Information Meeting 2021 Q&A

Presenter : Norio Nakajima President
Masahiro Ishitani Executive Vice President (Board Member)
Masanori Minamide Executive Vice President (Board Member)

【Mid-term Direction 2024 Management Targets（Economic Value）】

Q. I would like to ask about your FY2024 sales target of JPY2,000 billion. When breaking this figure down to contributions from components and devices/modules, what would be the target sales CAGR for each business? In addition, what is your target sales growth rate in 2030?

A. We cannot comment on the specific breakdown for the FY2024 sales target of JPY2,000 billion, as we are still in the stage of ironing out the details with each business unit. We think the growth rate of modules will be slightly higher than components. 1 way to view this is that we are aiming for a sales CAGR of 5% to achieve sales of JPY2,000 billion in FY2024. The point here is how to view FY2021, which will be the base year for comparison. Although the market is expected to continue to grow, there are aspects of FY2021 that need to be taken into consideration, such as the buildup of inventory at customers, the review of the business portfolio for modules, and the drop in our market share to some customers. Conceptually speaking, we believe that the normalized sales growth capacity of the Components business is over 5% on a Company-wide basis, excluding the special factors in FY2021. As for FY2030, we are making estimates internally, but they are still not in the stage of disclosing with you all here. The important point is the sustainability of our growth heading toward FY2030, while also striking a sound balance with our responsibility to address social challenges.

Q. The issues that have obstructed your business over the last few years, such as the US–China decoupling and supply-chain disruptions, are ongoing as you work toward the management target of JPY2,000 billion in sales. To what extent have you factored in an impact from those issues? What do you estimate as the impact of these issues on your management targets over the next few years?

A. Our FY2021 Earning forecast and Mid-term Direction 2024 include all risks and opportunities**.** We are aware that some people may call us conservative when they look at our performance in the second half of the year, but we believe that the semiconductor supply chain is not yet on track for a rapid recovery. We believe the recovery of the supply chain will take place gradually from FY2022. We are affected to some degree by the US–China decoupling. There are actually some product lines that we cannot ship, and they are already included in the calculation of the disclosed figures. However, we plan on making preparations with future conditions in mind when it comes to the improvement or worsening of relations.

【Mid-term Direction 2024 Management Targets（Social Value）】

Q. On page 25 of the presentation material, you set social value targets for sustainable resource usage rate and resource recycling rate. Please explain how you define these 2 targets and how you intend to raise the ratio going forward.

A. We define the sustainable resource usage rate as the usage rate of resources with a low risk of depletion that can be used sustainably in the future, for example, by establishing recycling schemes. We define the resource recycling rate as the percentage of our output and emissions that are sent for recycling as environmental resources. 1 of the major issues is that we still use a considerable amount of plastic in our manufacturing process and supply chain. As for the manufacturing process and packaging materials, we cannot do recycling by ourselves only. Therefore, we would like to achieve this goal in the entire supply chain. Especially in Japan, we are also involved in standardization efforts by organizations such as JEITA. There are other improvements that need to be made to the wastewater treatment, and we will continue to work on them while forming alliances with other companies.

Q. On page 41 of the presentation material, you disclose your efforts to strengthen the response to climate change. Although you have clarified your initiatives in this regard, these activities are limited to Scope 1 and 2 emissions. Is this because you are considering Scope 3 emissions going forward, but you were unable to make it in time for this time's disclosure? Or did you reach a conclusion to limit the scope of your activities to Scope 1 and 2 emissions?

A. Scope 3, we are planning to set our target by the end of this fiscal year in accordance with SBT and disclose the information. We estimate our current level of emissions at around 5.2 million tons, including Scope 3. Scope 3 is the largest category, estimated to be around 3.8 million tons. The majority of that is Category 1, which is the purchase of materials, which accounts for about 75% of Scope 3's CO2 emissions.

Q. What are the implications of ES management targets? It's unclear why you set the target at 70% and 76%. Could you tell us on what basis you came up with this number?

A. As for the employee engagement indicator, we use the Korn Ferry global survey to conduct evaluations. The survey calculates the evaluation score based on the activity level of the strategy, which indicates the penetration of the strategy among employees, and the level of employees, which shows whether they feel challenged. We set our target for 2030 at 76% or higher, because the average evaluation of global high-performing companies is 76%. In order to reach our target, we set our milestone for 2024 at 70% or higher.

【Mid-term Direction 2024 Capital Allocation Policy】

Q. Why did you decide to create a category for strategic investments? Could you provide us with an image of the breakdown of that investment, and the areas where the investment will especially be allocated?

A. Our strategic investments will be for alliances or M&A to acquire technologies that would differentiate us, and for environmental , IT etc.. Such investments are typically called non-financial investments in society because they do not immediately translate to financial value, but we believe it is difficult for a company to invest if it deems this as non-financial value. We consider it to be an unfinanced value, and that environmental conservation will surely translate to profit generation. And we hope to consider the expenses for the acquisition of technology aimed at the expansion of layer 2 of the portfolio in order to growth business significantly within the scope of strategic investments. We will also be making investments in the visualization and connectivity of data, including smart factories centered on DX, which need to be implemented rapidly. We will implement measures that will not translate to financial value on the P&L immediately. If we end up using less than the allocated amount, then we will spend the remainder on share buybacks or other forms of shareholder returns.

Q. Is it possible to break down how much investments you will make in the environment?

A. We are in the process of discussing the details of the resolution. Recently, we announced the transition to 100% renewable energy at Kanazu Murata. We are following that up with similar developments at several offices. In addition, we are trying to figure out how large the scale of the project will be, taking into account the procurement of energy from renewable sources for large business sites. For example, batteries will be used in the storage battery systems. It is difficult to advance development at our planned business site at once, and it will need to be proceeded with gradually. We are calculating how much progress can be made over the next 3 years on a realistic basis.

Q. I would like to ask about new factory in Thailand. Please tell us the purpose and investment amount of establishing a new base.

A. We have a large production base for sensors and other products at Chiang Mai in Thailand. We are planning to purchase new land near there and build a production building for MLCC. Our factory in Thailand has a history of more than 30 years, and we make a wide variety of products in there. This time, MLCC will also enter the market. We are implementing diversification as part of our efforts to expand our production bases in a balanced way, given that they are currently in Japan, China, the Philippines, and Singapore. In the medium and long term, we would like to make it a solid and capable plant, but in the next 3 years, the contribution will be minimal. We expect operations to start in October 2023 and would like to solidly establish the plant first before expanding the business. We plan to invest to build about JPY12 billion. We are thinking of recording them under Capital investment.

【3-layer portfolio】

Q. I would like to know your thoughts on the applicability of metrics such as ROIC or OPM to the 3 layers of your business portfolio. Unless you make each layer accountable to their own ROIC targets, it worries me that perhaps they would fall into complacency. You have mentioned autonomous and decentralized organizational management. Has it crossed your mind to assign separate management targets to each layer?

A. We believe it is a good suggestion to separate the ROIC targets for each of the 3 layers with a view toward capital efficiency, so we will consider adopting individual targets for each layer.
It is very important to have a clear picture of the actual conditions in order to prevent people from falling into complacency. The reason why we divided our business portfolio into 3 layers is that they each possess different characteristics. As for layer 1, this business requires us to make huge upfront investments, so it is difficult to raise the capital turnover. Nonetheless, ROIC has been rising due to the increase in operating profit. As for layer 2, we would like to raise the capital turnover higher than the current state.

Q. Is there a difference in the Company's approach to M&A in layer1, 2, and 3? Does it mean that the portfolio will be reshuffled for each layer?

A. The intention behind M&A is different for each layer. For layer 1, the point that will determine the success or failure of the business will be to win in cutting-edge technologies. We expect demand to grow, so we will prepare a sufficient supply capacity in line with that growth. In particular, we must strengthen our power inductors. On the other hand, there are many areas that we can handle on our own. The point in layer 2 is to what degree we clarify our differentiation. We hope to be aggressive in acquiring differentiation technology. We recognize this as a common issue across multiple domains, such as communications module, sensors, and batteries. As for layer 3, in which we have not yet to establish our business model, I believe M&A will be in option for us to build networks with customers or acquire new business models. Although the implication is different from layer 2 to layer 3, we will be investing aggressively in both layers.

【Portfolio management layer 1（Components）】

Q. On page 18 of the presentation material, it talks about the installed base of MLCCs on automobiles. It says that level-0 conventional vehicles have an installed base of 3,000 units per vehicle, while level-3 EVs have over 10,000 installed units per vehicle. Generally speaking, how much has the average per-vehicle installed base increased over the last 3 to 5 years. Furthermore, how much do you see the installed base growth over the next 3 to 5 years?

A. About automotive components, the installed base will vary depending on the penetration rate of CASE and EV and the installation ratio. Overall, we expect the installed base of MLCCs to be about 4,000 to 5,000 units per vehicle. I believe the installed base is increasing by a CAGR of 15% to 20% over the last few years, particularly due to the adoption of CASE. We expect the installed base to continue to increase by a CAGR of around 10% to 15% over the next few years, considering the further addition of autonomous-driving capabilities. We expect especially robust growth in the installed base of highly reliable capacitors.

Q. About capacitors explained on page 31 of the presentation material, I believe the graph on the right shows a rapid growth in the market from FY2021 to FY2022 for automotive MLCCs. In particular, it forecasts growth centered on high-capacity products, and that this trend will continue. Does that mean we can assume automotive MLCCs will grow steadily next year? What is your outlook on this fiscal year and the next fiscal year as things stand today?

A. We expect relatively strong growth in demand for automotive MLCCs in FY2021 to FY2022, especially high-capacity MLCCs. Some of the products sold in FY2021 have been stocked up as inventory for FY2022, so some demand for FY2022 may have been brought forward to FY2021. However, we do not think that the amount of such inventory is that large, and we currently expect high-capacity products will drive growth.

Q. Please explain the possibility or potential for the profit margin of components to increase further in FY2030.

A. We will make every effort to improve the profit margin in 2030. We expect products that require high reliability and high voltage resistance to grow for automated driving and EVs. Smaller, thinner, and larger capacity products will grow in smartphones, and demand in the cutting-edge area of technology will increase. Based on these axes, market areas where Murata can demonstrate performance and have a competitive advantage over other companies in the same industry will grow. We hope to do our best to meet your expectations.

【 Portfolio management layer 2（Devices/modules）】

Q. Please tell us why layer 2 of the portfolio has not contributed to sales or profits at the desired pace over the last few years. You mentioned the competitors in this space are already well-defined, so the task is to differentiate from these other players. Could you tell us the specific actions or measures you will be taking in terms of your key devices and modules?

A. We believe layer 2 of the portfolio is a necessary business for us because we would also like to diversify our profit sources. We believe it is important for Murata to differentiate from competitors in order to suppress volatility in our business development. For example, in the high-frequency domain, a frequently discussed topic is the comparison between Murata's SAW filter and BAW filter of a competitor. We believe that Murata has come out ahead of competitors by incorporating a technology called XBAR into its SAW filter, thereby furthering our filter technology. Meanwhile, communication as a whole has seen the rapid spread of modularization, including by Chinese smartphone manufacturers. Against this backdrop, in order to differentiate our products, it is insufficient by filter technology only. Therefore, we have tried to differentiate through PA, which are active devices and digital pre-distortion or digital ET technologies obtained through the acquisition of Eta Wireless. By doing so, we hope to make proposals to customers that are unique to Murata and display our advantages. As for MetroCirc™, the properties of polyimides are improving, and we are also trying to improve the properties of MetroCirc™'s own materials. We hope to guarantee our technological advantage over the next few years, and the area in which we can utilize this technology the most is 5G and 6G, centered on millimeter waves. As an example, we promote our L-shaped module, which is an original product of Murata, on page 37 of the presentation material.

Q. Do you think that solidifying approach to differentiate your technology would generate steady sales each year? Do you think that the best products will generate sales, just like your other materials-type products?

A. Cost is a very important factor, so if there are products that are good enough at a competitive price, then that would probably be advantageous. However, there are mounting difficulties in communication networks when considering the radio-wave environment. Existing technologies are unable to handle these radio waves, or even if they can, they shorten the life of batteries by a lot. The advantage of Murata's products is that it meets those higher standards and provides value that is recognized by customers.

Q. Murata has acquired PA-related technologies and strengthened each elemental component, such as RF switch and filters, in recent years. However, I think there was still a problem that the technology of each product could not improve the overall evaluation as a module enough. Do you have a roadmap that illustrates the evaluation of the business in the acquisition of single elemental parts up to now, and how they will come to fruition in Mid-term Direction 2024 and Vison2030?

A. In the past ,we expected a rapid acceleration in modularization as the 4G era after 3G was in sight. We also expected that our competitor at that time would be our current competitor, PA manufacturers. There was an option of either choosing a business to provide filters to module manufacturers or to become a module supplier by being the main suppliers on our own. We chose to become a module manufacturer, considering what we wanted to realize. Later, we acquired the former PA business of Renesas, and also acquired Peregrine Semiconductor, a top manufacturer of technologies such as SOI amid the trend of CMOS. We worked to cooperate broadly in filters and translate our differentiation strategy to results. We take pride in how Murata is 1 of the few surviving Japanese manufacturers in the High-Frequency business. We cannot guess what would have happened to our High-Frequency business if this initiative were not taken. There are 3 or 4 competitors only in the world, so we will do our best to differentiate our products. Competitions are being carried out every year. We are competing over which characteristics were better and which costs were lower. We try to raise our level to the next stage and take our technology to an unparalleled level in Mid-term Direction 2024.

Q. Murata first dealt with reception systems, and has since captured demand related to filter banks, but PAs cannot be differentiated from semiconductors alone, so I believe you acquired Eta Wireless in an attempt to differentiate Murata by introducing new technologies. In the age of 5G, do you think this technology will be a catalyst to make your headway into the transmission module market?

A. Compared to the conventional analog envelope tracking technology and the technology used by American platform makers, the results of lower power consumption, such as a considerable increase in battery life, are starting to emerge. Therefore, we are planning to provide samples to customers at least in FY2023, and making it possible to achieve results in FY2024.

Q. As the frequency increases in the future, I believe millimeter-wave AiP and AiM will become more and more important. To what extent can you expand the business in the next 3 years? In particular, I believe AiP will be used on the terminal side, and you have been making various proposals, such as a flat type and L-shaped type. Furthermore, I also think that the foundational technology will be useful. On the other hand, you are working on array-type modules for base stations, which I believe is a new business area. What kind of technical hurdles do you need to clear to reach practical application? Please tell us about what is important in the future, including the cost aspect.

A. About millimeter wave bands, you are right that modules will probably be integrated with antennas. I believe that there are already good enough products that work with normal technology, but there is considerable room for differentiation by using MetroCirc™ or our basic filter technology to create high-performance products. We must discern the areas in which such high-performance products can be applied by customers who see differentiation. We are in a position to provide a wide range of solutions for base stations, including transceiver devices for base stations. The market is expected to grow very rapidly, and we believe that if we can adequately communicate our technological value proposition to this market, it will lead to significant business expansion. Unfortunately, we have not finished to make a quantitative evaluation yet, and we will be examining each business and product closely in the future.

Q. What kind of measures will you take to expand the assets or business systems from a software perspective in order to raise the probability that functional products will become a growth driver? In addition, please tell us what kind of products are the most compatible with higher added-value through software.

A. In the area of functional devices centering on sensors, we make our own ASICs, and we can also build software up to the firmware stack. For example, the sensors that we provide for autonomous cars, such as inertial sensors that combine acceleration and angular velocity. Depending on where we cut the interface, we may need another system integrator to come in between, but we are experiencing cases where the customer is directly Tier 2 customer or OEM customer. As the weight of software is expanding, we are accumulating technology and securing resources within our company, but we are also collaborating with a wide range of possible partners.

Q. About Solid-state Batteries, there have been news reports about the adoption of Solid-state Batteries in industrial machines. What are its features that have been evaluated compared to rechargeable batteries? Also, please share with us your thoughts on differentiating lithium-ion batteries, which are expected to be adopted in wearable devices in the future.

A. These batteries are used at very high temperatures in the industry battery market. As such, they are being developed based on the assumption that they will be used in place where it would be impossible to use other batteries such as primary batteries or lithium-ion batteries. These batteries should have already entered the production phase under the initial plan. However, there are still technological hurdles to be cleared when evaluating these batteries for usage in high-temperature environments, resulting in a slight delay in their launch. In order for these batteries to be used for wearable devices, it will be necessary to increase the battery capacity to a certain extent. The features other than capacities, such as safety and reliability, are already at a high level. Therefore, in order for the battery to be used in wearable devices, it will be necessary to make slight changes to the materials to raise the capacity a little more.

Q. I believe Murata is 1 of the companies capable of producing automotive batteries, given its lucrative cash flows. Is there a possibility that you will consider entering the automotive market? I especially believe that Murata possesses LFP and that this will become a tailwind for the business.

A. We are not very interested at this point. The reason for this is that the basic composition of LFP batteries are already known to the public, and they are trying to differentiate their products by obtaining high reliability through additives. However, we believe that Chinese manufacturers are already in a situation where they can produce the basic parts. Therefore, we have not yet to find a technology that can provide significant differentiation without increasing costs.
On the other hand, massive investments will be required, so it is likely to be impossible for a single company to cover these costs on its own. There is a widespread demand for our LFPs in power tool market, and we are doing our best to meet the demands of our current customers.

【Portfolio management layer 3】

Q. I would like you to give us more specific examples of layer 3, which you explain as the creation of new business models. What is the business model in which you place the greatest expectation, and what kind of products are you actually developing at present?

A. 1 example is vital sensing, which is a domain in which Murata's value has been acknowledged by customers. It is possible to detect small changes in the behavior of workers on the shop floor or at construction sites by putting a small vital sensing device on their normal helmets. The device also detects the pulsation of workers, so, for instance, when a worker is surprised, this can be detected through a change in their pulsation. By extension, it may become possible to detect near-misses on the shop floor or at construction sites. We believe this is a technology that can also lead to driver monitoring by applying what we learn through vital sensing of the human body. We have also rolled out a traffic counter system in Southeast Asia. This is a service where LiDAR technology is used to detect and provide information on the traffic volume, characteristics of passengers, and characteristics of vehicles. These data can then be used in information provision solutions such as car navigation to enable quicker arrival to the destination of digital signages. Another new domain is vibration sensing. We are using shock sensors to detect the vibration of equipment to identify when they need maintenance and prevent breakdowns. Thus, vibration sensing is a technology that can be used effectively to determine the need for maintenance, thereby preventing breakdowns and conserving operations.

Q. In my understanding, the Company will aim for layer 3 business scale of JPY100 billion in 2030. Is it correct to understand that this will be achieved by providing solutions, which create new business models?

A. Yes. We believe that offering solutions will be our main initiative in the future challenge domain, which is layer 3, but the number today is still minuscule, so it is not suitable for sharing it right now.