

## “In-depth Cultivation of Core Technologies” and “Mutually Complementary Collaboration”

The NTN Group is engaging in speedy development of new technology and product development by reinforcing efforts to create high value-added products and modules through in-depth cultivation of core technologies and collaboration with companies from other industries, academic and government organizations, and industrial clusters in Japan and abroad (open innovation). Above all, to contribute to environmental protection and energy conservation, we are devoting efforts to the pursuit of low friction and product modularization using sensors.

We will strengthen our unique products in growth fields such as aircraft, medical equipment, and wind power generation. In the aircraft sector, we are involved in projects to develop next-generation jet engines. In the medical equipment sector, we are developing leading-edge technologies in collaborations among industry, academia, and government, industry (medical engineering), including magnetically-suspended bearings for artificial hearts and a surgical support system for cerebral aneurysm coil embolization support apparatus. In the field of wind

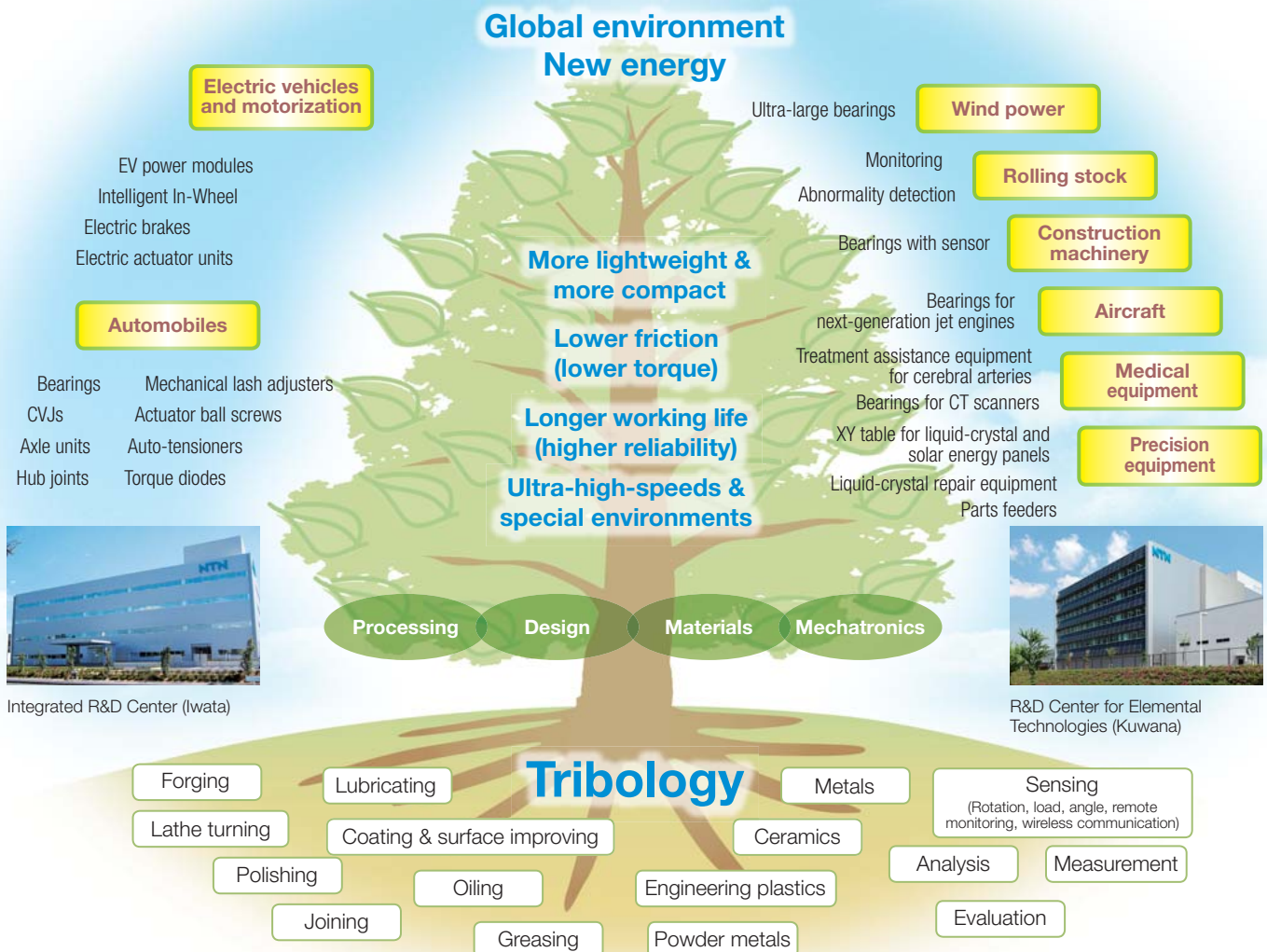
power generation, we are developing technologies to support ultra-large ocean-based wind power systems.

In the area of elemental technologies, NTN is involved in the research and development of new hybrid bearings and composite materials (tribological materials) that integrate our core technologies in powder-related fields including tribology\*, metal materials, surface modification, sintered alloys, plastics, and ceramics.

In the automotive sector, we are reinforcing our response to needs for fuel economy and CO<sub>2</sub> emissions reduction and for next-generation HEVs (hybrid electric vehicles) as well as EVs (electric vehicles) and pursuing product development that takes into account increasing demand in developing countries. We will continue to pursue size and weight reductions and low torque in axle bearings and constant-velocity joints and carry on with development of modular products, such as Intelligent In-Wheel units for EVs and electric actuator units.

\*Tribology: A science and technology that includes the study and application of mechanisms of friction, wear and lubrication.

### Technology Tree for Tribology



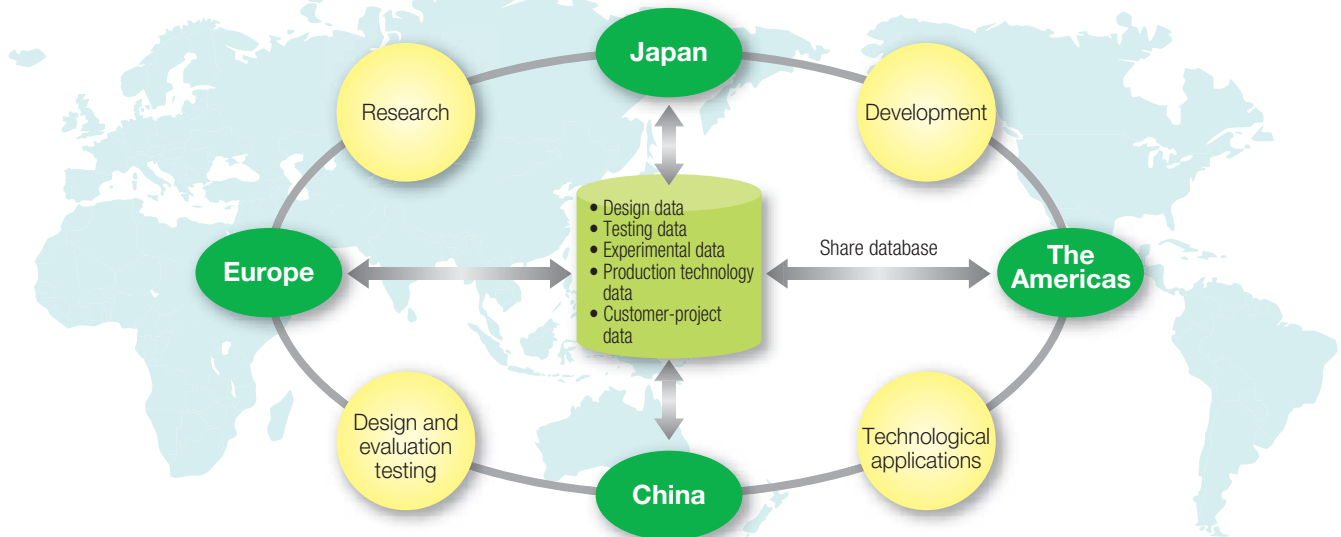
## “Reinforcement of the Global Technical Development System (4 Worldwide Bases)”

In April 2010, we began construction of the “NTN China Technical Center” (in Shanghai). Completion of the new center will result in a

global technology development system centered on development bases in four locations: Japan, the Americas, Europe, and China. We will take full advantage of this system to strengthen the technical services we provide customers in growth markets, including locally based, self-contained services.

### Global Technical Development System (4 Worldwide Bases)

Strengthen technical services for customers in growth markets, and strengthen local capabilities



#### Receipt of the Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology

Mr. Chikara Ohki, a supervisor at the Elemental Technology R&D Center, received the 2010 Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology for development of a high-performance bearing with enhanced crystal grain refinement, which is used mainly in automobile engines and dynamic valve mechanisms.



#### Receipt of the Gold Prize for Excellence in a Dissertation of the Japanese Society for NeuroEndovascular Therapy

Mr. Yoshitaka Nagano, a project manager in the Mechatronics Research Department of the New Product Development R&D Center, received the Gold Prize for Excellence in a Dissertation of the Japanese Society for NeuroEndovascular Therapy for a thesis on the development of a “Sensing system for cerebral aneurysm treatment” published jointly with representatives of the university that jointly developed the system.



#### Chairman Suzuki Awarded Honorary Doctorate by the Nagoya Institute of Technology

Chairman Yasunobu Suzuki has been awarded an “honorary doctorate” by the Nagoya Institute of Technology, his alma mater. Since joining NTN, Mr. Suzuki has worked to strengthen the development of products, equipment and marketing as well as significantly contributing to the expansion of overseas business through his experience in production, production technology and quality control. The Institute has recognized these achievements in their contribution to the development of human resources and educational research at the Institute. At the school’s recent entrance ceremony, Chairman Suzuki delivered a well-received address that touched on his broad range of experience.

Award ceremony: Mr. Takahashi, head of the Nagoya Institute of Technology (left) and Chairman Suzuki

