Summary Translation of Question & Answer Session at FY 2009 R&D Strategy Briefing

Date: April 17, 2009
Location: Okada Memorial Hall, Fujitsu Laboratories Ltd.
Presenters: Kazuo Murano, Ph.D., President, Fujitsu Laboratories Ltd.
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Questioner A

Q1: *Regarding Long Term Evolution (LTE), if a repeater were placed near a base station, it would increase radio wave interference. Is there any way to minimize the interference?*

A1: Placing the repeater near the base station will increase interference, but we can minimize the interference by using certain frequencies or by narrowing the range of the frequency from the base station. This technology has already been standardized for WiMAX, and we think it can also be developed for use in LTE.

Q2: *What is the range for a base station?*

A2: For our field test simulations, the radius was small—only about 600 meters. But the range for the LTE specification is up to 15 kilometers.

Q3: *Between LTE and WiMAX, which is superior?*

A3: The LTE specification was developed by 3GPP, which created the 3G standard, so it is highly compatible with existing networks, making it very easy to switch over. Compared to LTE, WiMAX has bit rate and other performance limitations, but it also uses a technology known as OFDM, so basically the differences are not very significant. The technology employed will differ depending on the telecom carrier, with existing carriers tending to migrate their service to LTE, and new carriers tending to choose WiMAX.

Q4. *What will the throughput be for LTE?*

A4. In our field trials, the maximum throughput was 240Mbps, but that was using just one terminal. In practice, it will vary significantly, depending on the number of terminals and the throughput requirements of the terminals.

Questioner B

Q1: *For LTE, Fujitsu is conducting field tests with NTT DOCOMO in Japan. Have you conducted, or do you plan to conduct, any tests with carriers outside of Japan, or do you expect to receive orders for base stations from them?*

A1: We are having discussions with various carriers outside of Japan regarding LTE-related business, but we cannot make any public announcements at this point.

Questioner C

Q1: *Please give us more details about the "virtual platform" you mentioned in your explanation about implementing cloud computing.*

A1: A cloud computing environment employs a distributed architecture, where servers or datacenters and related software are connected through a network. Another major premise to cloud computing is that users can use as much computing power, storage, and application resources as they need at whatever time they need them.

We are now developing technology with the aim of creating a virtual platform out of these distributed resources so that, for the user, the cloud appears to be one unified platform.

For example, in a cloud computing environment, a variety of different corporations will be able to bring their applications to the platform we create, and we expect there will be synergies that will give rise to interesting applications for users. In that case, one key will be to create a development environment that will enable ISVs and other third parties to freely bring their applications onto the platform. We are also in the process of developing a variety of other base technologies, such as the ability to freely expand the storage capacity of a datacenter's database.

Q2: *One of Fujitsu's strategies for your business outside of Japan is to expand your sales of IA servers, but what differentiates your servers in the eyes of the customers?*

A2: What customers want most right now is simplicity of operation. With blade servers, setting up and configuring the system, in particular, takes a lot of time and effort. Customers want systems that are easy to operate and that, if problems do occur, they are easy to identify and resolve, even without the help of system or customer engineers.

In addition, one important point of differentiation is our backplane technology. In blade server systems, there is a demand for higher densities, lower power consumption, and faster communications. To meet these needs, we developed the first backplane to achieve 10Gbps direct-drive serial signaling. With this innovation, power consumption was reduced by half. In addition, for use in future products, we succeeded in developing a transceiver circuit that achieves transmission speeds of 40Gbps.