Core Competence: A Broad Range of Original Technologies

Through the development of hematology equipment, Sysmex has established strengths in the area of sensing technology – a combination of various electrical, mechanical, biological, chemical, data processing and other technologies – as well as biology and software development. The Company’s greatest asset is its ability to create an optimum balance between these advanced technologies in order to develop products that meet customers’ needs, such as instruments, reagents, and the Laboratory Information System (LIS).

In addition, Sysmex is contributing to improving the overall efficiency of the increasingly complex testing environment by integrating a diverse range of specialized technologies. The Company has expanded its business to encompass systemization of the entire testing laboratory, including a transport system for lab results and a data management system, in order to provide total solutions that help customers identify and resolve problems.

IT Development: A Global Development Organization

Medical institutions in advanced countries are pursuing improvements in the efficiency and quality of care. The use of information technology will be crucial in resolving these issues.

In response, Sysmex is moving forward with the global development of LIS, which links diagnostic information received from various instruments into a network so that it can
In March 2003, Sysmex signed an agreement with the University of Texas M.D. Anderson Cancer Center, the leading cancer hospital in the United States, to begin clinical study of Sysmex's cell cycle profiling technology for determining the effectiveness of anti-cancer drugs that would enable individualized chemotherapy. Sysmex's Central Research Laboratories were the first to create a cell cycle profiling system, which simultaneously measures expressions and activities of 20 parameters of cell cycle machinery molecules. Sysmex's cell cycle profiling technology has already proven successful in determining effectiveness of anti-cancer drugs by using cell lines. Through highly reliable clinical evaluation made possible by joint research with M.D. Anderson, the Company is working to quickly establish the new diagnostic technology and develop the related equipment and reagents in order to achieve the goal of improving patients' quality of life.

Expanding Our Core Technologies: Establishing New Screening Technology in the Field of Life Sciences

Sysmex established the Central Research Laboratories in April 2000 to discover core technologies that will play a vital role in the twenty-first century. The facility conducts research activities in the field of life sciences to establish new testing methods in areas such as definitive diagnosis, tailor-made therapies, and risk evaluation. Particular emphasis has been placed on cancer diagnostics, and Sysmex has already announced the development of technology for the rapid detection of metastatic cancer of the lymph nodes and an

Case Study 1: Diagnostic Technology for Determining the Effectiveness of Anti-Cancer Drugs Developed through Joint Research with M.D. Anderson

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automated cervical cancer screening system.

Aiming for further growth, Sysmex plans to increase R&D expenditures to 10 percent of net sales by 2005, in order to spur the development of more specialized and innovative technologies.

In addition, Sysmex participates in the Millennium Project initiated by the Japanese government, conducting research with industrial and educational institutions on the functional analysis of cellular proteins.

Furthermore, the Company works to improve the efficiency and speed of its R&D activities through joint research. One such example is the development of a diagnostic method for determining the effectiveness of cancer drugs through joint research with the M.D. Anderson Cancer Center in the United States.

Sysmex remains committed to establishing new testing methods aimed at improving patients’ quality of life.

**Moving into New Business Areas: Non-Invasive Measurement Technology and Scientific Instruments**

Sysmex’s technology extends into fields beyond diagnostics. One example is non-invasive measurement. In 1999, Sysmex was the first in the world to successfully develop technology

Case Study 2: Development of a Cervical Cancer Screening System through Technical Collaboration with U.S.-Based Matritech

While pursuing its own research on genetic testing, focusing on the field of cancer, Sysmex also acquired exclusive worldwide rights to the cervical cancer detection technology owned by the American biotechnology company Matritech, Inc. in November 2002.

Cervical cancer is the second most common cancer among women, and there are approximately 500,000 new cases every year. If the cancer could be detected earlier, more patients could be cured. The development of more accurate cervical cancer testing technology will be a key issue in reducing the mortality rate and increasing patients’ quality of life.

In the future, the automated cervical cancer testing system which Sysmex has begun developing will make it possible to rapidly and accurately detect cancer cells by combining Matritech’s patented nuclear matrix protein NMP179 for cervical cancer with Sysmex’s proprietary technologies (flow cytometry, image analysis and reagent development). The system will automate the visual examination process currently done by cytologists and is scheduled to be commercialized and launched in fiscal 2006.
that uses near-infrared spectroscopic imaging to measure hemoglobin concentrations in peripheral blood vessels without blood sampling. Sysmex commercialized the technology as the Astrim peripheral blood vessel monitoring device, and worked to create a market for use in monitoring athletic training and in research on health foods. In the future, the Company will highlight the fact that Astrim does not require blood sampling, which is the product’s greatest advantage, and plans to investigate using the device for examining groups such as young children and expectant mothers.

Sysmex is moving into industrial fields with the integration of two core technologies: particle analysis for industrial applications and image processing. These technologies allow analysis of particles in photocopier toner, electronic materials, pharmaceuticals and cosmetics at the micron level.

A sales agreement with UK-based Malvern Instruments Ltd., a leading company in the field of particle analysis, has enabled Sysmex to expand its lineup of particle analyzers.

Sysmex and Toshiba Corporation jointly developed minimally invasive technology for self-measurement of blood glucose levels by combining Sysmex’s minimally invasive tissue fluid extraction technology and Toshiba’s optical sensing technology. Diabetes patients typically measure their own blood glucose levels by performing a finger-prick or using another body part to obtain a drop of blood. The discomfort caused by the need to repeat this procedure several times a day was the incentive for developing a new type of painless blood glucose measurement device.

The minimally invasive technology for self-measurement of blood glucose levels developed jointly by Sysmex and Toshiba measures the amount of glucose in tissue fluid rather than blood samples. This improves the quality of life for patients who no longer have to suffer the pain of blood sampling. Sysmex was responsible for developing technology for painless and stable extraction of tissue fluid samples, while Toshiba handled the development of biosensor chips and detection unit hardware for accurately measuring the minute amounts of glucose contained in the samples.

Development of the technology for practical use is currently underway in fiscal 2003, with a market launch scheduled for fiscal 2005.