Innovation Management

To solve global social issues, NEC focuses its investments on the technologies and fields that are sources generating new customer value. In addition, NEC promotes open innovations to strengthen core technologies and cultivate future technologies and cooperates with external research institutes that have leading technologies. Moreover, a chief technology officer (CTO) position was established in April 2016 to link these technology strategies with business strategies and implement them on a company-wide level. The CTO optimizes NEC's overall development investments, conducts planning and process design for open-innovation strategies with external entities, and carries out technology development that is more strategic.

Policy

NEC's research and development efforts go through a process of carefully selecting solutions that will be able to provide high value. This approach thoroughly hones the "No. 1/Only 1" core technologies required to deliver the solutions via co-creation with partners and customers. NEC then verifies the value.

To conduct such R&D, NEC has established a Technology Strategy Committee with the CTO as the chair. This committee debates technology strategy on a company-wide level to make effective and efficient use of the R&D investments, which are 4 to 5% of NEC sales. The CTO is responsible for both selecting the core technologies that NEC should focus its investments on and promoting open innovation.

To continue enhancing No. 1/Only 1 core technologies into the future, NEC actively recruits the top human resources at research

institutes overseas and increases the recruitment of PhD holders and graduates of top universities in Japan. Moreover, NEC strives to recruit and cultivate highly diverse human resources to broaden its horizons for the creation of new value. NEC also cooperates with NPOs to conduct study abroad programs and overseas training in developing countries for its employees and thereby provide an opportunity to learn about other business mindsets.

In addition, NEC's Business Innovation Unit is responsible for creating new solutions and new business from the core technologies generated by the R&D. And this unit provides strategies for cross-departmental business fields and plans and promotes new business models that transcend the boundaries of existing business. It also standardizes activities for global service deployment.



Promoting Concentrated Investments and Open Innovation in Key Technologies and Fields

NEC concentrates its investments in research and development in the fields of data science and ICT platforms. Data science involves visualization, analysis, the control/guidance of the real world, and the development of AI technology to create new value. ICT platforms have computing and network technologies that can respond to changes in the real world dynamically and in real-time. They also have security technologies for the stable and secure operations of social systems. NEC has many technological assets in these fields that are unique and superior. But, to further enhance competitiveness, NEC's data science researchers will be doubled by 2018 to strengthen AI technologies and create new technologies.



*1 Ranked 1st three consecutive times in task assessment as sponsored by National Institute of Standards and Technology (NIST) of the U.S.
*2 As of November 2015 based on research by NEC *3 Ranked 1st in task assessment as sponsored by National Institute of Standards and Technology (NIST) of the U.S. (2012)
*4 As of November 2013 based on research by NEC *5 CyberWorkBench

Intellectual Property Strategies

NEC positions intellectual property (IP) as an important management resource that supports the business competitiveness and stability of the NEC Group. IP also strengthens the company's own intellectual property and protects its brand.

Looking ahead to global business expansion, NEC has established intellectual property centers in North America, Europe,

and China to focus efforts on building a global patent network. And, in the field of "Solutions for Society," a strategic patent project has been rolled out across Group companies to promote the acquisition of strong and useful patents.

As of March 2016, the NEC Group held a total of approximately 53,000 patents in Japan and overseas (with 21,000 of those in Japan).

Major Business Achievements		
Business track record		No.1/Only 1 technology
• Technology validation of landslide risk estimation at local authorities both in Japan and overseas	Only 1	Data analysis technology
Established face recognition technology development center and introduced face recognition solutions at alreads in Brazil atc.	No. 1	Face recognition
Built Comprehensive Disaster Control System in Toshima Ward, Tokyo	Only 1	Crowd behavior analysis
• Validating optimal water supply facilities management in cities and towns in the UK	Only 1	Hybrid sensor
	Only 1	Predictive Robust Optimization Framework
Delivered over 600 SDN systems globally	Leading commercialization	SDN
Started offering NEC Industrial InT a next-generation manufacturing solution	Only 1	Object fingerprint
Started offering a colution for predicting domand for repair parts	Only 1	Invariant analysis
• Started of Jennik a solution for biedicting demand for Jehan baits	Only 1	Heterogeneous mixture learning
• Released customers' voice analysis solution	No. 1	Textual entailment recognition
• 4K terrestrial broadcast test conducted with the largest commercial television broadcaster in Chile	High speed	Ultra high-resolution compression technology