

First Quarter of FY2021 Presentation Q&A

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[21Q1 Results and Outlook]

Q. Despite the fact that the overall assumption for demand for components has been lowered a bit except for PCs, the sales assumption for all quarters is higher than the previous forecast. Please tell me what is this difference. I think that the demand for parts probably includes the customers' inventory.

A. There is a risk of overall component procurement due to a shortage of semiconductors, mainly for automotive applications, and components are probably purchased in advance. Initially, we thought that this would be resolved in the second half of the year. However, although the excessive portions will be resolved, the concept of the inventory level itself has changed significantly among in-vehicle components manufacturers or related distributors.

Q. You mentioned earlier that the impact of smartphones in Greater China would be seen in the April-June period, and I think it has come out as expected, although with a slight delay. I think you were saying that from about October to December of this year, automakers would take in too many parts, and there would be a reaction to that with capacitors. However, looking at the current forecast, sales forecasts for capacitors and vehicles don't decrease significantly from the first half to the second half. So, your view has changed a lot. Let me know if you are now in a soft landing scenario where you will have steady sales toward the next fiscal year.

A. Although it was a little later than expected in terms of smartphones in Greater China, we are aware that we have entered a downtrend from April through Q2 and Q3. We believe that the launch of new models will start around the beginning of the next year, so we expect a recovery from around the end of the year as the purchase of parts begins. Regarding the adjustment of MLCC, we had previously assumed an adjustment phase at a slightly earlier stage, but even at this stage, demand has not fallen that much. Considering the production volume of set makers or car makers, the appropriate inventory level has risen a bit. We have not yet seen a reaction to this, but we estimate that a little reaction will start to rebound in the second half of the year.

Q. I think the number of sets is the actual number of components used, excluding channel inventory. I believe that the channel inventory and the inventory stored by customers are now at a larger level than in the past. Also, once the bottleneck for semiconductor is eliminated, production of cars and other products will increase. I understand that the demand may decrease a little bit in the second half of the year. If you say the adjustment is delayed a little bit, will the adjustment occur in the next fiscal year? Or should we assume that this is the new normal, and from the inventory level in the second half of the year, sales will grow based on actual demand in the next fiscal year?

A. It depends on the purchase by semiconductors in the supply chain. Appropriate inventory levels are higher now than the JIT that the car industry has been promoting for some time. I believe it has become the new normal. However, we feel that it will take some time for semiconductors to recover. I am reading that we have to wait until 2022. The reason for this is that although various semiconductor manufacturers are investing to a certain extent, they are mainly investing in the most advanced areas and are not investing much in increasing

production of, for example, 40-nanometer mature processes that are used in automobiles and industrial equipment. We believe that it will take some time to normalize.

Q. If the customer's production recovery is a little slow, the demand will slow down for a while, but when the customer's production returns, the demand for capacitors will return along with it.

A. Yes, you are right.

Q. While sales are expected to increase in the Q2, please explain why profit is expected to decrease.

A. As you pointed out, sales will increase, but operating income will decrease from JPY105.1 billion in Q1 to JPY98.9 billion in Q2. This is mainly due to differences in the product mix. In Q2, sales to smartphone manufacturers in North America will seasonally increase, so the ratio of module product output will rise. This is the most significant factor. Sales will increase significantly from Q1 to Q2, but manufacturing output will be about the same in the first and second quarters. Therefore, there will be a slight decrease in profit compared to Q1 due to the impact of the product mix mentioned earlier.

Q. In terms of changes from Q1 to Q2, will sales of components such as capacitors increase or decrease?

A. From Q1 to Q2, sales will increase mainly for capacitors, other components such as inductors and batteries, and modules. Except for piezoelectric components, we forecast that sales will increase in Q2 compared to Q1.

Q. Please tell us about the current demand and sales. First of all, how much safety stock buildup is currently included in the quantity demanded by customers? For example, is there 10% more, 20% more. How much more is being taken in by each application area? I would like to know how you are feeling about it.

A. To be honest, we haven't been able to break it down in detail. However, what I can say is that, as I mentioned earlier, customers are likely to increase their safety stock for automotive applications, and there is a similar trend in computer-related equipment. In general, we continue to receive strong orders.

There are many customers who expect that the problems in the semiconductor supply chain will be resolved a little sooner than we expect. If this problem is resolved, I believe that the orders received will become very close to actual demand.

Q. Also, you have revised upward your full-year net sales forecast by JPY70 billion. If you break down the revision into actual demand and the revision due to the buildup of safety stock, what does it look like? I don't think the demand and sales assumptions you made necessarily match, so I'd be happy to get some hints.

A. We have not been able to decompose the revision due to actual demand and the revision due to inventory buildup. In addition to the impact of the increase in safety stock by our customers, I suspect that amid the shortage of parts, we are receiving an increasing number of orders for Murata component parts, mainly capacitors, for which we have a relatively high supply capacity.

Q. So, if you look at it from an order basis, it's like an increase in market share? You are receiving orders where you have a capacity.

A. Exactly.

Q. The negative impact of Chinese smartphones probably caused that real production should have fallen in Q1. I think it has already fallen in Q1 rather than falling from here. I think the purchase of parts will be adjusted from here, and will fall in the Q2 and Q3. Will shipments for smartphones in Greater China, especially piezoelectric, bottom out in Q2 or Q3? Is it correct to imagine that it will drop in Q2 and then level off? Will it come back in the Q4?

A. Sensorily, I think the bottom will be Q2. We believe that the uptake will begin in the second half of the Q3.

[Capacitors]

Q. Regarding capital investment, please tell us whether you are raising additional capacity for capacitors.

A. As we have already explained, we are expanding our capacitor production capacity at a rate of about 10% per year. This is not the number of units produced, but on a production load basis. We would like to increase our capacity so that we can allocate a larger portion to the growing automotive and ultra-compact sectors. Demand has remained at a high level due to various factors such as COVID-19 and semiconductor shortages. The idea is to bring forward the investment for next year a little and accelerate the capacity expansion a little.

Q. Outstanding backlogs of capacitors are built up. How do you expect this to be resolved in the future?

A. As for capacitors, orders and sales up to Q1 were affected by the buildup of safety stock and prior arrangements, as I just explained. We expect sales in Q2 to be higher than in Q1. For Q3 and beyond, there will be no further increase due to such factors. We expect that the market will remain firm in line with actual demand.

Q. Let me ask a question about production output in Q2. You said that the production output will be unchanged at JPY450 billion in Q1 and Q2. If we take out capacitors alone, is it the case that production output cannot be increased any further? Or is the capacity coming along in stages, and there is room to raise it a little more? The price from the previous quarter decline in Q1 was only JPY3 billion, and from the same period last year decline was JPY12 billion, which is very small. On the other hand, if we look at the full-year forecast, the price decline is expected to be JPY75 billion, revised from JPY73 billion. Given this, I feel that you assume that price will fall in Q2, and if this is the case, it will mean that production output will not rise. Let me clarify whether it is correct to think that if the price does not go down, the output will go up by that amount.

A. Regarding the production of MLCC, the equipment is actually being installed in stages, and we will make it available to the workforce, so we expect the production to increase gradually over time. However, although we are operating at full capacity, there are still various details to be taken into account, such as safe operation due to COVID-19 and not coming to work if employees are not feeling well. So we will continue to operate at a level that is not quite as high as full capacity. To be honest, prices have not moved much up to this point, but in the second half of the fiscal year, there will be regular price reductions, so when offsetting these

factors, there will not be a large increase in monetary terms toward the end of the fiscal year. Or, for the parts that have grown a little, we would like to build up a solid inventory to prepare for the next season.

Q. Is it correct to assume that the production output in Q2 will be higher than in Q1? In other words, are you putting a lot of price decline, and making the assumption that production output will not go up?

A. For Q2, I think it is almost flat or slightly increase.

Q. In response to MLCC, it was mentioned that the concept of BCP inventory is changing, and that orders are now exceeding actual demand. In the future, I think there will be a situation where orders will go down as the company finishes placing orders to increase its inventory. What is your current feeling on whether the capacitor can still maintain the BB ratio above 1, when orders return to a reasonable level? When the inventory fluctuation becomes longer, there will be extra orders to build up the inventory, but this will eventually become the cruising speed. I think that the BB ratio will probably hit bottom when orders linked to actual demand are received. When it hits bottom, what is your outlook for whether the level of orders will exceed that of sales?

A. So far, we have seen the situation that customers have been accumulating inventory and preparing for various risks. I understand that the process of building up is almost finished in Q1. In the short term, it is unlikely that we will see a downward trend, and therefore we made such a forecast for the current fiscal year. Probably from next year onward, some of the inventories for consumer products will be reduced by 0.3 or 0.5 months, depending on the situation. However, we do not expect to see a major adjustment due to inventories, as we believe that the car market will remain at this level for the time being. In that sense, we believe that sales in the second half of this fiscal year will form the basis for the next year and beyond.

Q. In the second half of the year, the inventory level will be fixed to some extent and things will settle down. Is it correct to assume that the situation will be normal around the Q3, when inventory will not fluctuate and orders will be based on actual demand, and the BB ratio will exceed 1?

A. Yes, that's approximately how we see it. There will also be the impact of specific customers in Q3, so I think it would be better to look at the average of the third and fourth quarters.

Q. I would like to ask you about downsizing. In the current tight supply and demand situation, car manufacturers have said that they do not want to change their designs too much. I would like to ask you about the trend of downsizing.

A. In terms of miniaturization, although the speed of miniaturization is not increasing, the tightness of MLCCs has been recurring for various reasons. I understand that design changes and downsizing are steadily progressing at new car models. Adoption of products that are actively invested and easily to procure is progressing.

Q. Regarding MLCC, you explained about a competitor's attempt to switch the internal electrode from nickel to copper. Your company has been mass-producing products that use copper as the inner electrode for quite some time. Can you tell me if there is a possibility that you will switch the internal electrode from nickel to copper?

A. Regarding the internal electrodes of MLCC, there have been products that use copper as an electrode for a long time. The demand for high Q capacitors will grow as they are used in high frequency areas such as 5G, and copper electrodes will be used in these areas, so I think you are interested in copper. I believe that demand will grow, but I do not understand that there will be a move to use copper for the area where nickel has been used.

Q. Is the borderline between adopting them and not adopting them the millimeter-wave range? Please let me know at what frequency is supposed.

A. As you said, the millimeter wave is one of the trigger. Copper electrodes have long been used at Murata to measure how far to suppress ESR in the high frequency range. It is used in some very special applications, such as matching antennas in the high frequency range, or in measuring instruments that require high precision. I believe that the demand for such applications will gradually increase, and millimeter wave is one of the triggers.

[Modules]

Q. Please tell us about the background of the downward revision of the module sales forecast. As for RF modules, you mentioned that you will recover your market share in the next fiscal year. Please tell us about the prospects for expanding business with major smartphone manufacturers and the status of reference designs of Taiwanese chipset manufacturers.

A. First, there are 2 major reasons for the downward revision of module sales. The first is that semiconductors are not sufficiently available, or are unlikely to be available, compared to previous plans. We have not been able to secure enough parts and materials, especially for Wi-Fi modules for automotive and industrial electronics. Another reason is that we had assumed that for about half of the handsets, or a little more than half, millimeter wave 5G would be used this year, but in light of the current state of infrastructure development, the attachment rate will not increase that much. This time, we revised our reading downward. These 2 reasons have led to the downward revision of the module.

We have been able to start approaching our US customers for next year's models earlier, based on our past experiences. We are actively proposing new technologies, but it will take time to finalize or explain the situation. As for the new reference designs from Taiwanese chipset manufacturers, sales are expanding well, but they are lagging a bit. As I mentioned earlier, the Chinese market is on a slight downtrend in Q2 and Q3, but there is a sense that the new platform will be widely used in Q4, so I think it is possible to recover.

Q. The question I have is about the XBAR for module. You mentioned that you would wanted to use it for the module next year. If you want to use it in next year's model, I think that the evaluation has already started this year and it should have already been released to customers. How much of the work is done now, and what is the customer's evaluation? Also, there must be a talk that the platform will not change that much next year. I think you're talking that the current platform will remain. What do you think about the possibility that the adopting process might be delayed a little bit due to the customer's circumstances?

A. I wouldn't say it's been smooth sailing for technical development of XBAR, but we've been working on it while facing quite a few technical issues, and we've been conducting a fair amount of sample activities. However, as for whether the technology will be adopted in next year's model, we are also proposing the SAW filter and I.H.P. technologies that we already have, so we don't know which technology will be adopted yet. I think we are doing everything we can so that they don't end up like last year.

Q. In the area of modules, you mentioned earlier that there is a shortage in the procurement of semiconductors. How do you foresee solving this problem? Also, does the PA for RF module, et cetera have no problem? Please tell us about your outlook for the future as well.

A. First of all, there are many variations of IC. First, PAs and compound semiconductors are not a major problem right now. Also, in many cases, we are using the most advanced technology for CMOS PA. All CMOS manufacturers are actively investing in products that use the most advanced design rules, so I don't think there will be any supply chain problems there. On the other hand, the wireless Wi-Fi modules and Bluetooth modules that are used in cars and industrial electronics use slightly older processes such as the 40-nanometer process I mentioned earlier, and the fundamental problem is that no one is investing in these older processes. In contrast, there are only 2 measures we can take. 1 is to replace the process with 1 that is closer to the state-of-the-art process, and we are working diligently on this task. The other way is to place orders earlier, as the lead time is getting longer and longer, not just 6 months. We are working on both ways now.

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