

Research and Development

Technological Background to Support a Full-Scale Move into Pharmaceuticals Business

Our Technological Background and Reasons for a Move into Healthcare Business

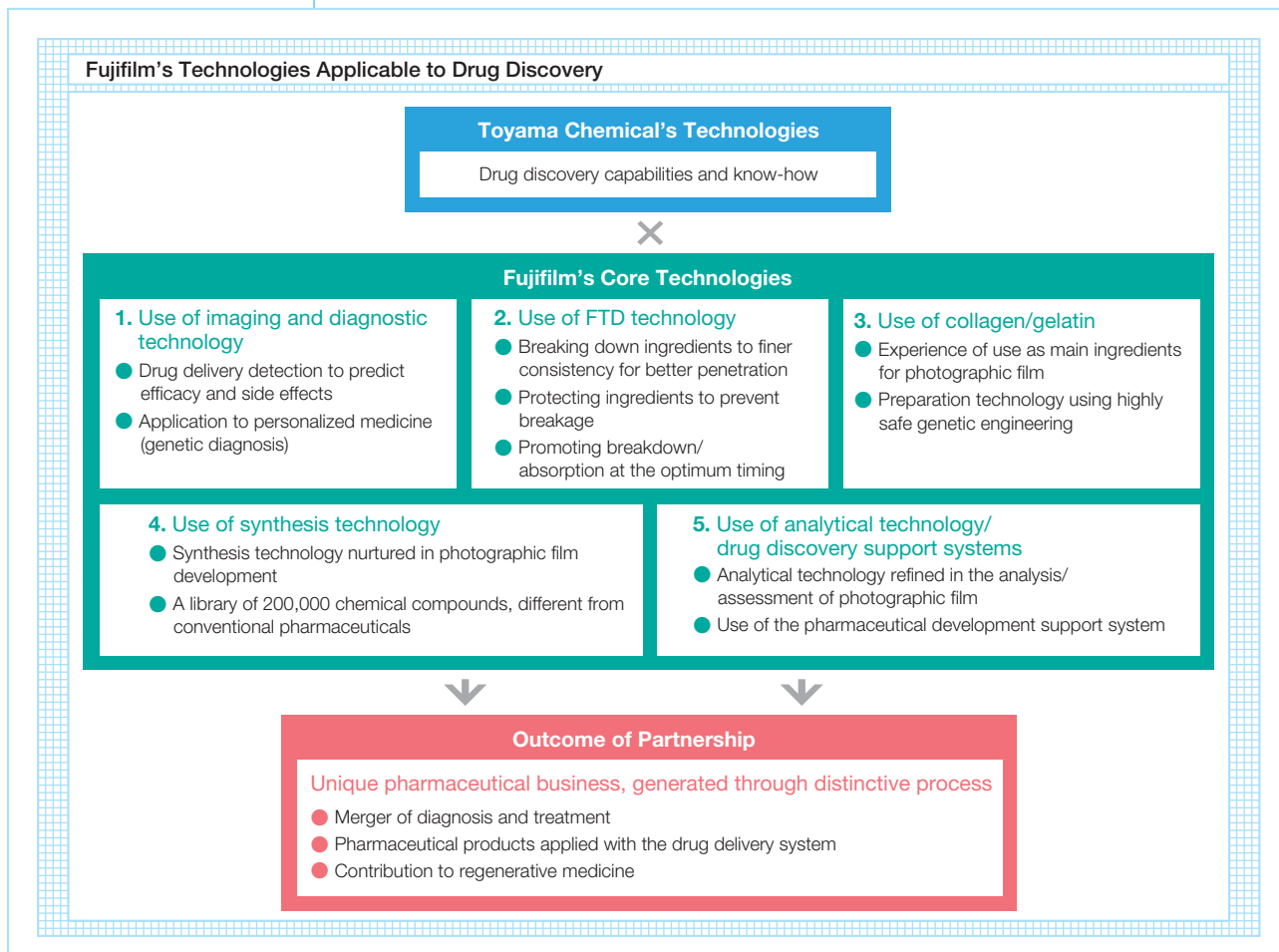
The Fujifilm Group has a broad spectrum of fundamental technologies such as thin-film formation and processing, organic materials, inorganic materials, optics, analysis, imaging, and software technologies, which were cultivated in fields including photosensitive materials and xerography. Taking advantage of these fundamental technologies, the Company has accumulated diverse core technologies that cover fine chemicals, electronics, mechatronics, and software.

To pursue our corporate philosophy of using leading-edge, proprietary technologies to help enhance the quality of life of people, we placed the Medical Systems/Life Sciences business as a potential pillar for realizing growth toward our “Second Foundation.”

Fujifilm has more than 70 year’s experience in providing X-ray films and has leveraged its unique imaging technologies and M&A transactions to expand the scope of its diagnostic business into such fields as sonography, endoscopy, and nuclear medicine examination.

Fujifilm’s developments in photography have also enabled us to amass significant technological assets in the fields of fine chemical and fine chemical processing technology. For example, the dye-forming couplers used in photographic materials have a complex molecular design that incorporates a number of other characteristics besides their dye-forming functions, as well as a high level of organic synthesis technology that precisely controls their reaction. In addition, through the analytical valuation of photosensitive materials, Fujifilm has further increased the sophistication of its technologies for the analysis of reaction processes and has achieved an extremely high level of technological expertise in this area.

In 2006, making full use of the Group’s sophisticated antioxidation technologies, unique FTD (Formulation, Targeting and Delivery) technologies, and collagen research, we supplemented our existing operations related to “diagnosis” with the addition of “prevention” operations centered on newly launched functional cosmetic and internal care products. In the

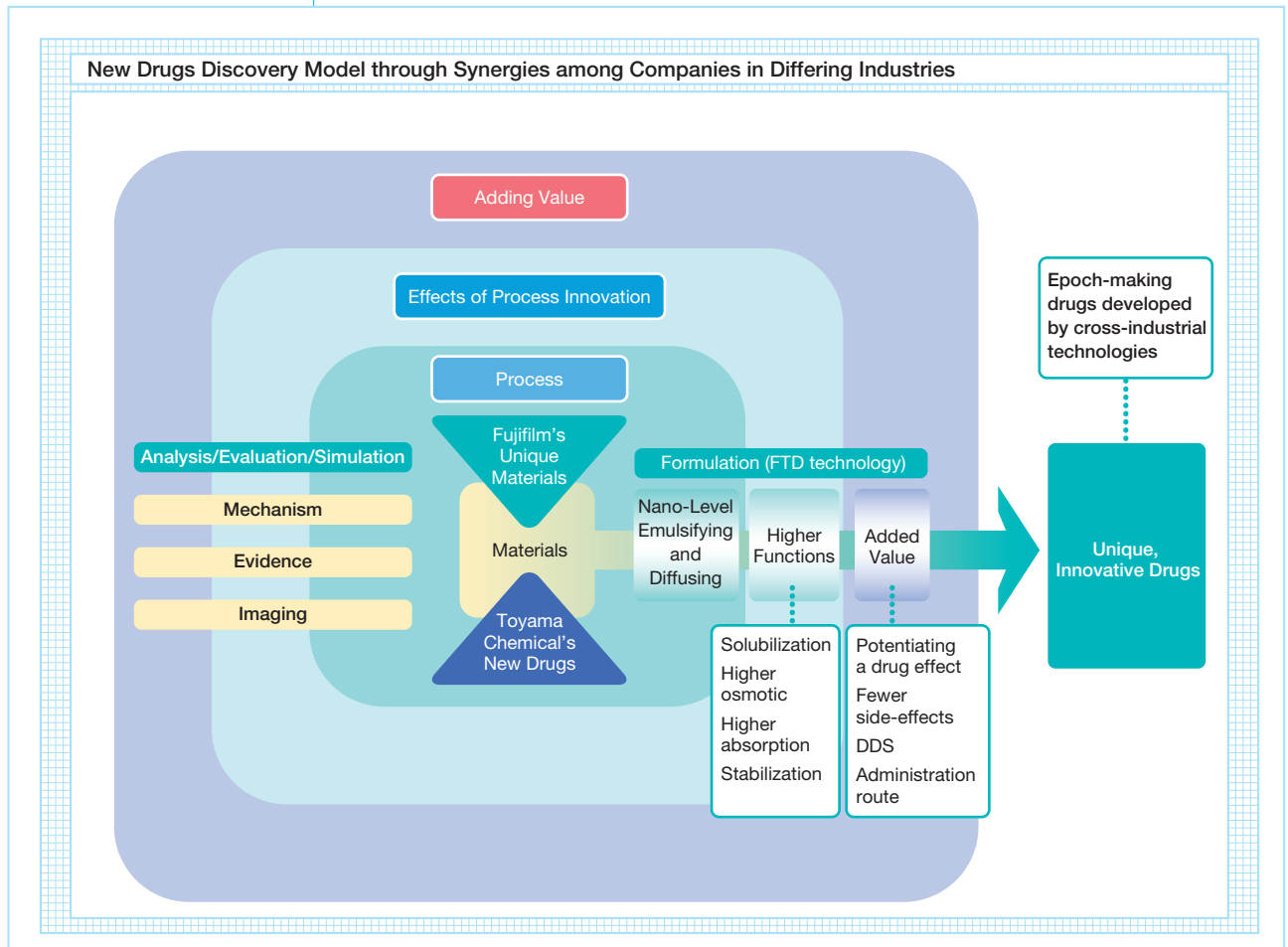


**Technological Synergy (1):
Discovering new drugs
through collaboration
among companies in
different industries**

same year, Fujifilm consolidated FUJIFILM RI Pharma Co., Ltd. (previously Daiichi Radioisotope Laboratories, Ltd.), a leading manufacturer of radiopharmaceuticals. Moreover, Fujifilm has taken its first step into the “treatment” business by investing in Perseus Proteomics Inc. Perseus Proteomics is a pharmaceutical venture that has developed nuclear hormone receptors and is the only company in the world that holds licenses for all 48 types of anti-nuclear receptor antibodies.

Fujifilm also made a full-scale entry into the pharmaceutical business as a result of acquiring shares of Toyama Chemical Co., Ltd.,. By combining Fujifilm’s technological expertise in organic synthesis technologies and analysis technologies with Toyama Chemical’s proven drug discovery capabilities, Fujifilm is working to expand its pharmaceuticals operations by discovering new drugs through collaboration among companies in different industries.

The FTD concept refers to the processes of formulating ingredients and materials to enhance their functionality, targeting the location to be addressed by formulations in fresh and stable states and delivering appropriate doses of the formulations to the targets at the appropriate times with sustained efficacy. This includes the use of nanotechnologies for dispersing materials into extremely minute size and stabilizing them and is one of the strongest components of Fujifilm’s technology base. For example, Fujifilm is applying FTD technology to the development of an anticancer drug in collaboration with the U.S. bioventure Cangen Biotechnologies. Specifically, it is taking an existing anticancer treatment and coating it with a genetically engineered gelatin that is then directly administered to the site for cancer of the head and neck. In this way, the Company is working to create a revolutionary drug delivery system (DDS) that will control the release of the anticancer drug.



**Technological Synergy (2):
Revolutionizing the new
drug discovery process**

FTD technology enables an approach to drug discovery that has seldom been used in the pharmaceuticals industry until now. For example, FTD will enable the use of nanotechnology to develop drugs that can be efficiently and directly delivered to the affected part of the body and permit multiple types of drug delivery, not only through injection, but also orally. In addition, by reexamining active ingredients whose development was previously avoided due to insolubility or lipid solubility, Fujifilm has been able to expand its drug development opportunities and maximize the value of its drug pipeline.

In these and other ways, Fujifilm is striving to realize a drug discovery business model based on synergies among companies in differing industries giving birth to new pharmaceutical products by combining its own unique materials with Toyama Chemical's excellent drug discovery capabilities and its own innovative analysis technologies and FTD technology.

New drug development requires a lengthy R&D period. Pharmaceuticals companies must invest heavily in R&D over long periods of time. In addition, they must also grapple with such issues as a diminishing new drug pipeline and the low success rate of clinical trials.

Fujifilm boasts a library of some 200,000 compounds developed through its photographic materials business and has acquired superlative organic compound formulation expertise. Compounds synthesized as photographic dyes have, in some cases, become potential new drugs with anticancer effects. By undertaking a full-scale pharmacological screening of its compound library in conjunction with Toyama Chemical, Fujifilm has the potential of discovering a number of new drug compounds, which, in turn, could help bolster Toyama Chemical's drug pipeline

By building on its organic compound synthesis expertise, Fujifilm is working to control drug efficacy and toxicity by altering compound characteristics in hopes of increasing the accuracy of its drug discovery efforts.

In pharmacological screening, by taking advantage of its analysis technology and its wide range of imaging expertise, which includes radioisotopes, fluorescent reagents, and x-ray sensors, Fujifilm expects to increase the success rate of its clinical testing efforts.

In this way, Fujifilm and Toyama Chemical, which possesses superior drug discovery capabilities, are well-positioned to take advantage of major synergies in the Medical Systems/Life Sciences market targeted by Fujifilm.

Over the medium to long term, Fujifilm plans to accelerate the development of drugs through these synergies, such as its influenza treatment T705, rheumatoid arthritis treatment T-5224 (AP-1 inhibitor), and Alzheimer's disease detection agent T-817MA, enabling the Company to bring these drugs to market at an early date.

In the case of T-705, the use of proprietary technology for mass production (which has been an issue for competing drugs) should allow Fujifilm to use its leading-edge expertise to contribute to society by helping to prevent a pandemic of current worldwide concern.

**Toyama Chemical's Pipelines
Overseas**

(As of May 2008)

Stage	Development No.	Therapeutic Category
Preparing to refill	T-3811	New-type quinolone synthetic antibacterial agent Granted Schering-Plough (Worldwide except Japan, South Korea and China), Dong-A Pharmaceutical (South Korea)
Phase II	T-817MA	Treatment for Alzheimer's disease Preventing neurodegeneration induced by Amyloid-b protein In-house development
Phase I	T-705	Antiviral agent (Anti-influenza virus agent) In-house development
Non-clinical studies	T-5224	Antirheumatic agent (AP-1 inhibitor) Granted F. Hoffmann-La Roche

Japan

Stage	Development No.	Therapeutic Category
NDA filing	T-614	Antirheumatic agent A disease modifying anti-rheumatic drug (DMARD)
	YP-18	Penicillin formulation combining PENTCILLIN and β -lactamase inhibitor Collaborative research and development with Taiho Pharmaceutical
Phase III	T-3262 10% fine granules	Oral quinolone synthetic antibacterial agent OZEX fine granules for children
	T-3762	Injectable quinolone synthetic antibacterial agent
Phase II	T-705	Antiviral agent (Anti-influenza virus agent) Potent in mouse infection models of H5N1 avian influenza
	T-5224	Antirheumatic agent (AP-1 inhibitor) Potential of becoming a curative treatment for rheumatoid arthritis
Phase I	T-3811	New-type injectable quinolone synthetic antibacterial agent Different from conventional quinolone antibiotics Good oral absorption and tissues distribution
Non-clinical studies	T-1106	Antiviral agent (Anti-hepatitis C agent)
	T-2307	Antifungal agent

The Fujifilm Group is striving to promote R&D activities in order to pursue growth in priority business fields and new business development.

The Fujifilm Group has a wide range of fundamental technologies such as thin-film formation and processing, organic materials, inorganic materials, optics, image and software. Today, we are promoting research and development in priority business fields—highly functional materials and devices, medical system/life science, optical devices, graphic arts, and documents—using product design technologies that combine these fundamental and core technologies. We are also pursuing the creation of new businesses that will play a leading role in the future.

