

**Summary of Q&A at Announcement of Operating Results
for the First Half of the Fiscal Year ending March 31, 2020**

Date/Time: October 31, 2019 (Thursday) 14:00-15:05

**Attendees: Satoshi Kikuchi, President & CEO; Toru Matsushima, Executive Vice President, CFO, Director;
and Tadataka Okubo, Senior Managing Executive Officer, CTO, Director**

Q: Do environmental changes due to the U.S.-China trade tension have an impact?

A: It rarely comes up in conversation with our business partners, but there is a possibility that it will gradually start to impact the Enterprise Business Group. However, there is no major impact as of this moment.

Q: Why did other income and expenses not increase much?

A: This is because the utilization rate has risen. Looking at personnel expenses in the first half, they increased 1.2 billion yen (salaries of 0.4 billion yen and bonuses of 0.8 billion yen) on a gross basis, but on a net basis it seems that only 0.4 billion has risen because there was the transfer of work in process (transfer from SG&A expenses to the cost of sales) of 0.8 billion yen. This trend was also observed in Q2.

Q: In the operating results for the first half, describe any projects included as a result of frontloading.

A: Regarding orders, there is some frontloading in the Enterprise Business Group and the Telecommunications Business Group. As for the breakdown, the former is the buildup of a small amount of projects, and the latter consists of several medium-sized projects, with the sum of both groups totaling about 2.0 billion yen. There is no large amount of revenue.

Q: What are measures to improve the gross margin, their effect and the time axis when the effect comes to the surface?

A: Expanding the cloud is an effective measure. Because “CUVICmc2,” our cloud service, has a structure where higher revenue leads to higher profit, we would like to develop this service in the future. What is effective for improving the gross margin is making an improvement by changing the sales mix according to the model, which is difficult because products are also growing. The competitive environment has been improving since last year, and we have a policy for large projects of not receiving orders for unprofitable projects unless the situation forces us to do so. If we win the bid for a project that we tendered at an appropriate price, profitability will also increase. We have already described that we have been able to win orders for some bidding projects in the current fiscal year, and the profit margin of these projects has improved compared with the past. However, there is still a tendency to win projects at a lower price than necessary at the field level, and we must defer to it as management. We are saying that our target gross margin is 24%, but we have hardly achieved it. Therefore, we aim to reach that level during the period of the current medium-term management plan and then aim to go further. We will consider a specific target after looking at the situation in the second half.

With regard to the streamlining of development, which is one of the measures to improve the gross margin, we

want to increase profitability per engineer through new architecture and agile development, because we will not have an abundance of engineers in the future. In addition, there is a possibility that we can raise the unit price if our software engineers, who understand the complex aspects of networks, broaden their range of work beyond telecom carriers because they are a rare resource in the industry.

We are also considering the utilization of freelance engineers with high productivity around the world, and we have already worked on the active utilization of engineers who are accustomed to in-house API (Application Programming Interface) programming. I think we will also be able to increase productivity by using API, which has already been recognized around the world.

Q: Regarding orders received in the Telecommunications Business Group, in your full-year forecast for the initial plan you assumed that orders would remain unchanged from the previous year, but I am under the impression that orders were stronger than in Q1 and Q2. Have you revised your forecast upward even though the challenge from the previous year remains high in the second half?

A: We received 5G-related orders of about 9 billion yen in Q3 of FY2018. In Q1 of FY2019, we received orders of about 3 billion yen as ongoing projects, but orders were weakened due to a reactionary fall in other projects. In Q2 of FY2019, we received 5G-related orders from multiple customers of 4 to 5 billion yen, and the situation was good. In the second half, it will be slightly challenging, given the factors for a reactionary fall, such as the aforementioned large orders and strong sales of equipment for disaster control measures in Q3 of FY2018, but we would like to secure orders on par with the year-ago level. While there are uncertainties and risks, we would like to achieve the initial target of a low single-digit positive number in the full year, because the numbers have not fallen behind as of this moment.

Q: You said you had won a 5G-related project from a different carrier in Q2 in the Telecommunications Business Group. What is your view on the gross margin of this project?

A: This is a project in which there are many product sales, but this does not mean that the project is unprofitable.

Q: What is the definition of 5G at CTC? Will business for carriers increase with 5G after the next fiscal year? I also think that CTC does not engage in the radio domain. What efforts will you make for local 5G?

A: We do not deal with base stations for RAN (Radio Access Network). The portion of the mobile network that connects with the base stations will change in 5G. For example, in the C/U (Control-Plane User-Plane) Separation, which divides the control plane and the user plane, products different from those in the past will be involved, and we call business in that domain 5G. However, in the case of NSA (Non-Stand Alone), 4G and 4.5G networks are also used in parallel, and we are involved in that portion. Therefore, the interpretation of 5G is difficult. In the next fiscal year, given that investment in NSA will play a central role, business in 5G will not increase much, but it will rise gradually over time.

In the radio domain of local 5G, CTC System Management Corporation, our subsidiary, follows a variety of procedures including acquisition of the radio license of local 5G as an agent. We need to prepare engineer resources in the RAN domain.

Q: What efforts does CTC make for 5G business in anticipation of a large market, such as the acquisition of projects for local 5G of general companies, in addition to projects for carriers?

A: With regard to 5G for carriers, how to relate to a customer varies. For example, we will sell systems to one customer, and for other customer, we will be deeply involved in the network across the board. For another customer, we will work between these two. Our strength lies in a strong relationship with leading network equipment vendors in the United States and our deep involvement in existing 4G infrastructures. Based on these strengths, we are capable of receiving orders solidly. A preliminary service will begin for 5G next year, but it is still difficult to forecast how long it will take to go to SA (Stand Alone).

Regarding local 5G, we have begun talking with several manufacturing companies. Because resources for carriers and enterprises will be involved, we are thinking about how to allocate resources to business groups in charge of them. However, regarding orders for projects for carriers, we assume that resources will continue to run short because orders for the expansion of existing 4G networks also apply, in addition to orders for 5G.

Technically speaking, what changes significantly in 5G is software. The network OS will also change to a microservice architecture. In addition, it is necessary to carry out container-based virtualization and facilitate coordination between OS and the application. However, it takes time to determine how to make software usable when connecting the cloud to end points sequentially. Leading network equipment vendors are also facing the same situation. We must increase the number of engineers who are able to address this situation. Those with such a skill are engineers in charge of carriers and we are beginning to take actions to make a connection between carrier networks and local 5G (users' networks) by holding a meeting to exchange information across the business groups together with these engineers.

Q: You said that there might be bidding projects in Q2 in the Financial Services Business Group, but it seems that the figures do not support this view. Did you not win the bid for the projects or are the figures as they are now even after winning the bid?

A: There was bidding, but we got off track. I think that the situation will be more visible in Q3.

Q: Your global business increased about 7 billion yen in the first half under review. What was the ratio between the organic growth and an increase through M&A. Because you have set 60 billion yen as the target for FY2020, what is the ratio to that target?

A: The scale of our global business was 17.8 billion yen in the first half of FY2018, but grew to 25.2 billion yen in the first half of FY2019, increasing about 7 billion yen. It grew the most in the United States, which accounted for slightly more than a half. The global business also increased in other operating companies (Malaysia, Singapore, Thailand and Indonesia), totaling slightly more than 1 billion yen. Growth by M&A was 0.7 to 0.8 billion yen. Revenue of overseas-related projects in Japan is also included in the global business, but this portion did not grow much. In the United States, spot sales for Internet service providers had a profound effect. We will continue to work to achieve 60 billion yen, our target for FY2020, by increasing sales of individual operating companies.

Q: How large was the impact of the acquisitions in Indonesia on orders and order backlog? Also, describe the amount of acquisitions and the period and timing of amortization of intangible assets.

A: The total amount of acquisition of two companies was in the low 7 billion range, and the investment ratio was 70% in both cases. In the first half of the current fiscal year, cash flows declined 6.8 billion, which is the amount excluding cash owned by the acquired companies. In addition, our equity ratio is 70%, but goodwill will be fully consolidated. Regarding the timing of PPA (Purchase Price Allocation), we are currently in the process of conducting PMI (Post Merger Integration) and want to conduct PPA by the end of the year, if possible.

We have been taking one company (PT. Nusantara Compnet Integrator) into consolidation since September, so that the amount of impact on operating results for the first half will be the amount for one month. The impact of the acquisitions was 4.5 billion yen on order backlog, 0.7 billion yen on revenue and about 0.1 billion yen on net profit.