

Research & Development

The Casio Group embraces the corporate creed of Creativity and Contribution. We engage aggressively in R&D activities with the goal of contributing to society through the development of creative products.

R&D Structure

Our R&D structure is comprised of our in-house Development Department, which is responsible for the fundamental research and elemental technology development that are used to support new businesses and long-term growth, and the development departments of our operating companies and affiliates, which oversee commercial development related to existing businesses. To create new core businesses, we renovated our R&D Center and established a new Business Development Center. This enabled us to concentrate new domains and establish a structure for the effective creation of new products based on the practice of selection and concentration.



Business Development Center (Hamura Technology Center)

TOPICS

Developing Learning Services and Dermoscopy Cameras for Dermatologists

In June 2015, Casio launched D'z IMAGE, a free cloud service for learning dermoscopy. This service teaches users how to conduct efficient dermoscopy examinations* by using imaging analysis functions that expose lesion structures and blood distribution. Since the launch, we have added various functions to enhance service content. Added content includes a diagnosis training function, which poses different questions on a daily basis based on diagnosis image records, and learning content for beginners.

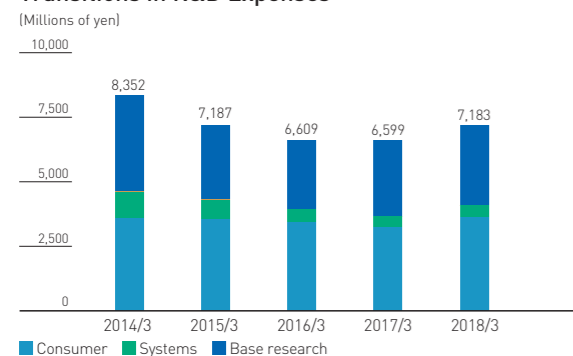
We are working in collaboration with a university hospital to develop a dermoscopy camera for dermatologists based on imaging technology, lighting technology, and image processing technology developed through our digital cameras business. We also are developing image management software that will enable images captured by the camera to be transferred, uploaded, and sorted automatically.

Additionally, we are developing a computer analysis support system for dermatology patients. We are aiming to build a service that uses image analysis technology based on machine learning to indicate potential illness names, which will support dermatologists using dermoscopy examinations to diagnose patients.

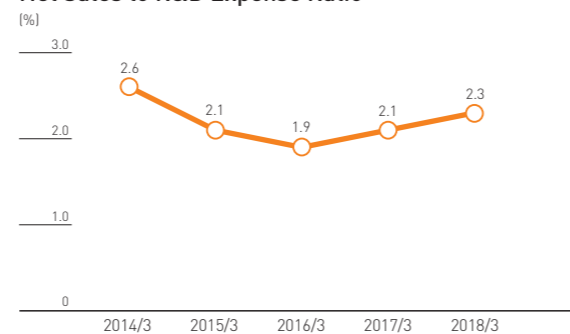
* Examination used to observe skin tumors, moles and other pigment lesions using a special magnifying glass called a dermoscope.



Transitions in R&D Expenses



Net Sales to R&D Expense Ratio



Intellectual Property

Casio conducts planned research and development to approach business from a medium- and long-term perspective and increase our technology management capabilities. We appropriately manage and utilize the results of R&D activities to convert these results to intellectual property that generates profits. We also view intellectual property as a valuable benchmark for assessing our corporate value and have established IP Goals to promote the effective utilization of intellectual property.

IP Goals

Casio works to enhance our IP position based on the following goals.

- Make Casio a leading company for IP.
- Use strong IP position to protect technology and products globally.
- Use strong IP position to ensure innovative technology and product development.

Patent Applications and Securing Rights

We are creating a patent network by filing and registering patents [selection and concentration] in core fields. We also work proactively to secure effective patents through IP quality improvements. Not limited to the USA, we conduct initiatives to file patents and secure rights on a global scale, including in China and other Asian countries.

Utilizing Intellectual Property Rights

We do not simply establish rights for our inventions. We work to secure business freedom (prevent aggressive actions by other companies) and secure profits through licensing to other companies (including cross licensing). We also use IP as a market engagement barrier to prevent competitors from engaging in similar businesses. Through the comprehensive use of IP, we work to ensure we maintain a competitive advantage. In particular, we deal with Casio counterfeit products swiftly and strictly.

Patent Technology Monitor System

To promote stronger business by enhancing our IP position, we assign a chief patent monitoring engineer to each busi-

ness division. Chief patent monitoring engineers are chosen for the advanced understanding of technology and their leadership skills.

Specific activities undertaken by chief patent monitoring engineers include the following.

- Draft patent activity plans and manage goals based on an analysis of self and competitor technology trends and development trends
- Uncover and upgrade inventions
- Evaluate patent applications, determine direction of patent rights activities based on business direction, and evaluate rights maintenance
- Research competitor patents, manage patent avoidance and patent risks
- Create new businesses based on IP

Invention Reward System

Since 1968, Casio has operated a reward system for contributions from employee inventions and creations. By increasing inventor/creator incentives, we establish an environment that motivates employees to challenge themselves in new technology development.

IP Education System

Casio conducts various IP education, including IP seminars to promote employee understanding of and interest in intellectual property. We also distribute information via our website (content on IP website) and use external educational institutions such as the Japan Intellectual Property Association and the Japan Institute for Promoting Invention and Innovation.

Protecting CASIO Brand Rights

Casio has acquired 1,674 trademarks in 187 countries and regions to protect the CASIO brand and ensure smooth global business activities.

Transitions in patent registrations

