kind of the aggregate first question.

Bernie Blegen

So when we look at Q1-- and, obviously, we've guided down about 2%, which is consistent with seasonal trends-- and it's the Industrial is likely to come down. And I may have left you with an incorrect impression because Enterprise Data is likely to go down even though GPU AI will improve. And then, on the plus side, the momentum in automotive continues to be very strong.

Ross Seymore

And the stabilization color-- geographically, by end market, order stuff you said?

Bernie Blegen

Yeah, we're seeing better activity. I think that we commented both in Q3 and repeated it here that customers have gotten a lot more near-term focused. And you can point to consumer, you can point to China as being areas that it was very observable. And right now, we're seeing a lot better activity, but it hasn't necessarily translated into what I'd call a normalized ordering pattern.

Ross Seymore

Got it, thanks for that. And I guess as my longer-term follow-up, a question I get a lot from investors is the really impressive growth you guys did in 2022, up about 50% round numbers. That's about 30% faster than the SIA-defined analog category. And that delta is kind of 2x what you guys historically have done. And some people are concerned that that's just because of insufficient supply and competition and assume fungibility, that you guys are just growing because other people can't, or some of your competitors had some product issues that they'll soon rectify, and so those tailwinds could turn into headwinds this year. I know you're not going to guide for the full year, but are you at all concerned about those two dynamics having overinflated 2022 and turning into headwinds this year?

Michael Hsing

Hey. OK, tell those customers-- tell those, not customers-- ok

Bernie Blegen

Investors.

Michael Hsing

Our investors, our customers, to buy our stocks.

[LAUGHTER]

And hey, we don't use in the pay-to-play or the me-too products. Everything is pretty much single-source product. And our products are a lot more programmable, a lot more versatile. So I mean, our customers can configure those products. And of course, we would take advantage of it in a shortage. Our customers can use our products in a multiple ways, and a lot of them are software-based. And now, as you know, in the software side in [INAUDIBLE] is a lot more stickier. And we will continue to use our technical strengths to gain market share. And headwinds, OK, for those people that don't believe that and feel we have a headwind, OK, that's fair, but let our numbers deliver it. Let our past numbers to show that.

Ross Seymore

Thanks, guys.

Genevieve Cunningham

Our next question is from Rick Schafer of Oppenheimer. Rick, your line is now open.

Rick Schafer

Yeah, thanks. And I'll add my congratulations, guys. If I could ask my first question, it's kind of a broad question on your module, just your overall module strategy. I mean, say it doubles this year to 10% or so of revenues. Bernie, I'm sure you'll correct me if I'm off base there, but what's the right contribution long-term? I mean, Michael, I mean, eventually, do you want everything to move in that direction, toward module? Or is it weighted more to specific end markets? You named a couple of them already. And I'm curious if you can comment on the margin implications as module becomes a bigger contributor. I think in the past, you've said this is a 5x-type ASP multiplier, but again, please correct me.

Bernie Blegen

Yeah. So I'll give you the numbers correction, and Michael will give you the strategic answer. Modules currently are about 5% of our business.

Michael Hsing

Yeah, and it has doubled.

Bernie Blegen

Yeah.

Michael Hsing

It has doubled a year, year by-- year-over-year for last two years.

Bernie Blegen

Yeah.

Michael Hsing

Three years or two years?

Bernie Blegen

Yeah, three.

Michael Hsing

Three years.

Bernie Blegen

Yeah.

Michael Hsing

Yeah. And so it's a significant business now. And eventually, yes that's what I want to see it. And MPS are all going to move into a new type of modules. And modules, power module has a bad connotation. I know that, OK. And a lot of the companies in the power module business, those are in the 30% gross margins. And I don't know what's the right word to use. It is a power module. A plug-and-play, and OK, with the-- but it's not your old grandpa's power modules. And again, this is very different. Our margin is above corporate average-- in some of the solutions, much, much higher. But in the-- we sell well over 100 dollar stuff. And that's kind of I see as a part of-- it's hardware plus service. And the customers, the users, they don't need to know how to use the product or how to-- you have to have a very deep knowledge how to design a power supply. OK. And they should use very simple solutions like what we provide. They don't need the headaches to design a power supply. I think that we're going to end it up, with MPS or without MPS, it will be that, OK. But MPS want to be a leader in that.

Bernie Blegen

And I'd like to go back to Rick's earlier question. I would say that back in the day, the single biggest ingredient as far as making the decision for design win had to do with lowest cost. And I think that what our customers are seeing, particularly in the last three years, is there are other value drivers to consider as far as time to market, how much design resource they want to be saved from having to do it, and total cost of ownership. And those are areas that we're able to meet our customers' demand as well, if not better than, any other analog or power provider.

Michael Hsing

I might as well give you examples. We build our own test equipment, semi equipment and test equipment, and they're all based on MPS power modules. And if you buy those kind of power modules, we can sell these well over \$50, and so in semi equipment market segments, that's a perfect [INAUDIBLE] for that. And these are very high ASP, and very much, much, much compact than the current, than on the current market.

Rick Schafer

So thanks for that color. And it actually leads me to my next question. You know, I appreciate all the color that-- and you guys certainly discussed with the power isolation module. But just specific to the silicon carbide update, just, you know, it sounds like you'll be sampling this year. Should we expect any material contribution from silicon carbide this year, or are we looking at 2024? And Michael. I mean, we've heard different numbers, but what is the addition of silicon carbide module for traction inverter, et cetera? What does that do to your potential content per vehicle?

Michael Hsing

Our traction inverters, and using a silicon carbide, it's not this year, and maybe it's not even if we will see it next year. Our silicon carbide devices, we design our own. We develop our own. And we want-- we'll pick up some market segment that proves our products are reliable, first. And that's the first step.

To answer your questions, and this year, OK, we-- and there's no large number building in our revenue stream, yet. And so we don't expect that, but that's just to prove the technologies now.

Rick Schafer

Thanks, Michael. Thanks, Bernie.

Genevieve Cunningham

Our next question is from William Stein of Truist. William, your line is now open.

William Stein

Great, thanks for taking my question. And someone beat me to the module question this time, so--
[LAUGHTER]

--I'll focus in a little bit different direction. In the past, I know a few quarters ago, you talked about a team that you hired to work in the converter area, which is something you're not really that known for. But I think this is also another big, you know, ASP and a big growth opportunity for Monolithic. Can you talk about your traction inverters so far and what you expect to come in the coming quarters?

Michael Hsing

Yes, we can-- glad you asked that question. So OK, a couple of days ago, I saw an image, and we received from our customers. And we used that, used-- our customers use our image for the X-ray machines. And much better than the one prior, their prior versions. And so when is we sample the other biotech companies and their product is designed in, and we'll see the revenues, probably, the small revenue this year, and then in the next years. This is a slow-ramping product that gets very high barriers. And the bottom line is, we have the technologies and we have a know-how to design a very high-performance data converter. These are comparable, if not better. And we will broaden the product portfolios as we expand our teams. And these are-- takes a lot of efforts and a lot of investment. And so far, we built up a pretty good, sizable teams. And now, you will have-- see more general product coming out in the next couple of quarters.

William Stein

Thank you, Michael, I appreciate that. Maybe one other if I can. Something we haven't heard the company speak a whole lot about lately, and that's the e-commerce effort. Any update on how your traction is progressing there?

Michael Hsing

E-commerce? Well, OK, I can-- maybe not as fast as I want to be. [LAUGHS] And I set my expectation too high. And OK, I think-- but here is that we launched MPS Now, and-- well, actually, I take that back. And I think it's true, it's not as I expected more, OK, but there's a lot of resistance. And I mean, but our modules, a lot of modules ramp up. It's from e-commerce. And we, now, after-- like last year, yeah, after the maybe 13 or 14, or 14 or 15 months ago, we launched a MPS NOW in the remote technical support. And that helped a lot, and especially our module site. It helped-- our customers can schedule a meeting online, and we can solve their-- when they log in, we can solve-- we solve their technical issues. That

helps a lot. And I think the most part of the ramp up is from the MPS Now, so from a website. But overall, like all the things, it will take time. And you are talking about engineers change their behavior-- and OK, how do you design the product, and how are you purchasing the product? And I think the next 10, 12 years-- even not even, next 5 to 10 years for the millennials to design a power supply, they want to do Google search rather than do the fundamental design-- and again, in like in the past 20 years ago, like last 20 years. And so these are the products is designed for that-- like for easy plug and play use, and easy to use, and you can buy from the internet.

William Stein

Great, thank you.

Genevieve Cunningham

Our next question is from Chris Caso of Credit Suisse. Chris, your line is now open.

Chris Caso

Yes, thank you. Good afternoon, everyone. The question is about where lead times are right now and the degree of product shortages. With your inventory up now, has that helped to bring down lead times and alleviate some of the shortages? And if so, has that taken away perhaps some of the incentive for customers to place your orders for product they don't need? It's, obviously, one of the things we worry about as we go through the cycle. Interested in your view on that.

Bernie Blegen

I agree that lead times have been coming down. They were up as long, combined, as much as 26 weeks or six months. And they're coming down more slowly than you'd think. So I don't know. Obviously, our customers have changed their ordering behavior. And if that can be attributed to the change in lead times, or the fact that they have adequate inventory, or that they're uncertain about what the next six months, I can't really say which is the driver in their decision.

Chris Caso

Got it, OK. As a follow-up, Michael, you mentioned in some earlier remarks, you know, plans to be a little more aggressive on consumer business as you go through the year. So I wonder if you could expand on those comments. Is that something just opportunistic this year, or something that you see in the market? Or is that just a function of the diversity of your business model, where some other business is slow, so you can go find business elsewhere? If you could give us some more color on that, please?

Michael Hsing

I think you made a very good comment, a very good comment, is it an opportunistic. Remember how many years ago we-- years ago, let's say that, and we have a more than 50% of MPS revenues, and it was all from consumers. And these are fast design cycles and fast revenues. And you can cycle product in opportunities. And when you have the right product, the right support, and the right price, and you can move the needle quickly. And, obviously, contrary to all the other industrial, automotives, cloud computings-- and, again, these are much longer design cycles, and they are slowing down one segment

to the other all relative. And it's not as-- clearly, it's not as in the last couple of years. And the consumer is our opportunity, OK? And we know how to do it. And we have the product. And we have the price structures. And again, not as high as all the other segments. And we will do that.

Chris Caso

If I could just follow on that, does that imply, when business improves elsewhere, we've got better macro and such? Some of the product cycles elsewhere with, maybe, higher margin opportunities develop that you sort of back away from some of that and come back to some of the other segments that have driven growth more recently?

Michael Hsing

No, no, it's not. And consumer diversity is always our strategies. And in the last couple of years, we didn't grow because of capacity constraints. And we sacrifice on the consumer side.

Chris Caso

Got it, thank you.

Michael Hsing

OK.

Bernie Blegen

Thanks, Chris.

Genevieve Cunningham

Our next question is from Tori Svanberg of Stifel. Tori, your line is now open.

Tore Svanberg

Yes, thank you. I just wanted to come back to the data converter business. So you're, obviously, getting into the kitchen of two 400-pounds gorillas here. And I think historically, it's been very difficult to crack into this market. You talked about the high barriers to entry. And other than the product being high-precision-- I get that-- but is there anything else about your business model that will allow MPS to be successful in this market?

Michael Hsing

I think it's a-- we don't know it is a business model. I think, I know this takes time, and the market is large. A few competitors-- obviously, as you said, these are 800-pounds gorillas. OK, we are little hyenas going around.

[LAUGHTER]

And we have to run fast. And it's just to take opportunities and, OK, we presented a product. And the customers-- and they do have eyes on the different suppliers, OK? And especially come from the last couple of years. And we have a good hope, but we know this will take a while.

Tore Svanberg

That's fair. And just lastly, could you give us an update on the timeline for the \$3 and the \$4 billion capacity that you're working on?

Michael Hsing

Yeah, and so we said in the next couple of years, and the next two years, and we're still on it. And we're working with our suppliers. And I just mentioned the consumer business, OK? And one of the reasons is that we do have obligations to fill up these fabs. And we'll be aggressive in getting these to fill, getting these orders to fill the capacities. And you know that's our game in the past. We repeatedly do this, have done these kind of things in several cycles already. And this cycle is-- I don't see a difference from the last downturns. But so for the capacity expansions, we're still intact. And we may slow it down a little, but we really have obligations with our fabs, OK?

Tore Svanberg

Great. Thank you again.

Genevieve Cunningham

Our next question is from Quinn Bolton of Needham. Quinn, your line is now open.

Quinn Bolton

Great, thanks for letting me take a quick-- or ask a quick follow-up. Bernie, I just wanted to ask your thoughts on gross margin. You guided to 58 at the midpoint. Looks like the street consensus was probably 50 to 100 basis points higher than that through the years. So as you look at '23, do you think March is the bottom and margins can trend higher into the second half of the year? Or is this push and the ability to be opportunistic in the consumer segment likely to keep margins flattish in this 58% level through '23?

Bernie Blegen

Yeah, I'd probably look at it as being flattish for the remainder of '23. And when you look at what's taken the margin down-- and while you're right we're down 50 basis points, it's not a significant deflation from the rate that we've been at, trending at, over the last two years. And it's really because we have the additional manufacturing capacity, lower revenue, and, as we look at the next two quarters at least, the sales mix is not as desirable.

Quinn Bolton

Understood. Thank you.

Genevieve Cunningham

Our next question is from Ross Seymore of Deutsche Bank. Ross, your line is now open.

Ross Seymore

OK, just a quick cut follow-up on my side on the margin side as well, and this time on the OpEx side. You guys did a good job on the OpEx. I know you're putting litigation expense up into regular OpEx-- which, thank you for doing that. But just the trend in OpEx throughout the year last year grew maybe half the rate of what revenues did. How do we think about this year?

Bernie Blegen

I think as Michael has expressed here, between diversifying our supply chain and continuing to invest in R&D capabilities, that we have some very real opportunities for additional investment that would show up in growing our operating expenses. Having said that, though, there is a fair amount of uncertainty as far as what the revenue outlook is, and we want to be good financial managers as we go through these market conditions. So I would expect that it's likely that operating expenses won't grow much more than 50% to 60% of revenue growth in the current year.

Michael Hsing

Having said that, again, having said that, in the past two years, now we reach a \$2 billion company. And OK, one point-- OK, whatever-- OK.

Bernie Blegen

1.8.

Michael Hsing

Yeah, 1.8, and so OK, and our infrastructure hasn't really grown that much in the last couple of years. And it's difficult to hire people. So again, and now, we have a lot more breathing room. And this is the time to build up our company.

Ross Seymore

Great, and I guess for a quick follow-up, I just wanted to revisit one of the questions that was asked-- I think it was the very first question or close to the beginning-- on the storage and computing strength. I know you said notebook was better than you thought, and the memory slash storage was weaker. And those two kind of go the opposite direction in the first quarter, then. But those markets in aggregate have been weak across the board for quite some time. So I'm still a little surprised at the strength in the fourth quarter and the stability in the first. What would you attribute that to? Obviously, you're getting the orders, but are you guys taking share? Is it the tier one penetration? Is it content? Just any more color on that, because it's such a disconnect to the end market in general.

Michael Hsing

I think-- I believe we've gained some shares.

Bernie Blegen

Absolutely.

Michael Hsing

Yeah, yeah. We've gained some market shares.

Ross Seymore

Great, thank you.

Michael Hsing

Yeah, we're a little bit aggressive on that in some low end of the market.

Bernie Blegen

Yeah.

Ross Seymore

Thank you.

Genevieve Cunningham

If there are any follow-up questions, please click the Raise Hand button. As there are no further questions, I would now like to turn the webinar back over to Bernie.

Bernie Blegen

Great. Thank you very much for joining us for this conference call, and we'll be talking again here for the first quarter update, which will likely be in late April. So, thank you very much.