INTELLECTUAL PROPERTY AND R&D

MHI's Intellectual Property Activities Policy

The MHI Group's basic policy for intellectual property in fiscal 2012 is to promote assertive intellectual property utilization and to pursue more global intellectual property strategies and activities.

The utilization of intellectual property means building a portfolio of unrivaled intellectual property assets. The starting point for this approach is to conceptualize competition scenarios and utilization of intellectual property to MHI's advantage.

The pursuit of more global intellectual property strategies and activities, meanwhile, involves recognizing that MHI's future markets lie outside of Japan, and developing more carefully analyzed intellectual property strategies with particular emphasis on emerging markets, where long-term market expansion is anticipated.

Business: An Integrated Approach Linking Businesses, R&D and Intellectual Property

MHI's intellectual property activities are an integral part of its business and R&D strategies.

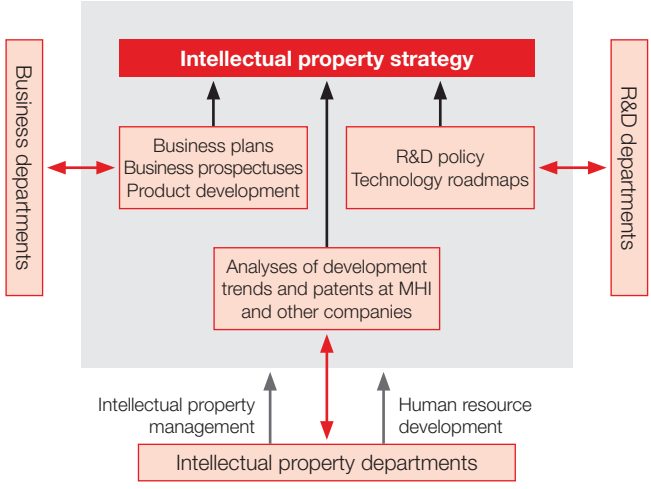
MHI has established a team made up of members from its business divisions (sales and design personnel) and R&D and intellectual property departments for each core, mainstay and new product line. These members share information from a wide variety of sources—business plans, business prospectuses, product development, R&D policy, technology roadmaps, and analyses of R&D trends and analyses of patents held by MHI and other companies—and the team of members works to formulate an optimal intellectual property strategy.

Amid dynamic changes, among them recovery from economic recession, the budding prominence of emerging markets, and reconstruction in the wake of the Great East Japan Earthquake, both the intensity of global competition and the importance of intellectual property strategies are on the rise. For MHI, bolstering its hand in intellectual property is now more important than ever. This requires business and intellectual strategies be fully integrated to enhance competitiveness. To this end, MHI is defining intellectual property strategies centered on the guiding policies of each business segment, with business and intellectual property departments working closely to implement these strategies. In parallel, the Intellectual Property Department at MHI's head office is now able to consolidate intellectual property strategies from all business segments. This structure makes it possible for the MHI Group to take full advantage of its comprehensive capabilities at any time.

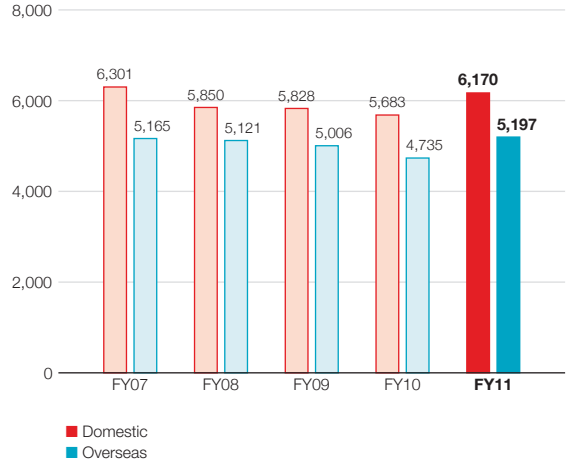
Research and Development Activities

The MHI Group maintains close cooperation between business headquarters and R&D centers, promoting robust research and development supporting future business expansion and greater product competitiveness in power systems, aerospace and other business fields.

In fiscal 2011, total R&D investment for the MHI Group was ¥121.4 billion, including ¥72.4 billion in expenses related to R&D under contract.



Number of Domestic and Overseas Patents



Principal R&D Activities by Business Segment

Shipbuilding & Ocean Development

- Development of large, high-performance cruise ships with energy-saving technologies that cut fuel consumption by over 10% and technologies that reduce labor needs by over 15%
- Development of technologies to broaden the scope of application and achieve higher performance for the Mitsubishi Air Lubrication System (MALS), which cuts CO_2 emissions by reducing friction resistance between ships and seawater

Power Systems

- Development of the J-Series gas turbine, a system boasting world-class output and world-leading thermal efficiency, with a turbine inlet temperature of 1,600˚C, that will contribute to realization of a low-carbon society
- Development of 7MW offshore wind turbines equipped with one of the world's largest variable-speed, hydraulic drives

Machinery & Steel Infrastructure Systems

- Development of technology for capturing CO_2 from coal-fired thermal power plant boiler flue gas as a means to help prevent global warming
- Development of high-performance, compact compressor trains and mechanical drive steam turbines for motors compatible with floating liquefied natural gas production, storage and offloading facilities

Aerospace Systems

- Development of the MRJ, a state-of-the-art regional jet featuring the world's highest level of operational economy and cabin comfort
- Creation of prototypes to demonstrate advanced technology, specifically small, ultrasonic aircraft offering outstanding mobility (including maneuverability never before possible in flight) and radar avoidance capabilities, as part of efforts to secure technology for future domestic fighter jet production

General Machinery & Special Vehicles

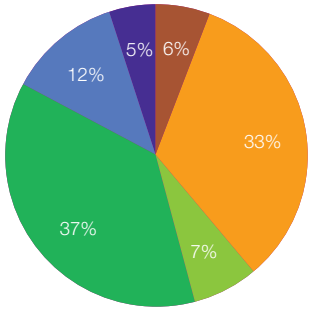
- Development of variable geometry (VG) turbocharger for regular and compact diesel engines offering high performance and high reliability at low cost
- Development of forklifts with radiation-shielded cabins for the removal of debris from the grounds of TEPCO's Fukushima Daiichi Nuclear Power Station

Others

- Development of 15 models in the SAISON series of HVAC units for stores and 9 models in the HYPERMULTI series of HVAC units for buildings incorporating high-efficiency compressors, meeting performance standards for 2015 stipulated by Japan's Act on the Rational Use of Energy ahead of schedule
- Development of "ZI20A," a machine enabling fast, high-precision grinding of a variety of gears, and incorporating newly developed processing methods making grinding of internal ring gears, external gears and stepped gears possible with a single unit

R&D Investment by Business Segment

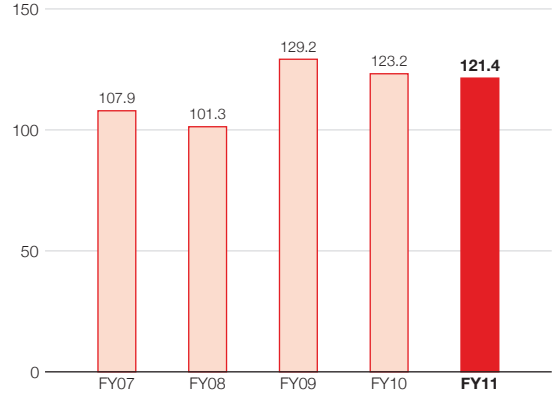
(FY2011)



Shipbuilding & Ocean Development	¥7.0 billion
Power Systems	¥39.7 billion
Machinery & Steel Infrastructure Systems	¥8.1 billion
Aerospace Systems	¥45.0 billion
General Machinery & Special Vehicles	¥15.0 billion
Others	¥6.4 billion

R&D Investment

(In billions of yen)



* Includes expenses related to R&D under contract.