

# 1 Global Manufacturing Strategy

## Development of Production Structure

The Manufacturing Function Strategy of 16CSP drives us to continue production structure reforms that extend to repair bases in order to improve quality, reduce costs, and otherwise augment manufacturing capabilities with eyes to 10 years from now. Based on the core competency of each manufacturing site, we work toward achieving globally optimized production\* to become the world's No. 1 medical equipment manufacturing group by globally exercising our competitive advantages in terms of products, technology, skills, management structures, human resources, and organizational strength.

- 1 Exhaustively strengthen integral manufacturing capabilities in Japan through integration of R&D and manufacturing functions to enhance No. 1 position in gastrointestinal endoscope field
- 2 Respond to need for cost competitiveness and swift product launches for single-use devices by expanding production of endotherapy devices in Vietnam and augmenting surgical energy device manufacturing capabilities in North America

\* Globally optimized production: Production at the most rational manufacturing site based on comprehensive judgments that take into account the costs, tax systems, legal systems, logistics, procurement, labor resources, site core technologies, and other characteristics of each region and country



### Increase production capacity at three Tohoku factories, principle medical equipment manufacturing sites, to cater to expanding Medical Business and raising production efficiency

In October 2015, Shirakawa Olympus Co., Ltd., completed the construction of its new facility a step ahead of the other two Tohoku manufacturing sites, creating a more efficient system by consolidating procurement, production, and medical equipment repair and service functions into a single site.



**Aizu Olympus Co., Ltd.**  
Development and manufacture of endoscopes and endoscope reprocessor

**Shirakawa Olympus Co., Ltd.**  
Development and manufacture of video system center (image processor), light sources, and ultrasound endoscopes

**Aomori Olympus Co., Ltd.**  
Development and manufacture of endotherapy devices

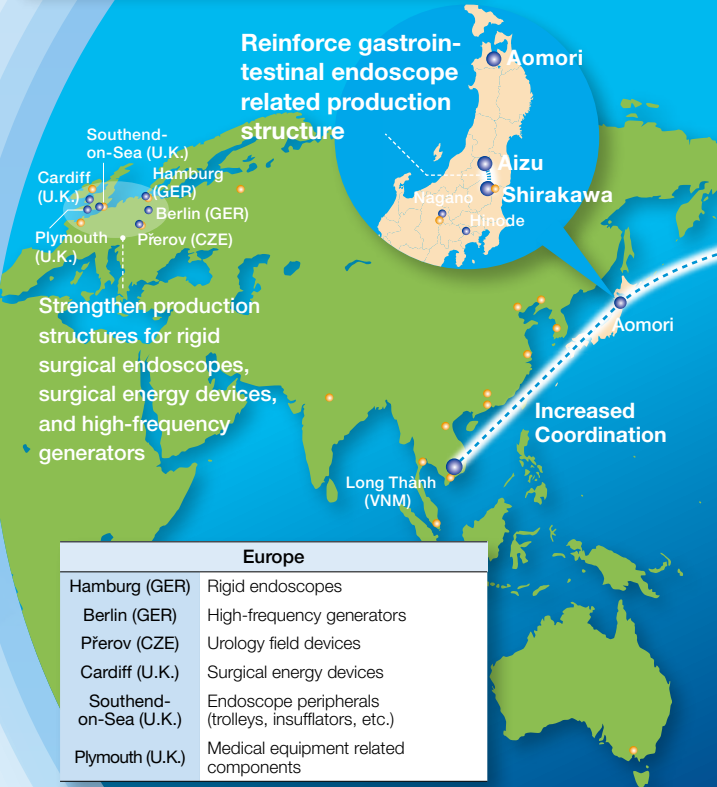


	Investment	Start of Expansion	Commencement of Enhanced Operations
Aizu	Approx. ¥10 billion	Mar. 2014	May 2016
Shirakawa	Approx. ¥10 billion	Nov. 2014	Oct. 2015
Aomori	Approx. ¥4 billion	Apr. 2015	Sept. 2016

Benefits of Redeveloping 3 Tohoku Factories	
Production capacity	30% improvement* <sup>1</sup>
Production efficiency	50% improvement* <sup>2</sup>
Business continuity plan measures	Establish manufacturing foundations to allow for continued supply after disasters

<sup>1</sup> Approx. 30% increase in total floor space  
<sup>2</sup> Efficiency measured as production volume per 1m<sup>2</sup> of floor space

Japan / Asia	
Aomori	Endotherapy devices, surgical energy devices
Aizu	Endoscopes, endoscope reprocessor
Shirakawa	Video system center (image processor), light sources, ultrasound endoscopes
Hinode	Production start-up and manufacture of new element products
Nagano	Medical equipment related components
Long Thành (VNM)	Endotherapy devices



Europe	
Hamburg (GER)	Rigid endoscopes
Berlin (GER)	High-frequency generators
Přerov (CZE)	Urology field devices
Cardiff (U.K.)	Surgical energy devices
Southend-on-Sea (U.K.)	Endoscope peripherals (trolleys, insufflators, etc.)
Plymouth (U.K.)	Medical equipment related components

● Medical Business Manufacturing Sites:

Japan 5 Asia 1  
 Americas 3 Europe 6

Medical equipment repair and service sites:

Approx. 200 worldwide

● Of which, major repair sites: 50 (improve repair and service QCD\* through coordination with manufacturing sites)

\* QCD: Quality, Cost, Delivery

# Optimization

## with Eyes to 10 Years from Now

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### Medical Business Manufacturing Sites

Americas	
Bartlett	ENT field devices
Norwalk	Base components
Brooklyn Park	Surgical energy devices

Increased Coordination

Brooklyn Park  
Norwalk  
Bartlett

### Develop business model centered on single-use devices

Under 16CSP, growing single-use device operations has been positioned as a priority strategy. In these operations, we will improve cost competitiveness while quickly starting up the production of new products to enhance our lineup and building a production structure that facilitates the shift from high-mix, low-volume production to mass production. At the same time, we will seek to establish the most ideal production structure based on considerations of the regions in which products will be used and the relationship between R&D and manufacturing functions. We will also increase our ability to respond to foreign exchange risks through these efforts.

#### Endotherapy Devices

The factory of Aomori Olympus Co., Ltd., will be positioned as our mother factory for starting up the production of new endotherapy devices and driving technological innovation. Meanwhile, we will transfer the production of products centered on devices requiring mass production to the Vietnam plant, which benefits from lower costs.

#### Surgical Energy Devices

At the Brooklyn Park plant, the construction of which was completed in April 2015, we will endeavor to boost production capacity and efficiency for surgical energy devices expected to see increased demand. We aim to enable this plant to practice in-house development and production. For this reason, marketing, R&D, and manufacturing functions will be integrated to create a system that allows the plant to conduct swift commercialization and cost reduction measures.



**Shigeo Hayashi**

Head of Manufacturing Group

Top priorities for the Manufacturing Group include achieving globally optimized production in response to production increases in the Medical Business and, during this process, building upon the core competencies of each manufacturing site and utilizing them to realize ideal production QCD. An example of core competencies in Japan is the processing of microlenses by Aizu Olympus Co., Ltd. We have already begun supplying factories in Europe with lenses manufactured at the Aizu factory. In order to realize true globally optimized production, it will be necessary to expand the scope of such inter-factory coordination from components to include units and actual products. For this reason, we will leverage the strengths of manufacturing sites in Asia, including Japan, the Americas, and Europe and conduct manufacturing while coordinating operations between these sites. At the same time, we will advance efforts to secure the necessary human resources at each site and improve technological and onsite capabilities on a global scale.

Our strengths in product creation lie in our technological and onsite capabilities. For example, the microlenses and other optical components used in the tips of endoscopes are difficult to process for other companies.

Olympus, however, boasts exceptionally high processing technologies in this area. With regard to our onsite capabilities, we will improve plant consulting and human resource development capabilities based on 5S (sort, set in order, shine, standardize, and sustain) and TPS methodologies. No matter how technologies may advance, it will also be people that discover issues at manufacturing sites and then pursue improvements, and it is these people that support our product creation activities. By forming global collaborative networks between the people at sites across the globe, we will strive to become the world's No. 1 medical equipment manufacturing group.



# 2 Initiatives for Accelerating Medical Business Growth in the United States

Todd Usen joined Olympus in June 2015 as the President of the Medical Systems Group in the United States (U.S.). Focusing on customers is his number one priority, and this year, he will lead new initiatives to ensure their needs are understood and being met. He will also focus on growing the medical business in the U.S. by leveraging existing strengths, identifying new opportunities in complementary specialty areas, and seeking opportunities for both organic and inorganic growth.

## Todd Usen

President, Olympus Medical Systems Group  
Olympus Corporation of the Americas



Could you please explain your background and your role at Olympus?

I joined Olympus Corporation of the Americas (OCA) on June 1, 2015, as the President of the Medical Systems Group in the U.S., but have worked in the medical device market for many years. Before my start with Olympus, I held the position of President of Orthopedics at Smith & Nephew, and I have also held major roles in endoscopy, including Senior Vice President,

Endoscopy for Smith & Nephew and Vice President of Sales for Boston Scientific.

Currently, the focus of my role is to lead the U.S. Medical Systems Group into its next chapter, continuing to grow the business and identifying new opportunities according to the Olympus 16CSP, five-year, medium-term management plan.



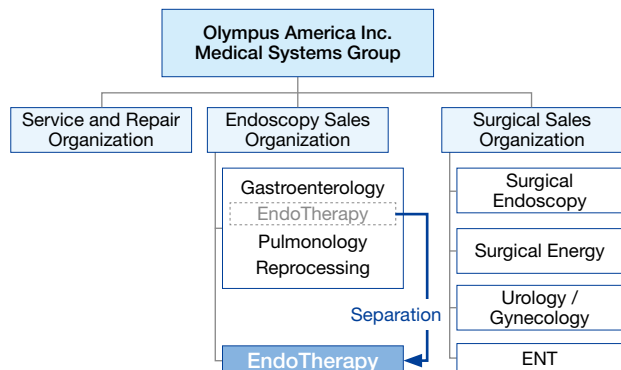
One year has passed since you assumed your current position. Presently, what are your thoughts on the American operations of the Medical Business and the issues needing to be addressed therein?

The medical business in the U.S. is currently responsible for the majority share of OCA's overall revenue and will continue to be the primary driver of long-term growth in the Americas. OCA's consolidated net sales rose 7% year-over-year in fiscal 2016, ended March 2016, mainly due to the medical business' strong performance.

Fiscal 2016 was an exciting year of renewal for the medical business in the U.S. We established new senior leadership and created standalone Sales organizations for both EndoTherapy (ET) and Gastroenterology and Respiratory (GI&R). This separation was a significant organizational shift which I believe will enable us to enhance and implement the clinical selling tools of ET; maintain the growth of EVIS EXERA III; continue to build strategic areas such as Respiratory, Endoscopic Ultrasound (EUS), and Cleaning, Disinfection,

and Sterilization (CDS); and ensure that our technologies continue to capture market share.

### Separation of Endoscopy Sales Organizations Implemented on April 1, 2016





# Opportunity

Fiscal 2016 also brought many exciting product launches, including the highly anticipated March 2016 release of Surgical Endoscopy's VISERA 4K Ultra High-Definition "Big Screen" imaging system. The Ear, Nose, and Throat (ENT), Urology /

Gynecology, and Surgical Energy groups also expanded their portfolios, and the DIEGO ELITE Multidebrider won the Edison Silver Innovation Award in the ENT Surgical Tools category.



## What growth strategies and initiatives will you institute with the aim of accomplishing the goals of 16CSP?

Focusing on our customers will continue to be our number one priority. We will seek new opportunities to ensure their needs are being met and will actively enhance the clinical value that our sales professionals offer.

In GI&R and ET, we will continue to concentrate on customer service, educational programs, clinical selling, CDS, as well as new technologies in the Pulmonary and Ultrasound spaces. We will identify key offerings, such as the EVIS EXERA III system, and push to increase market penetration. The Surgical portfolio is also positioned for significant growth, with major sales drivers including: innovations led by 4K in Surgical Endoscopy; Narrow Band Imaging technology; the DIEGO ELITE in ENT; the THUNDERBEAT Open Fine Jaw in Surgical Energy; and stone management devices and "glass and metal" imaging solutions in Urology. A sharp focus on rapid iteration within R&D will allow us to continually bring new, advanced technologies to market, further expanding our comprehensive product portfolio and enabling us to maintain our strong foundation in capital equipment.

As outlined in 16CSP, another focal point will be to evolve

from an equipment installation-based company to a procedure-based company, emphasizing disposable and device technologies.

From an internal perspective, I will continue to champion the effort to ensure that employees and groups across the organization are aligning their objectives and working towards achieving the same business goals, and most importantly, serving our customers to the best of our abilities.



4K surgical endoscopy system that supports surgery with high-resolution images



## What is your vision for the future of Olympus (medium-to-long-term goals)?

In alignment with our global mission to be the greatest "Business to Specialist" Company, we will concentrate on several key areas to meet this aim and continue to be recognized as a top-tier medical device company.

Firstly, we must continue to be customer-focused and truly understand our customers' needs. This will include a strong emphasis on education, both internally and for the HCPs who use our products. By actively teaching the medical community and inviting physicians and surgeons to train in our buildings on a regular basis, we will help to ensure that they possess the essential knowledge needed about our products to provide safe, effective treatment. Additionally, it will inspire conversation about procedural skills and the future goals and needs of medicine.

Fully exploring and establishing a presence in similar and complementary specialty areas as well as increasing our clinical knowledge will also be key initiatives. We will continue to look at adjacent markets and specialties where our technology will be a benefit to patients. Furthermore, both organic and inorganic growth will be imperative for our future success. We are positioned well for further expansion within the business and must now explore and realize growth from other opportunities in mergers and acquisitions and distributor partnerships, such as our recent agreement for the exclusive distribution of ENDOCUFF VISION®\*.

I look forward to driving these efforts and leading America's Medical Business into its next chapter with a bright future.

\* ENDOCUFF VISION® is only sold in the United States and Canada and is primarily used to secure a functional field of view when performing colonoscopies.

# 3

## Potential for Advancement of Endoscopic Surgery and Expectations for Olympus



Olympus developed the world's first practical gastrocamera in 1950. Since then, the Company has continued to develop new medical equipment together with the healthcare professionals that use this equipment. We asked Dr. Sumio Matsumoto, honorary director of the National Hospital Organization Tokyo Medical Center, about the needs of the medical field, where equipment is becoming more sophisticated on a daily basis, and what are expectations for Olympus in light of these needs.

Honorary Director, National Hospital Organization Tokyo Medical Center  
Member of the New Strategy Promotion Special Investigating Committee,  
Strategic Headquarters for the Promotion of an Advanced Information and  
Telecommunications Network Society  
Auditor, Japan Society for Endoscopic Surgery

### Sumio Matsumoto

1973: Graduated from Keio University School of Medicine  
1973: Trainee Surgeon, Keio University School of Medicine  
1980: Surgeon, National Hospital Organization Kanagawa Hospital  
1982: Assistant Professor in Surgery, Nagoya Health University School of Medicine  
1984: Assistant Professor in Surgery, Fujita Health University College School of Medicine  
1990: Associate Professor of Surgery, Fujita Health University School of Medicine  
1993: Professor of Surgery, Fujita Health University School of Medicine  
2000: Director, Banbuntane Hotokukai Hospital, No. 2 Teaching Hospital, Fujita Health University  
2005: Director, National Hospital Organization Tokyo Medical Center  
2014: Honorary Director, National Hospital Organization Tokyo Medical Center

### Operating Environment for Japanese Medical Equipment Manufacturers

Japanese manufacturing companies possess sophisticated technologies that are ideal for use in medical equipment. However, due to an insufficient ability to integrate these technologies into medical equipment, it is rare for products utilizing such technologies to appear on the market. As a physician, I am a bit dissatisfied with this reality. In 2014, the scale of the domestic medical equipment market was roughly ¥2.8 trillion\*. However, an excessively large portion of this amount was attributable to imported equipment, forcing medical practitioners like myself to rely on equipment made by overseas manufacturers.

In May 2014, the government of Japan enacted the Act on Promotion of Healthcare Policy, codifying the country's intent to actively promote the development of cutting-edge medical equipment. A November 2014 revision to Japan's Pharmaceutical Affairs Act further established the regulatory environment for this drive. I suspect that high expectations will be put on Olympus, a leading Japanese medical equipment manufacturer, with regard to applied research of medical equipment and the development of the industry.

\* Based on *Statistics of Production by Pharmaceutical Industry*, Ministry of Health, Labour and Welfare

### Development of Endoscopic Surgery Procedures

I was inspired to begin performing endoscopic surgeries by a video session on gallbladder removal using surgical endoscopes during an international conference on gastrointestinal surgery held in Toronto in 1989. After returning to Japan, I took up the challenge of training in these surgeries. I performed my first local excision of an early gastric carcinoma in 1990 and then succeeded in removing a gallbladder in 1991. As surgeons, we were particularly

impressed with how little post-operative pain is felt by patients that have undergone endoscopic surgery. The benefits of endoscopic surgery include the fact that it entails less pain, is less invasive, and allows for quicker recovery. The world's first endoscopic surgery was conducted about 30 years ago, and since then the number of these surgeries has risen rapidly. You could even say that these minimally invasive therapies caused somewhat of a revolution.

Today, nearly 200,000 endoscopic surgeries take place in Japan each year. However, this number still does not represent a particularly large portion of the total number of disease cases. Should technological progress give rise to endoscopes and endotherapy

devices that allow for surgeries to be performed more safely, I expect that a greater number of surgeons would switch from open abdominal and chest surgeries to endoscopic surgery. This shift could then lead to a sharp increase in the numbers of these surgeries.

## Benefits of Advances in Medical Equipment

The resolution of endoscopy images is getting much better. At Tokyo Medical Center, the difference between analog images and HD images has resulted in a reduction in surgery time of about one hour when conducting sigmoidectomy, a representative example of endoscopic surgery. Indeed, there is a clear link between being able to view higher resolution images and shortened surgery times. Meanwhile, the depth of information generated by 3D endoscopes has made it significantly easier to train in these procedures, particularly among younger surgeons, who pick up these techniques at a startling pace. I anticipate that the progress in imaging technologies will make it possible to display details that are invisible under current technologies, thereby expanding the range of endoscopic surgeries that can be performed while increasing safety and furthering education on these surgeries. From Olympus, as the Company is already offering 4K endoscopes with resolution exceeding HD, I hope to see the early release of 4K

endoscopes with 3D technologies.

The advancement of therapeutic devices makes large contributions to shortening surgery times. When endoscopic surgeries first emerged, it was difficult to treat bleeding, and surgeries could prove exceptionally stressful for surgeons as a result. Accordingly, I was very impressed with how easy it became to stop bleeding after the advent of ultrasonic coagulation and cutting systems. Olympus launched an ultrasonic surgical system in 1990, and it recently released an energy device that integrates both advanced bipolar and ultrasonic energy. When I tried this integrated energy device, I was able to perform surgeries faster than when using other products, and the strain on both the patient and myself was significantly lower.

Looking forward, I hope that medical equipment manufacturers will work to make endoscopic surgeries safer while also developing equipment that contributes to even shorter surgery times and further reduced burdens on both patients and surgeons.

## Expectations for Olympus

In 1992, I was approached at a conference by a member of the Olympus development staff, who proposed that we work together to develop equipment that resolves the issues faced in endoscopic surgery. This encounter marked the start of my involvement in the development of various pieces of medical equipment. It was in 1998 that Olympus established an organization known as the Endoscopic Surgery Liaison Committee to serve as a forum for discussion between physicians working in the medical field and development staff members. A number of subcommittees in a variety of areas were formed under this committee, and I took part in many of them. Unfortunately, many of the ideas raised at this forum were never incorporated into actual products, but I was nonetheless impressed by the committed efforts on the part of Olympus to provide answers to the needs of physicians.

Looking ahead, I think it will be important to respond to such trends as the development of robotics technologies and the spread of the Internet of Things, otherwise known as IoT, throughout society. Robotic assisted surgery, for example, not only reduces the physical burden on the surgeon, it is also said to shorten the time taken for surgical training compared with that for laparoscopic surgery. Olympus has made prototypes of small-scale robotic assistance systems that use endoscope

holders to prevent disruptions due to the surgeon's hands shaking and incorporate forceps with multiple degrees of freedom and forceps holders. I understand that the development of such systems will continue to be advanced. Olympus possesses superb technological elements. In the future, I hope that the Company will enhance its ability to integrate these technologies and work to develop more user-friendly equipment. In regard to IoT, image deep learning technologies are advancing, as indicated by the ability of an artificial-intelligence program to beat professional Go players at their own game. As Olympus is a company that uses endoscopes to capture images, I suspect that such technologies could be used to support diagnoses. The Company might want to consider acquiring human resources with IoT specialties or collaborating with companies that possess IoT technologies.

As advances in medical equipment make endoscopic surgeries safer and easier to perform, more and more surgeons will switch over from open abdominal and chest surgeries, resulting in growth in the endoscope market. My expectations for Olympus are for it to develop equipment that is friendly to both patients and physicians and for it to claim a prominent position on the global stage where it can stand proudly as a Japanese medical equipment manufacturer.