Reading the Future and Taking Bold Steps

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NTT is known for the breadth of its research—from basic to applied—that it pursues toward the creation of new business fields. Its research system is structured about three laboratory groups. The Science and Core Technology Laboratory Group plays the important role of "loading the cannon" for the other two. With "destructive innovation" as a key theme, it covers an extremely wide range of research topics in great depth from science to core technology.

Optical infrastructure R&D is one example of the important role we play. NTT Laboratories has been researching and developing an extensive array of optical technologies for over 30 years. Utilizing knowledge acquired from basic research and envisioning the possibility of an optical network, NTT began with the development of optical components as the first step toward its current position as a world leader in this field. This success can be traced to a team of researchers and supporting managers that refused to give up because they were convinced that large-volume transmission at speeds of at least 1000 times conventional levels could be achieved. Of course, a lot of such research unfortunately came to naught, which might explain why the business side could not originally see the need for optical networks, but some research eventually did lead to great success.

The network environment has changed considerably. The spread of broadband networks has shaken up the entire industrial world, and NTT's business environment has become extremely competitive as a result. Unfortunately, NTT is not sufficiently prepared with new research achievements or with destructive innovation to make the dreams of today the reality of tomorrow.

Nevertheless, we do have a good feeling about innovation to come. For example, "ubiquitous computing" will no doubt become a reality in about ten years. Then, a huge number of devices will be connected to the network. The information-technology industry that is now centered on desktop, laptop, and notebook computers and the Internet will shift toward this ubiquitous network. And in parallel, NTT's business will transform until it is no longer simply "communications." In the coming years, the nationwide issue of the aging society will move to the forefront, and we expect a huge market to be created as demand for solutions grows. We believe that this great need will serve to enhance Japan's industrial strength. NTT has already declared its intent to become involved in these efforts.

From the R&D perspective, we must try to read the future and plan and promote research that takes bold steps toward the creation of advanced network environments. Broadband and ubiquitous networks will eventually solve needs that currently do not exist and will change industries. We want to proclaim a business vision that interprets "communication" in a much broader sense than usual—one that can even include physical distribution, for example. I believe that R&D to this end is the first thing that NTT Laboratories should consider in planning for the future. We must establish both breakthrough concepts and expansion strategies at an accelerated pace in ways appropriate for the age of global competition. While ensuring an environment conducive to the creation of breakthrough ideas, we must also design a mechanism geared to overcoming the competition, starting at the R&D stage of advanced technologies.