Diagnosis Field Activities Record, examine, utilize

# Medical Systems: Medical IT-Centered Growth Driver of Healthcare Business Field

Centered on medical IT, the medical systems business that is responsible for the diagnosis field develops and supplies a wide lineup of products and services—including X-ray imaging diagnostic systems, ultrasound diagnostic equipment and endoscope systems—to meet needs in a variety of medical fields. Associated with the increased performance of equipment, clinical information is now becoming big data. In addition to managing this data, Fujifilm is promoting the usage of data for analysis and for regional collaboration to create added value, including diagnostic support for doctors and medical efficiency.

## In-Vitro Diagnosis (IVD)

Fujifilm supplies point-of-care testing (POCT)-type* in-vitro diagnosis systems that use specialized equipment to examine constituents and measure the amount of virus, with blood or other samples dropped into reagents.

* A checkup that is undertaken in a place that is near the patient, such as a consultation room or hospital ward bedside.

### *FUJI DRI-CHEM IMMUNO AG1*

An immunity diagnostic system capable of detecting influenza virus to a high degree of sensitivity. Enabling the detection of negligible amounts of influenza virus by the application of silver halide amplification technology utilized in the photo developing process, the proprietary technology is highly regarded, and deliveries of the system to medical organizations are under way.

## Endoscopes

Fujifilm supplies products that target not only the early detection and treatment of diseases such as cancer but also the reduction of the physical burden on the patient. Such products include the *LASEREO* endoscope system equipped with a laser light source, transnasal endoscopes that place less physical burden on the patient, and double-balloon endoscopes.

### *LASEREO*

Drawing on laser control technologies accumulated over many years in the photography and medical fields, the *LASEREO* system controls two laser lights of different wavelengths. Combining proprietary image processing technologies enables the examination of imaging that highlights mucosal surface microvessels and thereby realizes enhanced clarity in the areas of pathological change, such as cancer.

## Medical IT

A picture archiving and communication system (PACS) supplied in the medical IT field, stores on a server images taken by medical image diagnostic equipment—such as CT, MRI, and CR—so that doctors can interpret and diagnose these images on a terminal in a hospital. Leveraging proprietary image processing technologies and knowledge relating to diagnostic imaging that has been accumulated over many years, Fujifilm's *SYNAPSE* Series provides a high-quality image suitable for diagnosis and also realizes high operational stability. The *SYNAPSE* has the top share of the market in Japan and ranks second in terms of global market share.

### Utilizing Data to Support Diagnosis and Streamline Medical Care

Putting to practical use its proprietary *Image Intelligence*™ image processing technologies gained from its photographic, medical, and printing businesses, Fujifilm supplies systems that lead to diagnostic support and increased efficiency in medical care.

### *SYNAPSE Case Match* Content-Based Image Retrieval System

Utilizing artificial intelligence technologies, the *SYNAPSE Case Match* system retrieves past medical cases from a database, instantly searches for cases in which the features of pathological changes are similar, and displays them in similar order. The system supports doctors' image diagnoses that call for accuracy and speed.

### *SYNAPSE 3D* 3D Image Analysis System

This system analyzes 3D images to render high-precision 3D images from the 2D cross-sectional images provided by, for example, CT and MRI. Bringing to fruition the highly accurate automatic rendering of various organs and blood vessels, the system contributes to easing the burden of not only doctors' interpretations, which are increasing in step with growing amounts of image data, but also radiologists' creation of 3D images.

### *SYNAPSE VNA* (Vendor Neutral Archive)

SYNAPSE VNA

In hospitals, each treatment department uses different systems to manage a variety of clinical information, such as CT and MRI diagnostic imaging and video of endoscopic tests. In recent years, however, doctors have been calling for systems capable of referring to various types of information and usage of it for comprehensive diagnoses. In response to these needs, Fujifilm provides the *SYNAPSE VNA* integrated archive system that is capable of the centralized management and storage of clinical information. In 2015, Fujifilm made TeraMedica, Inc., a consolidated subsidiary. Having become the leading company in the VNA market, TeraMedica has installed more than 300 of its VNA systems in hospitals around the world.

**Special Features of *SYNAPSE VNA***

- Enables users to refer to the hospital's in-house clinical information supplied from each department, and makes it possible to list, by patient, information from multiple departments
- Able to consolidate and store clinical information, contributes to easing the burden from the labor and cost aspects in moving needed data at times of system upgrades
- Enables clinical information from several facilities to be centrally managed under common rules, utilization even at times of regional medical collaboration is anticipated

## X-Ray Imaging Diagnostics

Fujifilm launched *Fuji Computed Radiography* (*FCR*), the world's first digital X-ray imaging diagnostic system. Centered on digital radiography (DR)-type systems that convert X-ray energy directly into an electrical signal and are thus capable of displaying captured images more quickly, Fujifilm is currently leveraging its long-established, advanced image processing technologies and supplying systems that display the advances made in lowering radiation dosages as well as in image quality and compactness.

### *FDR D-EVO II*

Realizing low radiation dosages and high image quality, this is a cassette-sized piece of DR-type digital X-ray imaging diagnostic equipment. Capable of taking images with small amounts of radiation due to the installation of noise reduction circuitry, *Virtual Grid* image processing software decreases the scattered ray effect* generated inside the body when taking an image and dispenses with the previous need for a heavy metal filter to prevent scattering, thereby making it easier to take an image.

* X-rays that are irregularly reflected by a variety of substances inside an object when transmitted through that object.


## Ultrasound Diagnosis

While leveraging the synergies between Fujifilm's image processing technologies and the technologies to produce small sized, robust devices of SonoSite, which became a consolidated subsidiary in 2012, as well as both companies' sales channels, Fujifilm is working to expand sales in the growth market of portable ultrasound equipment.

### *SonoSite iViz*

*SonoSite iViz* is a compact, lightweight, tablet-type piece of ultrasound image diagnostic equipment. In addition to being easily carried on doctors' hospital rounds, its excellent portability means that *SonoSite iViz* can be utilized in other situations, such as home care as well as in emergency and critical care, and supports high-definition image quality.