

R&D Activities

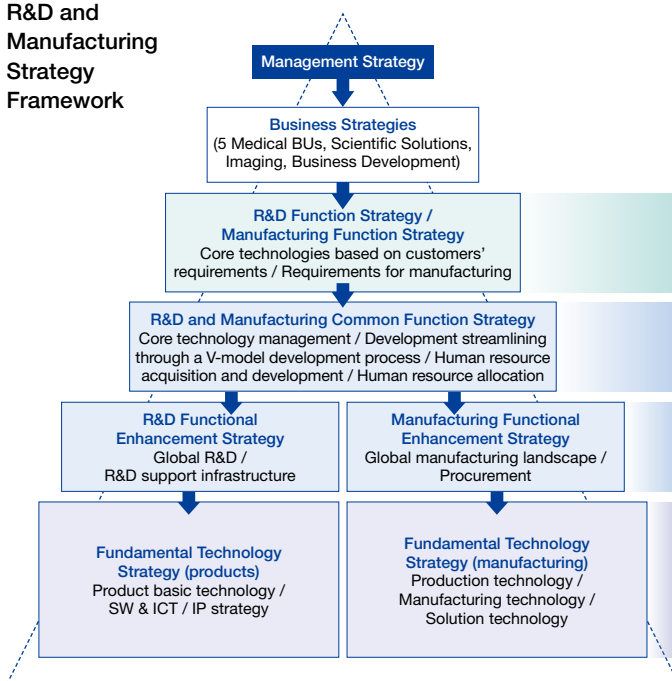
Product innovation at Olympus, and the eventual commercialization of all Olympus products, is rooted in the Company's policy of developing advanced technologies with the next 10 years in mind. New ideas and new technologies from Olympus lead to brighter futures for individuals and society.

Basic Policy

Olympus provides value in the form of early diagnosis and minimally invasive therapies through the supply of endoscopes, microscopes, digital cameras, and other proprietary developed products. We refer to the differentiated technologies that allow us to create such value for customers as "core technologies," and these core technologies arise from our core competencies in optical technologies, electronic imaging

technologies, precision technologies, and biological-based technologies. It is the goal of the R&D Group to support Olympus in creating value that exceeds customer expectations on into the future and in constantly providing competitive products and services. We will therefore continue striving to enhance and develop new core technologies.

R&D and Manufacturing Strategy Framework



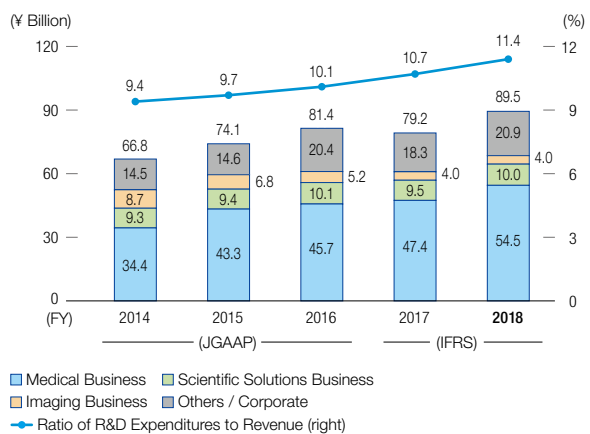
Relationship between R&D Strategy Framework and Management Targets

Strategy Framework	Relationship to Management Targets				
	Capital efficiency (Development efficiency improvement)	Profitability (Cost of sales ratio reduction)	Business growth (Sales expansion)	Business growth (Preparations for new businesses)	
Business field technology development function strategies	Medical		○	○	
	Scientific Solutions				
	Imaging				
Functional enhancement strategies		○	○		
Fundamental technology strategies	Basic technology	○		○	
	Production technology		○	○	
	Manufacturing technology		○		
	Solution technology	○			

Overview of R&D Activities

In fiscal 2018, total R&D expenditures increased 13.0% year on year, to ¥89.5 billion, and the ratio of R&D expenditures to revenue rose 0.7 percentage point, to 11.4%. The R&D function of Olympus aims to provide technical support to the Medical Business and other businesses and to continue to evolve the Company's core technologies. We conducted more than 60% of R&D expenditures in the Medical Business. These expenditures were primarily used to fund the development and subsequent launch of products such as ORBEYE, a surgical microscope with 4K, 3D capabilities, and Endocyto, an ultra-high magnifying endoscope that is capable of performing real-time imaging in the manner of a microscope down to the cellular level. In other businesses, we developed imaging processing technologies, including those using AI, and robotics technologies and engaged in other R&D activities to further our mainstay businesses.

R&D Expenditures / Ratio of R&D Expenditures to Revenue



Message from the CTO



Olympus will breed business innovation that gives form to dreams with new ideas and technologies to create value for customers the likes of which have never been seen.

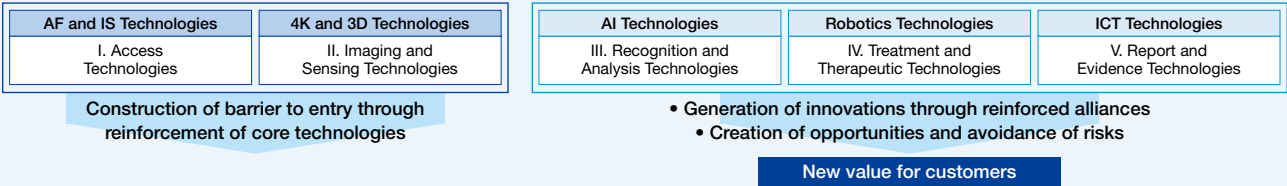
Haruo Ogawa
Chief Technology Officer, Head of R&D Group

Enhancement of Overall Level of Technology through Core Technology Monitoring

To support Olympus in enacting its management policy of “To be the greatest Business to Specialist Company,” we have defined five core technology groups based on customer workflows. We already boast strength with regard to the autofocus and other technologies contained in group I and the 4K and 3D technologies of group II. Groups III, IV, and V, however, are areas that require strengthening. We sought to facilitate efforts to accumulate such strength by constructing frameworks for monitoring

the numbers of core technologies and their levels. This undertaking was kicked off immediately following the establishment of 16CSP. We are implementing a PDCA (plan-do-check-act) cycle in accordance with this undertaking by assessing and analyzing our core technologies from the objective viewpoint of our competitors, formulating and implementing measures related to these technologies, and reviewing said measures. These initiatives are steadily generating results, and we are seeing an increase in the overall level of our core technologies and their competitiveness in groups III, IV, and V and in other areas.

Core Technology Groups Arranged from the Perspective of Workflows to Create Customer Value



Generation of Innovations in Step with New Technological Advancements

Various companies from other industries are advancing into the medical device market with the goal of capitalizing on its anticipated growth. Viewing the risks this situation creates as opportunities, Olympus established the Innovation Promotion Office to draft and execute innovation strategies. Moreover, we have identified three strategic themes for the Company to prioritize based on analyses of the operating environment and risks of the overall medical industry.

placed on healthcare professionals and offer greater ease in the procedures they must perform by simplifying cleaning and disinfection processes and providing means of confirming the effectiveness of these processes. In the surgical device field, we endeavor to offer solutions that assist surgeons in making decisions and conducting surgeries by using operating room systems integration, AI, and robotics technologies. With unprecedented ideas and bold strategies and initiatives, we will seek to generate innovations in step with new technological advancements.

We refer to these activities as X INNOVATION, or “cross innovation.” In the past, Olympus exercised self-sufficiency in the development of new products by leveraging the strengths of its core technologies. In the future, however, we will look to address social risks by providing solutions through collaboration with other companies.

I would now like to introduce the themes on which we will base such activities in the Medical Business. First of all, we will target the development of next-generation endoscopic examination workflows (Endoscopy Intelligent System). On this front, we will look to support endoscopic treatments with AI, ICT, and robotics technologies. We also aim to help reduce the burden

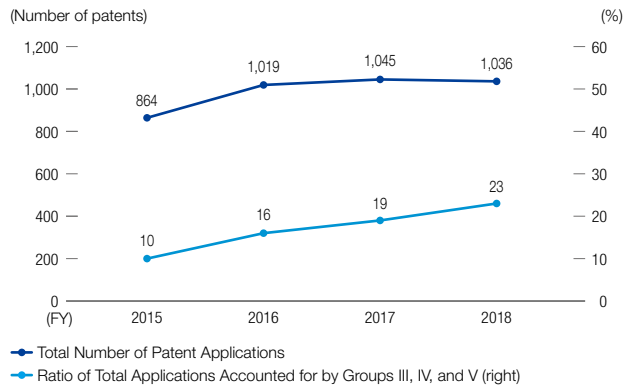


Intellectual Property Activities

Management of Intellectual Properties for Core Technologies

Olympus' core technology management strategy for research and development activities categorizes core technologies linked to customer value into five technology groups based on customer workflows. The Company's core technology management practices are designed to provide balanced support for five technology groups with regard to intellectual properties. In addition to acquiring intellectual property rights for technologies developed by Olympus, we implement other initiatives for creating a strong patent portfolio, which includes incorporating technologies developed by other companies. Of the five technology groups, we recognize that strengthening technologies related to groups III, IV, and V will be of particular importance to future growth. Accordingly, we are stepping up patent applications in these groups while advancing intellectual property strategies that coincide with the growth of our business.

Total Number of Patent Applications over Past Four Years and Ratio of Total Applications Accounted for by Groups III, IV, and V



Replacement of Patent Portfolio

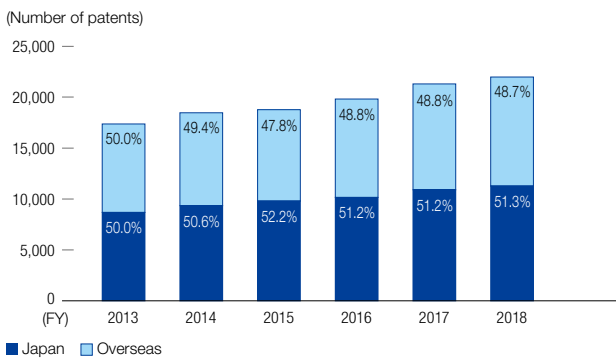
During fiscal 2018, the second year of 16CSP, the Company abandoned of approximately 3,000 of the roughly 20,000 patents it held on March 31, while applying for around 5,000 new patents. In this manner, we are moving ahead with the replacement of our patent portfolio by abandoning of those patents from which we cannot anticipate future synergies when considering the Company's strategies. By sustaining a sound patent portfolio while maintaining upkeep fees for intellectual

property rights at an appropriate level, we aim to support innovative R&D activities by Olympus.

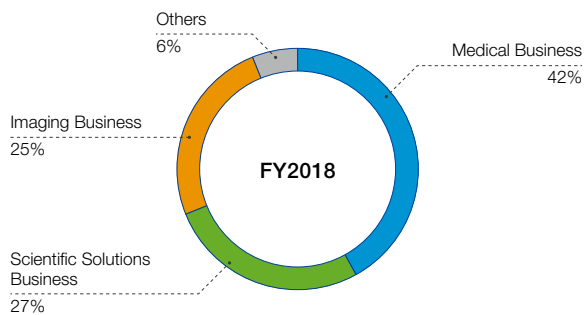
Patent Replacement Figures for Past Two Years

(Number of patents)	Held	Abandoned	New	Total
FY2016	19,825	—	—	19,825
FY2018	16,738	3,087	5,249	21,987

Number of Patents Held in Japan and Overseas



Share of Patent Applications by Business Portfolio



TOPIC

Olympus was selected as the 2017 Top 100 Global Innovators by U.S. investigation firm Clarivate Analytics (formerly the Intellectual Property & Science business of Thomson Reuters). Clarivate compiles this list by analyzing intellectual property and patent trends based on its patent data to identify the world's most innovative companies and institutions. Olympus has been selected for inclusion in each of the seven years since the inception of this list.

(Right) Hirofumi Hino
Representative Director,
Clarivate Analytics (Japan) Co., Ltd.
(Left) Masaaki Yamagishi
Division Manager,
Intellectual Property &
Licensing Division



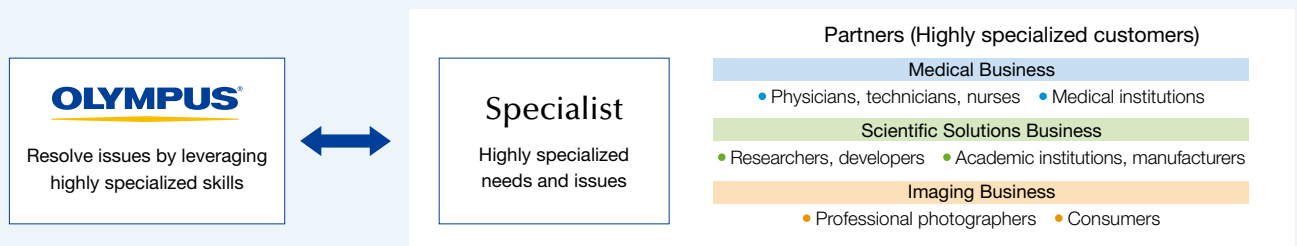
Partner and Customer Assets

Olympus aspires to be the greatest “Business to Specialist” Company. In order to accomplish this objective, we must view specialists, including healthcare providers, researchers, and other highly specialized customers and partners, as more than just the target of our business; we must view them as important management resources.

Reason for Positioning Partners and Customers as Important Management Resources

Olympus has committed itself to product creation activities based on an acute understanding of the needs of specialists. The strengths accumulated through this process have been utilized to swiftly supply solutions and services that accurately address

customer needs. Olympus will continue to contribute to a medical environment that cares for the health and wellbeing of people around the world while also creating value together with the specialists who are both its customers and its partners.



Creation of Value Together with a Partner and Customer

Together with Olympus, I seek to shape the future of medical practices, valuing the safety and peace of mind of patients throughout the entirety of this undertaking

I am involved in a project spearheaded by the Japan Agency for Medical Research and Development, an organization supported by the Ministry of Education, Culture, Sports, Science and Technology; the Ministry of Health, Labour and Welfare; and the Ministry of Economy, Trade and Industry. As part of my involvement in this project, I am working together with Olympus to develop an unprecedented new procedure known as Smart Endoscopic Surgery, a technique that utilizes artificial intelligence to realize higher levels of safety. Currently, physicians must call upon their own skills and experience when performing difficult or complicated procedures. With this next-generation surgery system, however, we will bring the surgical field into the future by providing a variety of safety control features. For example, monitors may be used to display where vessels lie hidden in adipose tissue or alarms can be sounded when instruments contact a part of the body that is not to be cut.

One reason doctors such as myself keep using Olympus products is that the Company makes products that match our needs. In addition, Olympus' ability to respond to our needs is extraordinary. In the past, I took part in a development project at Olympus for a new product to be used in endoscopic surgery for treating colorectal cancer. Such surgeries can require endoscopes to be manipulated in the small space inside the pelvis, which is said to be one of the most difficult surgery sites. If an ultrasonic coagulation and cutting device is used for surgeries in this site, it will produce mist that will eventually obstruct the field of vision. We asked Olympus to refine their product so that we could perform surgeries while eliminating this mist; Olympus was able to meet this request. In June 2018, I once again partnered with Olympus to establish the EndoALPHA Room at Oita University. This facility is equipped with the latest 4K, 3D fluorescence imaging and other technologies as well as a next-generation surgical environment in which two teams can simultaneously perform rectal cancer and esophageal cancer operations. Of course, all aspects of this facility have been designed with patient safety as the top priority. Improving surgery quality is, no doubt, a matter of importance. That being said, it is equally important to develop technologies that will respond to the needs that will emerge in the medical field five to 10 years down the line. I hope that Olympus will take a long-term perspective in its product development ventures while always incorporating the voice of the medical field.



Masafumi Inomata

Medical Department Professor
(Lecturer on gastric system and pediatric surgery), Oita University



EndoALPHA Room at Oita University

Industry-Academia-Government Partnership with Olympus to Train Physicians in Emerging Countries

I serve as an instructor in a program organized by the Japan International Cooperation Agency for training physicians in endoscopic surgery. Through this program, I collaborate with Olympus to perform annual training on safe surgical procedures and medical device use in Thailand, Russia, and other emerging countries. Emerging countries face a severe lack of endoscopists, and industry-academia-government partnerships are crucial to training physicians in such countries. This is because, in addition to capable instructors, such training requires quality programs, environments, and support systems. In this regard, Olympus provides training facilities and also has local personnel in emerging countries who, being well acquainted with the surgical facilities of the country and circumstances facing local physicians, are able to support instructors from Japan. I find this program to be most meaningful, as increasing the number of endoscopists and endoscopic surgeons in emerging countries will grant patients more opportunities to undergo minimally invasive surgeries.

Human Resources

Olympus views its human resources as the most important management resource to ensuring its sustained growth. We therefore respect the individuality of employees as we seek to become an organization that can furnish swift and systematic responses to changes in the operating environment.

Basic Policy Regarding Human Resources

Olympus faces a rapidly changing operating environment. In order for the Company to grow and return value to society, it is crucial that all employees pursue self-growth as independent and socially minded craftspeople to become able to respond appropriately to social change. We revised our corporate philosophy in May 2018 and clarified Our Purpose, which lays out the aims of the company, and Our Core Values, the values that all employees should share. We also defined Our Behaviors, guidelines concerning the concrete actions to be taken, to reflect Our Core Values in the activities of individual employees. We are implementing this new corporate philosophy in each

workplace, working together with human resource divisions on a global scale. In particular, we are focusing on holding workshops for managers, key figures in this promotion.

Olympus thus believes in the importance of respecting the individuality and unique skills of its employees and, trusting in their ambition and enthusiasm, accurately evaluating their achievements and providing appropriate rewards. Our human resource development approach places an emphasis on the growth of each employee, encouraging their independent and voluntary motivation for self-development.

Major Initiatives

1. Global Human Resource Strategy and Human Resource Development

Human resource divisions in each region are currently working together to establish a common global human resource structure and system to recruit and foster people who can work globally, and to utilize them in an optimum manner. We plan to reinforce our corporate competitiveness by establishing and implementing a worldwide human resource strategy.

As a part of this strategy, we offer the President's Award with the aim of motivating employees and invigorating our workplaces. The scope of the award has been broadened to a worldwide scale since last year, with the objective of strengthening the sense of Group engagement.



Ceremony for the President's Award

2. Promotion of Diversity

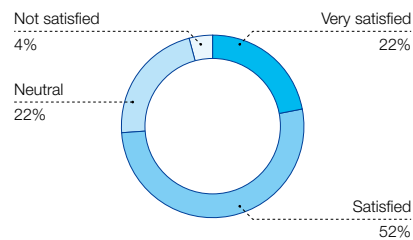
As one example of our efforts to promote diversity in Japan, we formulated an action plan as a general business operator in accordance with the Act on Promotion of Women's Participation and Advancement in the Workplace in April 2016. Based on this plan, we have expanded the range of employees to which our telecommuting system is available, and we are providing Work-Life Integration training for management with an eye to systematically cultivating female employees as well as management candidate cultivation training aimed at promoting female employees to management positions.

Training programs for female candidates for management positions have been continuing since 2016. The satisfaction level is also increasing. A number of employees reported that the training programs changed their viewpoint and behavior, and expressed positive comments, such as, "I started thinking about how to lead a team as a whole rather than keeping track of their business progress."

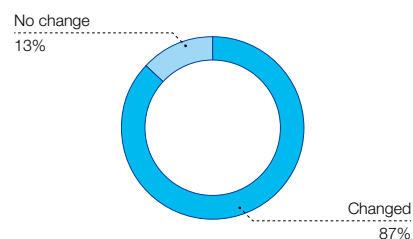
Overseas subsidiaries are also organizing environments in which diverse human resources can work actively. For example, Olympus Corporation of the Americas runs special interest groups called Colleague Affinity Networks (CANs) as a part of its diversity and inclusion program. The 10 CANs offer opportunities to increase

Survey Results for Female Candidates for Management Positions

More than 70% were satisfied with the training program



Nearly 90% felt they experienced changes in their viewpoint and behavior after the training program



understanding of the different backgrounds of employees working together as colleagues for Olympus. Each CAN connects people by providing seminars on intercultural understanding, career development support, mentoring and coaching, and support for working parents. For example, the Women's CAN proposed and implemented a Companywide "Integrated Schedule Options" program aimed at creating a better work-life balance and allowing employees to work from an alternative location or work alternative hours. Meanwhile, subsidiaries in Germany are receiving consultation from a third-party specialist firm on how to assist employees

3. Promotion of Health and Productivity Management

In Japan, Olympus' goal is to foster a corporate culture in which all employees are in good physical and mental health and are filled with vitality in order to help every employee enjoy a healthier and happier life. We are therefore deploying measures to support the health improvement efforts of employees through coordination with the Health Insurance Association. We also announced the Olympus Health Declaration in April 2018 to maintain and improve the health of our employees and their families. In addition to the Quit Smoking program, we are focusing on raising awareness about preventing lifestyle diseases and cancer prevention. We will also promote health maintenance and enhancement among employees, such as by recommending lifestyle changes, encouraging regular checkups and complete examinations for cancer screening, and advice when hospital visits are required. In addition, overseas subsidiaries are promoting employee health through various initiatives of their own. Examples of these initiatives include early cancer detection campaigns, lifestyle disease prevention and

seeking to balance their work with child-rearing or providing long-term care to family members. Subsidiaries in the United States and the United Kingdom have worked to address this issue by establishing daycare centers, each of which are attended by between 80 and 90 children, to offer aid to working parents.

Performance

	FY2016	FY2017	FY2018
Ratio of female managers	1.4%	1.9%	2.3%
Ratio of female full-time employees	13%	14%	14%
Ratio of female new graduate hires	19%	25%	17%

improvement seminars, establishment of physical and mental health consultation venues, and provision of financial aid for enrollment in fitness gyms and participation in sports activities.

Olympus Health Declaration*

To Contribute to Make People's Lives Healthier and Happier

Olympus corporate philosophy states that its purpose is making people's lives healthier, safer and more fulfilling. We value the health and energy of our employees and their families as the foundation for achieving this vision.

The Company is committed to instigating the following measures to promote healthy lifestyles among employees and families.

1. The Company believes that the health of its employees is an important management challenge and will create a corporate culture that gives the highest priority to occupational health and safety.
2. The Company will prepare a working environment in which employees can work in an active and healthy manner—both physically and mentally.
3. The Company supports the continuing health of each employee and their family in collaboration with the Health Insurance Association.

* Only applies to Olympus Corporation and subsidiaries in Japan

External Recognition

<Japan>

Inclusion in 2018 Excellent Enterprise of Health and Productivity Management—White 500 Selection

Olympus is strategically practicing health and productivity management with a constant focus on employee health management. As a result of these efforts, the Company was chosen for consecutive selection in the 2017 and 2018 Inclusion in Excellent Enterprise of Health and Productivity Management—White 500, which is jointly compiled by the Ministry of Economy, Trade and Industry, and Nippon Kenko Kaigi, out of recognition for the excellence it has exhibited in this area. Going forward, Olympus will continue to contribute to society by creating a workplace environment that helps improve the health and vitality of employees and their families and by supporting customer health through its business activities.



Acquisition of "Kurumin" Certification

Olympus has continued to establish action plans based on the Act on Advancement of Measures to Support Raising Next-Generation Children through which it has advanced various initiatives, including promoting Work-Life Integration, facilitating understanding in this regard, and introducing a telecommuting system. These efforts have been recognized by the Ministry of Health, Labour and Welfare, which has designated Olympus as a "Kurumin" certified company.



<Overseas>

Olympus Europa SE & Co. KG Received Award for Healthcare Efforts

Olympus Europa SE & Co. KG in Germany received the Corporate Health Award. The Corporate Health Award is known in Germany mainly for promoting corporate health welfare. The assessment for this award includes the company's approach to promoting the comprehensive health of its employees, continuous health promotion activities, welfare programs, and company management's commitment to the corporate health program. Out of 304 candidate companies across 12 industry categories, Olympus became one of the 12 companies selected for the award.

