

## NTT's Intellectual Property Strategy

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The astounding changes in the communications market caused by the global spread of the broadband society have made the development of an intellectual property strategy essential to strengthen corporate competitiveness. To revitalize Japan's economy and society by enabling companies to add higher value to products and services through intellectual property, the government formulated the Intellectual Property Promotion Plan in May 2004. This indicates that the key to strengthening business competitiveness is finding better ways to combine business strategies with developed technologies and intellectual property arising from R&D results. The Intellectual Property Center promotes the strengthening of business competitiveness and the creation of business opportunities in the NTT group, while also formulating an intellectual property strategy linked to NTT's business and R&D strategies, and conducting strategic activities aimed at making better use of intellectual property. To build an effective intellectual property strategy, we seek to establish an intellectual property creation cycle, which will consist of creation, protection and evaluation, and utilization stages. We are also promoting global development and standardization in this area, while developing new business fields.

### Creation of new intellectual property and rights

As part of the R&D business development strategy, we are evaluating the results of our R&D and strategically acquiring product-related patents by identifying NTT's strong and weak technological areas using a patent portfolio approach. In particular, we are ensuring that we can maintain our initiative in developing technologies which can be used directly for our businesses. We are doing this by widening our base of intellectual property and rights so that it includes the necessary peripheral technologies and services. We file several thousand patent applications every year and currently hold over 10,000 patents. These range from basic technologies for our network architecture and new services to fundamental leading-edge technologies for the future.

### Protection (definition) and evaluation of intellectual property and rights

To reflect NTT's R&D and business strategies, we evaluate our intellectual property holdings, such as patent and trademark rights, in terms of their cost, expected returns, and marketability. In particular, we evaluate patent rights for each technological field corresponding to a product or service and acquire patent rights that suit our business development strategy. We also strive to create and utilize technology brands through our R&D to enhance our brand value.

### Effective use of intellectual property and rights

To strengthen our business competitiveness, we need to apply this strength in intellectual property and rights. For technologies that indirectly contribute to our business, we are promoting their spread through licensing. For fields that require cooperation with companies outside NTT, we welcome cooperation, including the introduction of outside technologies.

We have obtained extensive rights in Japan and overseas in many areas, including optical fiber manufacturing technology (the VAD method); FC-, SC-, and MU-type optical connector technologies; optoelectronic integrated circuit technology; and planar lightwave circuit (PLC) technology. For optoelectronic integrated circuit technology, we have over 1000 patents in Japan, the US, and Europe. For the VAD method and optical connector technologies, we have licensing agreements with more than 250 companies in 10 countries, and we continue to contribute significantly to establishing next-generation broadband communications in many countries around the world.

NTT is actively involved in standardization activities through the main standard-setting bodies (ITU-T, ISO/IEC, TTC, ARIB, etc.) to promote the spread of technologies while also promoting business development. For MPEG-2 Visual (video encoding), MPEG-4 Audio, H.264, VC-1, and G.729 (sound coding), we have been forming a patent group for collective licensing based on rational licensing conditions.

In these ways, we contribute to NTT's business development by strengthening the group's competitiveness and creating new business opportunities. At the same time, we reduce business risks by strategically acquiring product-related patents, effectively applying our intellectual property and rights, and wisely handling the know-how and proprietary information created through our R&D activities.

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