



## **HOYA CORPORATION**

Q3 Financial Results Briefing for the Fiscal Year Ending March 2022

February 1, 2022

## Event Summary

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[Company Name]	HOYA CORPORATION	
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[Event Name]	Q3 Financial Results Briefing for the Fiscal Year Ending March 2022	
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[Time]	15:00 – 15:48 (Total: 48 minutes, Presentation: 29 minutes, Q&A: 19 minutes)	
[Venue]	Webcast	
[Venue Size]		
[Participants]	300	
[Number of Speakers]	2	
	Ryo Hirooka	Representative Executive Officer & CFO
	Eiichiro Ikeda	Executive Officer & CTO
[Analyst Names]	Takahiro Mori	Mizuho Securities Co., Ltd.
	Yu Yoshida	CLSA Securities Japan Co., Ltd.
	Damian Thong	Macquarie Capital Securities (Japan) Limited
	Warren Lau	Aletheia Capital

# Presentation

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**Moderator:** Hello, English speakers. For the first time, we are providing an interpretation of the earnings call.

Since it is time, we'd like to start HOYA Corporation's FY2021 or March 2022 third-quarter earnings presentation. You can use the simultaneous interpretation service.

The participants from our corporation today are CTO, Mr. Eiichiro Ikeda, and Mr. Ryo Hirooka, CFO. CEO, Mr. Hiroshi Suzuki, is absent. As for the agenda for today, Mr. Ikeda and I myself will touch upon the succession of the CEO, and then Mr. Hirooka will explain the third-quarter results as well as the outline of the major businesses. We will take questions and answers, and we'll end at 3:45 PM. Those who are participating on the PCs, please look at the materials shown on the screen.

Then we'd like to talk about the CEO succession, which has already been announced on December 22. You may know about this, but let us explain once again.

## CEO Transition

On December 22, we announced the resignation of CEO Hiroshi Suzuki and the appointment of current CTO Eiichiro Ikeda as the next CEO. The key points of this announcement are as follows.

### Background of Resignation

- Mr. Suzuki has been CEO for more than 20 years and is now in his 60s, and he wanted to spend more time with his family.
- About a year ago, he approached the Nomination Committee and agreed to step down when the business stabilizes from the COVID impact.



### Succession Process

- The Nomination Committee, which has been discussing the Succession Plan for some time, began selecting specific candidates.
- The committee selected Mr. Ikeda, who has a proven track record and is well versed in technological development, which is the source of growth.



### Upcoming Schedule

- Mr. Suzuki to pass the CEO baton to Mr. Ikeda on March 1.
- Plan to explain new management direction at FY21 Q4 earnings announcement.

Mr. Hiroshi Suzuki had assumed the CEO position in the year 2000. For more than 20 years, he has been leading the growth of our company. But now he is in his 60s and he says that he wants to spend more time with his family. About one year ago, he approached the Nomination Committee and agreed to step down when the business stabilizes from the COVID impact. The Nomination Committee, which has been discussing the succession plan for some time, began selecting specific candidates.

Our company is a company with a Nomination Committee and other committees, which separates execution and supervision. This has been led by the Nomination Committee which is consisted entirely of external directors. . As a result of the discussion, Mr. Ikeda, who has a proven track record and is well versed in technological development, which is a source of growth, has been selected.

Mr. Ikeda will make a self-introduction regarding his background. Mr. Ikeda, the floor is yours.

**Ikeda:** As the next CEO, I have been appointed as the next CEO by the Nomination Committee. My name is Eiichiro Ikeda.

## Introduction of the Incoming CEO

A portrait of Eiichiro Ikeda, a man with glasses wearing a dark suit and tie, standing in front of a window with blinds.

Eiichiro Ikeda  
March 17, 1970  
Graduated from Chuo University, Bachelor of Science and Engineering

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Apr. 1992	Joined HOYA
Jan. 2010	General Manager of Media, Memory Disk (MD)
Feb. 2010	Co-CEO of Memory Disk (MD) & General Manager of Media
Sept 2010	Head of HOYA Optical Lens
June 2013	Executive Officer & Chief Operating Officer (COO), Information Technology
June 2015	Executive Officer & COO, Information Technology & Chief Technology Officer (CTO)
Mar. 2018	Executive Officer & COO, Information & Technology & CTO & President of HOYA Eye Care
Mar. 2020	Executive Officer, Group Chief Technology Officer (CTO)
Mar. 2022	Representative Executive Officer and Chief Executive Officer (CEO)

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This shows my career in HOYA. I joined the Company in April of 1992. And my background is as a chemical engineer. I first was in the Memory Disk division, not the Substrates, but the Magnetic Record Media division was where I worked as a process engineer.

Within the Media business, in 2010, I became the head of this division. And in 2010, September, I next became the Head of HOYA Optical Lens represented by GMO(Glass Molded Optics). Then, in 2013, I became the group COO and the CEO of Information Technology. And then, when I was engaged in Memory Disk, I became the head, but at that time, we sold the business to Western Digital and successfully completed the sale of the business.

After that, when I was in the Optical Lens business. The business was not profitable, however, after I assumed the position, I was able to turn around the profitability of the business.

You may know that since 2011, the IT profitability has shown great improvement, and I believe that I was able to contribute from the Optical business. When I became the CEO of IT, from around 2010, the IT business was positioned as a cash cow in its business.

And given that backdrop, until 2013, sales were not growing much, but we were more focused on profitability. After I assumed the position in 2013, I proceeded with selection and concentration, and focused on putting the limited resource to a growing business. As you know, after 2013, we showed a very good improvement in revenue, at the same time, profitability improved as being a cash cow for the Company. The driver at that time was the 3.5-inch hard disk substrate for nearline and mask blanks for EUV, which is driving the growth of HOYA today.

After that, as an executive officer, I had assumed dual responsibility. in 2018, for the first time, I became responsible for HOYA Eye Care (contact lens retail business) for two years, which was the first time I was engaged in the Life Care business. And PENTAX Medical or endoscope business development head was also one of my responsibilities.

Through these experiences, not only as an executive officer but also in the actual business, I was able to cover a wide portfolio of HOYA's business at the Gemba side as well. And right now, however, I am just a dedicated CTO and was selected as the next CEO.

That is my background. That is all for myself.

**Moderator:** Thank you very much. Next, Mr. Hirooka will talk about the third-quarter results.

**Hirooka:** I am Hirooka. Now I would like to talk about the results of the third-quarter earnings. First, the highlights of the results. There are four points.

## Key Takeaways

1. Achieved record-high revenue and operating profit.
2. Life Care sales continued to recover and exceeded pre-COVID levels, despite concerns around the resurgence caused by variants.
3. All products achieved double-digit growth in the Information Technology Business. 3.5" substrates for data centers maintained momentum.
4. We will launch a share buyback program (amount up to ¥60bn): the policy of returning excess cash to shareholders while prioritizing investment for growth remains unchanged.

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One is that we were able to achieve record-high revenue as well as operating profit. That was a record high on a quarterly basis.

Secondly, the Life Care business is above Q3 of two years ago pre-COVID. In the previous quarter, we explained that we were about to recover to pre-COVID levels. However, in Q3, we are now exceeding pre-COVID levels. So, that is the situation in our Life Care business.

Thirdly, we have been continuing this trend from the first half. The Information Technology business continues to contribute to the sales and profit of the Company. If you look at each business, all businesses have achieved double-digit growth, and third-quarter Substrates maintains momentum as well.

Lastly, we will launch a share buyback program. That has been resolved at the Board meeting, up to JPY60 billion.

# Financial Overview

(¥bn)	Q3 FY20	Q2 FY21	Q3 FY21	YoY	QoQ
Revenue	146.9	162.6	171.3	+17%	+5%
Pretax Profit	45.8	54.0	51.9	+13%	-4%
Net Profit	36.9	43.0	40.9	+11%	-5%
cf. Operating Profit	46.1	49.2	53.5	+16%	+9%
cf. Operating Profit Margin	31.4%	30.3%	31.3%	-0.1ppt	+1.0ppt

- On a constant currency basis, growth rate was +11% for revenue and +9% for PTP
- PTP declined QoQ due to FX loss of ¥1.9 bn in Q3 against FX gain of ¥3.0 bn in Q2.

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These are the figures for the overall company revenue, JPY171.3 billion. Compared to last year, that is plus 17%. On a currency-neutral basis, it is plus 11%.

Pretax profit is JPY51.9 billion. That is 13% YoY, and on a constant-currency basis, plus 9%.

Net profit, I would like to skip the net profit and go on to operating profit. This is a reference number. This is JPY53.5 billion, up 16% from last year.

In the far right, you see QoQ figures compared to Q2, or increase or decrease compared to the last quarter: revenue, plus 5%, and operating profit, plus 9% QoQ. This second quarter was a record high. But this time, we were able to exceed that, both in terms of revenue as well as operating profit.

As for pretax profit, that is minus 4%. It is below Q2. As you can see at the footnote, there was a ForEx gain of JPY3 billion in Q2. However, in Q3, ForEx loss is JPY1.9 billion. There was a net JPY4.9 billion loss quarter on quarter. So, although there was a record-high operating profit, pretax profit compared to Q2 is a slight negative.

## Life Care

(¥bn)	Q3 FY20	Q2 FY21	Q3 FY21	YoY	QoQ
Revenue	94.5	99.1	105.5	+12%	+6%
Pretax Profit	20.7	23.4	21.5	+4%	-8%
cf. Operating Profit	21.7	19.8	23.2	+7%	+17%
cf. Operating Profit Margin	23.0%	19.9%	22.0%	-1.0ppt	+2.1ppt

- On a constant currency basis, growth rate was +7% for revenue and +1% for PTP
- Compared to pre-Covid (FY19 Q3), revenue was +7% (excluding the impact of the reactionary decline in contact lenses following the tax hike)

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Next, I would like to compare each segment.

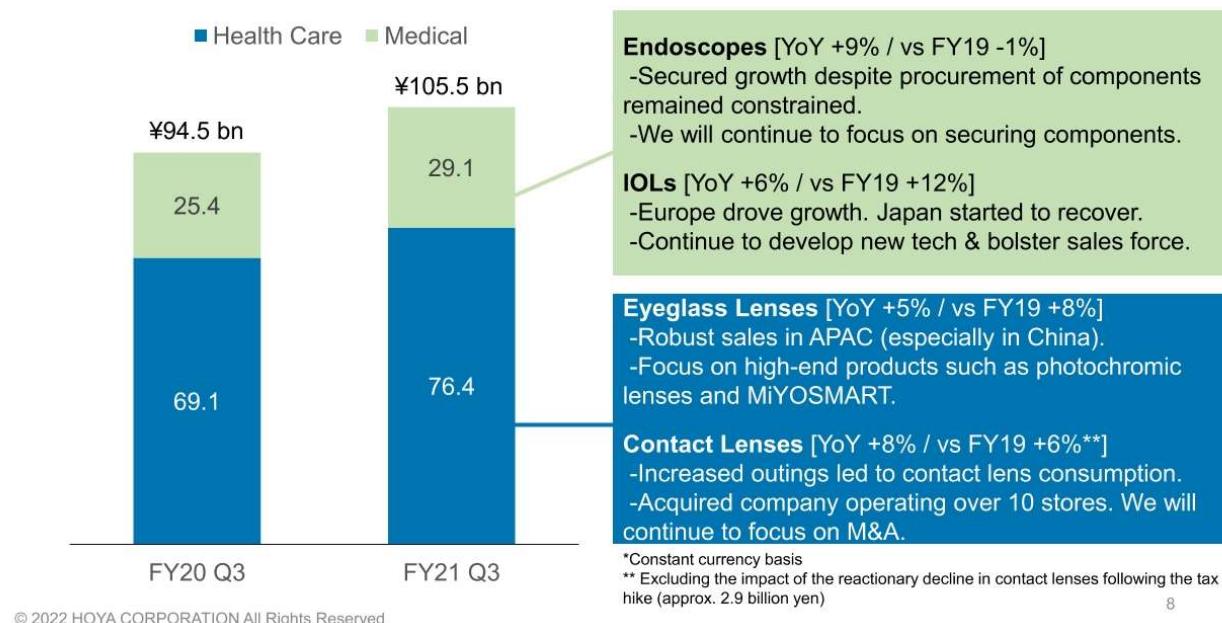
First, for Life Care segment, revenue was JPY105.5 billion. That is up 12% compared to the previous year. And the ForEx neutral, plus 7%. As for profit, profit is also increasing.

I talked earlier, revenue exceeded the pre-COVID number level, it's plus 7% compared to pre-COVID still.

In Q3 of 2019, for contact lens retail sales, there was a backlash from the increase in consumption tax for contact lenses and excluding that impact, the revenue growth would be plus 7%.



## Life Care: Revenue by Product



Next page, please. I would like to cover each product in the Life Care segment.

First, as for Medical, sales were at JPY29.1 billion; compared to last year, plus JPY3.7 billion. What you see here is, inclusive of currency, In the right, YoY of each business and comparison to 2019 are the currency-neutral basis.

First, as for endoscopes, compared to last year, it was plus 9% and compared to FY2019, it was minus 1%. In this segment, this is the only segment below 2019, but if you look at the market, it's very good. We have still been able to take orders. There are a lot of orders being received. As explained in the first half as well as written here, the semiconductor procurement used for processors is what we are struggling with. And because of that, we make and ship, and make and ship.

Based on the market as well as our orders, sales are brisk. However, shipment is limited because of the reason that I explained. In Q3, we are still in a recovery phase when it comes to revenues. However, in Q3, sales were growing as we were able to procure semiconductors more than we had expected. We would like to continue to—well, things are still uncertain. However, because we have been able to take orders, we would like to ship as we manufacture our products.

Next, IOL, intraocular lenses. We grew 6% compared to last year. We were able to exceed plus 12% compared to FY2019 Q3.

If you look at the market, Japan has started to recover. It is starting to recover, however, has not recovered back to the pre-COVID level. After the state of emergency has been released, well, there are more recoveries if you look at clinics. But hospitals are still careful. There is a moderate recovery, if you will, when it comes to surgery.

Intraocular lenses in the Japanese market is rather high, the Japanese share is rather high. However, in Europe this is growing and is contributing to the overall growth. All in all, this business has grown more than the FY2019 level.



Next, as for Health Care-related business, sales were JPY76.4 billion compared to last year. It was plus JPY7.3 billion. Eyeglass lenses grew plus 5%; compared to 2019, plus 8%. Again, on an actual basis, it has been above the pre-COVID level. MiYOSMART especially is gaining momentum. It is growing in China especially, and also in Europe. Well, although the COVID situation differs depending on countries, it is showing robust sales all in all. In Q3, the Japanese market has exceeded the previous year for the first time. And so, although there are still some uncertainties, Japan is also starting to see recovery.

Next, contact lenses. YoY, plus 8%; compared to 2019, plus 6%, and as I mentioned earlier, Q3 2019, there was a backlash from the consumption tax hike. If you take that impact away, it's plus 6%.

Sales are actually increasing more and again. This is on a recovery track after the state of emergency has been lifted, but the opportunities for people wearing contact lenses are starting to recover, which is also contributing to the recovery in sales. In this situation, it may still take a little more time for a full-fledged recovery. We would like to go for M&A and increase this year in real stores and we will not stick to size.

## Information Technology (IT)

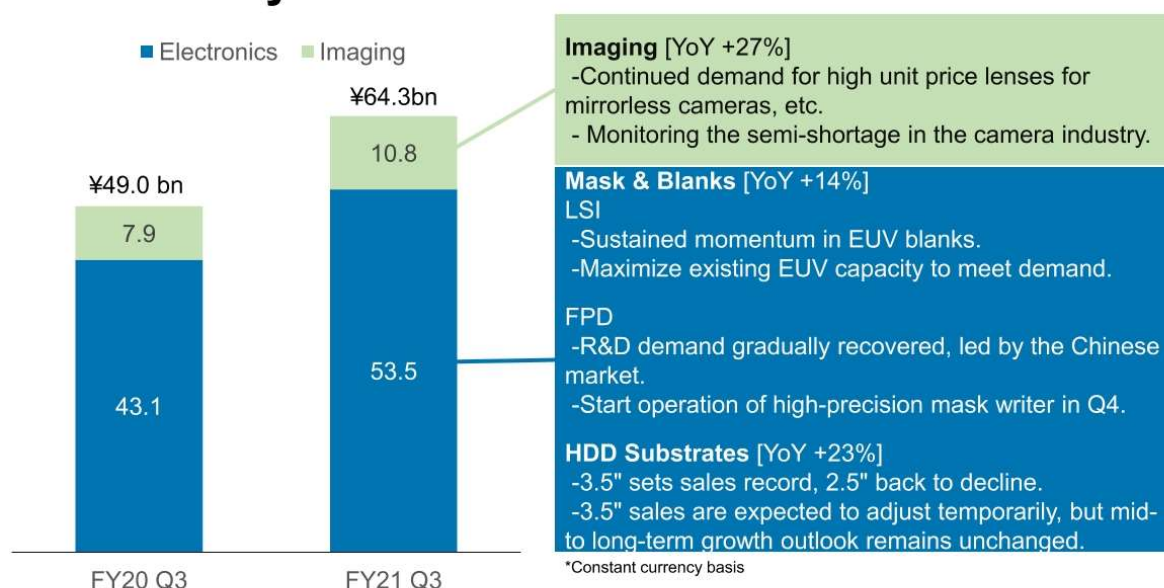
(¥bn)	Q3 FY20	Q2 FY21	Q3 FY21	YoY	QoQ
Revenue	51.1	62.0	64.3	+26%	+4%
Pretax Profit	23.9	31.0	31.3	+31%	+1%
cf. Operating Profit	25.1	30.1	31.1	+24%	+3%
cf. Operating Profit Margin	49.2%	48.6%	48.4%	-0.8ppt	-0.2ppt

- On a constant currency basis, growth rate was +19% for revenue and +25% for PTP

For Information Technology, IT, the overall revenue was JPY64.3 billion, a 26% increase YoY. On the constant-currency basis, the growth rate was 19% for revenue, and for profit as well, the operating profit was JPY31.1 billion, which is a 24% increase YoY.

Overall, the IT business remained robust and is growing compared to the previous year, and we also are growing QoQ, although slightly.

# IT: Revenue by Product



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This shows the breakdown by product.

First, for Imaging, JPY10.8 billion, which is a JPY2.8 billion increase YoY. On the constant-currency basis, this represents 27% growth YoY, which is a similar trend as the first half. We are seeing revenue growth from the camera demand and this demand is being maintained.

In 2020, there was huge impact from COVID and the camera market was shrinking. There was concern that the camera market would not recover, so we reviewed the cost structure for the entire organization. However, the demand recovery was higher than expected, so that is why the profit growth is even higher than the revenue growth.

However, there are seasonality impacts. Q3 is normally the peak and Q4 usually declines, so we need to be conscious of that. And also, how long the camera demand will continue needs to be closely monitored.

For the short term, there are semiconductor shortage concerns in the camera industry, so that is something that we have to watch for as well. Even though the revenue is growing, we cannot be too optimistic. We need to maintain our structure to remain profitable, even with the decline in revenue. We also need to look for opportunities outside of the camera business.

Next, for Electronics, JPY53.5 billion in revenue, which is JPY10.3 billion above previous year. In terms of Mask & Blanks, plus 14% YoY on a constant-currency basis. Both LSI and FPD grew double digits.

For FPD, last year's Q3 was not so good, so there is some kind of a rebound from that. It is not that the FPD can maintain a 10% growth every year, but we were able to achieve more than 10% growth for this quarter YoY. The Chinese market especially is driving the recovery and we are able to win orders from Chinese customers. For Q4, we are going to start the operation of the high-precision mask writer, so we will continue to win high value-added demand especially in China for FPD.

For LSI, EUV has sustained momentum, about 30% growth YoY and the customer demand is going to steadily increase going forward. Therefore, we need to maximize the existing EUV capacity to meet demand. That is

going to be our focus. Also from next year, we will also be ramping up our equipment, so we would need to cater to the customers' growing demand in EUV.

Lastly, for the HDD Substrates, YoY 23% growth and remains very strong YoY. The 3.5-inch sales grew by 50% YoY and also continue to grow QoQ, and set a new sales record. On the other hand, for the 2.5-inch, as we expected, it's now slightly declining. The first half, 2.5-inch was very strong and we did not see a drop YoY in the first half, which was a happy surprise for us.

For Q3 as well, it's not that we are seeing a sudden decline in 2.5-inch, but we are now seeing a declining trend which is within our expectations. The 3.5-inch sales is now significantly larger than 2.5-inch and so going forward, as the 2.5-inch declines, 3.5-inch will continue to grow and overall, and the HDD Substrates business will continue to grow in the mid to long term we believe.

## Highlights from the Balance Sheet & Cash Flow

### Cash

- FCF generated in Q3 was 40.8 bn yen (+7.5 bn yen YoY)
- Cash & cash equivalents increased to 416.0 bn yen (+98.0 bn yen YoY)

### CAPEX\*

- Q3 actual was 5.5 bn yen (-3.2 bn yen YoY)
- We expect around 30 bn yen this fiscal year\*\*

### D&A

- Q3 was 10.7 bn yen (+1.5 bn yen YoY); flat-ish QoQ
- We expect around 43.0 bn yen annual D&A\*\*\*

\* Cash flow basis. Acquisition of PPE

\*\* Decision basis. It may vary depending on the timing of cash-out. No change from the previous forecast.

\*\*\* No change from the previous forecast.

This shows the balance sheet and the cash flow.

I have stated the facts here. In terms of the cash flow, cash and cash equivalents increased to JPY416 billion. We do have 70% or more in foreign currency, so when the yen is weak, the cash balance increases, and that is why we have announced the buyback.

And maybe there'll be some questions in the Q&A, so I would like to talk about the cash allocation and our policy for the cash in advance.

On March 1, we will have a new CEO. However, in terms of the cash allocation policy, there is no change. We will prioritize investment into growth for both M&A and internal investment, and so we would like to hold onto a sizeable amount of cash for growth.

However, we will also be returning to the shareholders, and the new CEO will maintain the same policy in terms of cash management. Within a certain time frame, we'll continue to provide returns to the shareholders, and this has not changed at all.

# Guidance

Q4 Guidance				
(¥bn)	Q4 FY20	Q4 FY21	YoY	QoQ
Revenue	151.4	163.1	+8%	-5%
Pretax Profit	41.3	48.1	+16%	-7%
Net Profit	30.8	37.8	+23%	-8%

Full Year Guidance			
(¥bn)	FY20	FY21	YoY
Revenue	547.9	655.0	+20%
Pretax Profit	159.2	205.0	+29%
Net Profit	125.2	163.0	+30%

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Lastly, this shows the guidance for Q4 and full year.

The Q4 numbers may look a bit weird. They are rounded on a yearly basis, but the full-year guidance numbers show JPY655 billion in revenue, JPY205 billion pretax profit, and JPY163 billion in net profit.

First of all, in terms of FX, JPY115 to the dollar and JPY130 to the euro is being assumed.

And for IT, as mentioned, there are seasonality factors. Compared to Q3, the revenue for IT will be lower QoQ. This is something that you will see if you look at the previous-year trends.

For the HDD Substrates, Q4 is the weakest. Due to the production of these HDD, Q3 is highest and Q4 is lowest because the number of utilization days of operating the factory is smallest for Q4. This goes for the imaging business as well.

For cameras, Black Friday and Christmas, this is where the sales occur, which means that for Q2 and Q3, we have the highest sales and there is always a drop in Q4. That is the norm for all years.

For IT as well, we have a large number of Chinese customers and because of the Chinese New Year, the customer side, factory utilization goes down. On a quarterly basis for IT, Q4 always tends to be the weakest quarter, and that's a seasonal factor.

Lastly, for PENTAX, I mentioned earlier that we were able to win a lot of orders, but due to the semiconductor shortage, we're not able to fulfill the orders in terms of the supply. In Q3, we were able to ship out more than we expected. However, for Q4, we do have a slightly conservative forecast. We will do our utmost to procure the semiconductors because then, we'll be able to ship out, but, of course, we need to be cautious of how much we can procure.

In terms of the Omicron variant, there are some uncertainties and they're not fully incorporated into our numbers. It's not that we have not incorporated anything, but it's not that we have considered that we're going to have a large impact. In that sense, there could be some further impact from Omicron, especially for

the Japanese market. But when the peak of the pandemic is over, then there are rebound sales, so there is maybe a timing issue, but I don't think that the Omicron will cause the overall demand to decrease.

That is it for the numbers. Thank you very much.

**Moderator:** From here, we'd like to move on to Q&A.

## Question & Answer

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**Moderator [M]:** Yoshida-san, please go ahead.

**Yoshida [Q]:** I hope that the new management policy will be explained in the next meeting. I have two questions regarding Life Care, endoscope, other products. What are your prospects in Q4 and the directions in the next term? If you can comment on products other than endoscope in the Life Care business.

**Ikeda [M]:** Hirooka-san, can you talk about the fourth-quarter prospects for Life Care?

**Hirooka [A]:** Well, as I explained earlier, we haven't factored in the Omicron impact. It's not that we don't think there is any influence. However, we do not believe that the business will drop so significantly. And once the restrictions are released, I do believe that demand will come back once again. It's difficult to compare with FY2019 Q4 because we were already impacted to some extent, but I hope that the results will be similar to that of Q3.

As for the prospects for next year onwards, we are able to establish sales in each business, but with regards to our PENTAX business, shipment of semiconductor is an anxiety, so that's one concern. However, all in all, if the market grows to the pre-COVID level, we hope that sales will grow. The next-year's plan has not been prepared yet, but that is our aim or that is what we have in mind.

**Yoshida [Q]:** Thank you very much. My second question is on EUV blanks. Gradually, competitors' tone is going up. But what is your market share prospect going forward or the competitive landscape?

**Ikeda [A]:** I, Ikeda, would like to answer that question. Recently, both our competitors in their announcements have commented about their EUV business. As I mentioned in the previous quarterly results, our customers, for advanced technology, 2-nanometers, they are not comparing ours with other competitors in their certification, and I don't see any signs that we have been rejected and they have decided to adopt others, no signs. Having said that, competitors still have technological logs. We also have our optical track record. We cannot neglect our competitors, but I don't think that customers have made any decision in certification. So far, I think that we are okay. That is all. Thank you very much.

**Moderator [M]:** Thank you, Yoshida-san. And in the Q&A box, we have a question, so let me read out the question.

**Moderator [Q]:** There are two questions with regards to EUV blanks. First is for the 2-nanometer and the 1.4-nanometer. With regards to these latest R&D, what kind of impact or benefits this will bring to HOYA? This is the first question. Especially for ASP and market share standpoints, what kind of a tailwind will the latest EUV blank innovation have on HOYA? And second, in terms of the high-NA EUV lithography, are there any updates?

**Moderator [M]:** And the question is from Mr. Warren Lau.

**Ikeda [A]:** Thank you. This is Ikeda again. I would like to speak. With regards to the first question, for 2-nanometer and 1.4-nanometer, those are being miniaturized, and compared to previous products, there are different requirements for the EUV blanks. For example, the defect level, size or number of items with defects, I think the requirement from the customers' side will become much more severe compared to before, which means that the quality assurance level needs to be stepped up. We need to conduct the tests in a more rigorous manner and this will become the value addition for the new products.

With that new value addition, we will increase the sales price or ASP. For the existing products, there is always pressure to reduce the price and we do need to respond to such price-reduction requests from the customer.

On the other hand, with the latest products with higher value addition, we can continue to raise prices, which, in turn, will allow us to maintain or increase our ASP. These developments of the latest products or innovation are going to be positive in terms of raising ASP.

For high-NA, we provide blanks to ASML and we are conducting the development together, but in terms of the requirement for the blanks, it's not that the wavelength will change. Actually, it is not that we need to provide a completely different product from before for high-NA. However, the optical characteristics will change. The thickness of the coating or different adjustments or developments need to be made to optimize the optics side. And so, similar to the 2-nanometer and the 1.4-nanometer, these changes will allow us to increase the value addition and raise our ASP. Thank you.

**Moderator [M]:** Thank you very much. Next, Mr. Mori, please.

**Mori [Q]:** My name is Mori of Mizuho Securities. You said that you have not factored in the impact of Omicron in Q4, but in terms of demand for contact lenses, while students are not going to school, how do you consider the impact of the schools not being open in Q4?

**Ikeda [A]:** I, Ikeda, would like to explain. As you have pointed out, with regard to the contact lens business, we are doing business in Japan and a semi-emergency state has been issued which is restricting the activities of people. That is considered. However, if you look at the trends of the past two years, the number of contact lenses used before COVID and after COVID, there is a clear difference. When there was a state of emergency being issued, the usage numbers had gone down. However, in the semi-emergency state, if you compare to pre-COVID, the usage numbers have decreased, but not that much compared to the full state of emergency period. If there is a full state of emergency being issued once again, the situation may change. However, for now, I don't think there will be a big drop. We have already factored in some drop even without the Omicron, but I don't have much anxiety.

**Mori [Q]:** Just one more question. Disposable endoscopes, can you give us an update on disposable endoscopes?

**Ikeda [A]:** Disposable endoscopes, yes. In the previous meeting, I said that we manufacture in Bulgaria. It is taking time more time than expected to start the manufacturing. We haven't done any operation in Bulgaria before. And also, because of COVID in Eastern Europe, it's difficult to hire people in Eastern Europe. We have been slightly impacted in that way, so the speed of ramping up our production in our plan has been different from our original plan. It may still take some time for our full operation in Bulgaria. That is all from myself.

**Moderator [M]:** Thank you. Next, Mr. Damian, please?

**Thong [Q]:** This is Damian speaking. For the hard disk, are there any updates? 18nm 20nm seems to be the drivers, but when will the glass substrates will be employed by other customers? And what will the impact be on the industry?

**Ikeda [A]:** Thank you. I would like to respond. In terms of the hard disk update, I'm sure that you know the situation very well, but the 18TB is currently in the market and that is a 9-substrate model. Going forward with the 20TB, that will have 10 substrates. The number of substrates per drive will increase with the 20TB, so that is an opportunity for us to grow our revenue.

And beyond 20TB, first of all, WD/Toshiba are developing a new technology, a MAMR, and the memory density by MAMR is limited. There is a limitation to increase the memory density, so continuing the MAMR



development will not continue to contribute to increasing the memory capacity. Beyond, MAMR, there is HAMR, and I think there is a joint understanding of that in the industry, which means that going to HAMR, glass substrates will be a requirement. For all the customers, we are currently developing the glass substrates technology with the customer.

The transition timing may be changed. There is some kind of frontloading or the timing may be delayed or accelerated. There are various factors. But given that there is a constant need to increase the capacity, there is going to be a shift from MAMR to HAMR, and HAMR will require the glass substrates and that is a common understanding. Thank you very much.

**Thong [Q]:** One more follow-up to that. MAMR plus glass, is that a possibility, meaning that glass substrates will be used in part before shifting to HAMR? Is that a possibility?

**Ikeda [A]:** It will be risky for the customer to shift to glass substrates 100% all at once, so I think at some point, customers may choose to use glass substrates partly before HAMR. But this is not something that has been finalized and this is not something that we can commit to, but that kind of thinking is quite possible. Thank you.

**Moderator [M]:** It is time to end, so with this, we would like to close today's earnings presentation. Thank you very much for your participation today.

[END]

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