



*Science Advancing Health*

**MDS INC.**

**ANNUAL INFORMATION FORM**

**FOR THE YEAR ENDED OCTOBER 31, 2002**

January 31, 2003  
Toronto, Canada

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# MDS INC.

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## **COMMENT REGARDING FIGURES CONTAINED IN THIS DOCUMENT**

In this Annual Information Form, all references to specific years are references to the fiscal year ended October 31. All references to "\$" or "dollars" are references to Canadian dollars, unless otherwise specified. All per share amounts have been restated to reflect the impact of a two-for-one stock split which became effective November 15, 1996, and a one-for-one stock dividend having effect September 26, 2000. In fiscal 2000, MDS adopted CICA Handbook Section 3465 – Accounting for Income Taxes, and changed from the cash basis of accounting for non-pension post-employment benefits to the accrual basis. Both of these changes were applied retroactively. During fiscal 2001, MDS adopted the CICA recommendations with respect to accounting for pension benefits prospectively, effective November 1, 2000. Effective November 1, 2001, the Company adopted the requirements of CICA Handbook Section 3062, "Goodwill and Other Intangible Assets" on a prospective basis. Under the new standard, goodwill and intangible assets with indefinite useful lives are no longer amortized but are subject to an impairment review annually or more frequently if deemed appropriate. The carrying value of goodwill is assessed annually to determine if a permanent impairment exists. This assessment is based on the forecasted discounted operating income of the business to which the goodwill relates. In addition, MDS adopted CICA Handbook Section 3500, "Earnings per Share", which requires the use of the treasury stock method to calculate diluted earnings per share. The requirements of Section 3500 were adopted retroactively and diluted earnings per share figures for the prior years were restated.

Certain of the statements contained in this document may be considered forward-looking statements. Actual results and outcomes will vary from management's expectations.

## **DOCUMENTS INCORPORATED BY REFERENCE**

The MDS 2002 Annual Report Financial Review (the "Financial Review") is incorporated by reference into this Annual Information Form (the "AIF") including:

1. The audited consolidated financial statements of MDS Inc. ("MDS" or the "Company") for the years ended October 31, 2002, October 31, 2001 and October 31, 2000, reported on by Ernst & Young, Chartered Accountants (the "Financial Statements") on pages 14 to 33, and
2. The Management Discussion and Analysis of the fiscal results and financial position contained on pages 1 to 13.

## DEFINITIONS –

CDO	A Clinical Development Organization is one that designs and manages patient studies at any investigator site. Sometimes considered to be a traditional Phase III CRO.
CPU	A Clinical Pharmacology Unit is a site or location at which studies are conducted on subjects who agree to be confined for purposes of the studies. This is typically utilized for purposes of traditional Phase I studies.
CRC	A Clinical Research Centre is a unit that manages patient studies from partnered sites within a defined investigator or patient-provider location. For example, a hospital having access to a group of patients having particular conditions on which trials are being conducted may serve as a CRC.
CRO	A Contract Research Organization is a company that conducts research on behalf of a pharmaceutical or biotechnology company.
CRU	A Clinical Research Unit is a smaller, more focused CRC, which assists in the development, design, and conduct of proof of concept type studies.
FDA	Food and Drug Administration – The US regulatory agency charged with maintaining the safety of food, drugs, and cosmetics.
GCP and GLP	Good Clinical Practices and Good Laboratory Practices are standards for the conduct of clinical trials (including laboratory studies) the data from which are expected to be submitted to a regulatory agency such as the HPB or FDA. In the case of GLP these practices are defined by regulation. GCP have arisen from general accepted clinical practices within the industry.
HPB	Health Protection Branch – The Canadian Agency charged with approving for use prescription and non-prescription drugs and other materials intended for human consumption.
IND	Investigational New Drug – An application that a drug sponsor such as a pharmaceutical company must submit to the FDA before beginning tests of a new drug on human subjects. The IND contains a study plan and a complete technical description of the drug and its intended uses and effects.
NCE	A New Chemical Entity is a chemical compound being studied for possible use as a drug. Compounds are generally referred to as NCEs until a NDA is filed.
NDA	A New Drug Application is submitted to the FDA reporting the results of clinical trials and must be approved before marketing can begin.
NDS	A New Drug Submission is the Canadian equivalent of the NDA.

SMO	A Site Management Organization conducts outpatient studies in or from partnered sites.
USDA	United States Department of Agriculture – The agency charged with regulating the production, processing, and distribution of food products.
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Assay	Analysis of biological fluids or structure to determine how much or how little drug has been absorbed into the fluid or structure.
Bioanalytical	Methods for determining the concentration of drugs in biological samples such as blood.
Bioavailability	Studies designed to determine the absorption of a drug into the blood stream and its passage through the body.
Bioequivalence	The study of different formulations of the same drug to determine if the metabolic effects are equivalent.
Biopharmaceuticals	Pharmaceutical products (drugs) developed using biotechnology instead of chemical synthesis.
Biotechnology	The scientific manipulation of living organisms, especially at the molecular genetic level, to produce useful products.
Brachytherapy	A radiation therapy in which radioactive materials are placed in direct contact with the tissue being treated.
Clinical Trials	Broadly, the regulated process by which new drugs proceed after discovery through to acceptance for marketing to patients. The term most correctly refers to the period during which new compounds are tested in human subjects and encompasses the following broad phases:
Phase I	Segment of clinical trials research allocated to assessing the safety, tolerance, and pharmacokinetics of a NCE generally using otherwise healthy study subjects.
Phase II	Segment of clinical trials research allocated to assessing the safety and efficacy of a NCE in selected disease states using patients having the condition.
Phase III	Segment of clinical trials research allocated to assessing the safety and efficacy of a NCE often in comparison with standard therapies, conducted in an expanded, multi-centre manner using patients having the condition.
Phase IV	Follow-on clinical studies completed after the FDA has approved the NCE for marketing.

Cobalt 60	A radioactive isotope of cobalt containing one additional neutron (electrically neutral particle) compared to cobalt in its natural state.
Curie	A measure of the intensity of a radioactive substance. A megacurie is equal to 1 million curies.
Cyclotron	A form of particle accelerator which can be used to produce radioisotopes.
Decay	A spontaneous radioactive process by which the number of radioactive atoms in a material decreases over time resulting in the release of a defined amount of radiant energy.
Diagnostic Imaging	The use of x-rays, ultrasound, radiopharmaceuticals, and similar techniques to create an image or a body for diagnostic review.
E. coli	A member of the family of microorganisms called coliforms. Many strains of E. coli live peacefully in the gut; however, one strain (E. coli 0157:H7) has been identified as the cause of a specific form of gastroenteritis characterized by abdominal cramps and bloody diarrhea, leading to kidney failure and sometimes death.
Efficacy	Capacity for producing a desired result or effect.
Electron (or E) Beam	A type of particle accelerator that creates a stream of high-energy electrons.
Gamma Camera	A machine capable of recording a photographic or digital image of a radioactive source. These machines are used to photograph patients who have been injected with or ingested a minute dose of a radiopharmaceutical.
Gamma Radiation	Very high-energy electromagnetic radiation that is released from the decay of radioactive sources.
Genome	The entire genetic information present in a particular organism.
Genomics	The study of the organization, structure and function of the genome
Half-life	The time required for radioisotopes to decay to one-half the level of radioactivity originally present.
Ion	An electrically charged atom or group of atoms having a positive or negative charge.
Ionization	The process by which neutral atoms become electrically charged by the loss of one or more electrons (electrically negative particles).
Investigator	The individual from a clinic site who is ultimately in charge of a study, typically a physician.

Irradiation	The process of exposing product to gamma radiation, or X-rays, or electrons under controller conditions.
Isotope	A form of an element having the same number of protons (electrically positive particles) but a different number of neutrons from its ordinary state. Most elements exist in more than one isotopic form and most isotopes are stable (unchanging). Isotopes are typically identified by an element name followed by a number.
Liquid Chromatography	A separation technique in which the sample is injected into a liquid stream pumped at high pressure through a column packed with materials which absorb the components of the sample to varying extents, such that over the length of the column the components of the sample become separated and are detected sequentially by the mass spectrometer.
Mass Spectrometry	The science by which light absorption is used to determine the elemental make up of a substance.
Molybdenum 99	The most common isotope used for medical purposes. It is processed into technetium 99m for these purposes.
Particle Accelerator	A machine that increases the kinetic energy of electrons or protons by accelerating them through electric fields.
Pharmacokinetics	The study of what the body does with a drug, including its absorption into the bloodstream, its distribution through the body, its metabolic impact, and its excretion (often referred to as ADME).
Pharmacology	The study of drugs and their origins, nature, properties, and effects on living organisms.
Preclinical Studies	Designates those studies generally completed prior to human clinical trials.
Proteomics	the study of protein location, interaction, structure and function which aims to identify and characterize the proteins present in normal versus diseased states in biological samples.
Protocol	The detailed plan of study that forms the basis for clinical trials. Application of the protocol is a key component which will be reviewed by the drug approval regulators in determining whether a NCE has undergone sufficient rigorous study to be approved for use.
Radioisotopes	An isotope that is unstable and returns to a stable state through the release of energy in a process called decay. MDS processes and distributes radioisotopes for use in medical applications and for sterilization processing.

Radiopharmaceuticals	A specially designed pharmaceutical having as part of its ingredients a minute amount of a radioisotope. After injection or ingestion, the radiopharmaceutical is designed to collect in specific organs or types of cells such as tumour cells.
Reagent	A substance involved in a chemical reaction. Most often used in a laboratory context to describe a substance used to detect the presence of another substance.
Salmonella	A rod-shaped bacterium that causes various diseases in humans and domestic animals, including typhoid fever and food poisoning. Sources include water, soil, insects, animal feces, raw meats, and raw poultry.
Synthesis	The process of creating a molecule through chemical reaction.
Target	The cells, tissues or structures that a drug is intended to interact with as part of its pharmacological effect.
Toxicology	The study of a chemical compound to determine the levels at which death occurs.

## **1 - INCORPORATION**

### **1.1 – Jurisdiction of Incorporation and Articles – Historical Perspective**

The Company was originally incorporated on April 17, 1969 under the laws of the Province of Ontario under the name Medical Data Sciences Limited. The Company changed its name to MDS Health Group Limited in April of 1973 and to MDS Inc. in November of 1996. The Company was continued under the Canada Business Corporations Act in October of 1978 and remains subject to that statute.

The Company's shares were originally listed on the Toronto and Montreal stock exchanges in 1973. Between 1979 and 2000, the Company was listed only on the Toronto Stock Exchange. Since 2000, MDS has also been listed for trading on the New York Stock Exchange.

The Company's share capital has been restructured or converted several times from common shares in 1973 to Class A Common and Class B Non-Voting in 1980 and finally back to Common in March of 2000. Under the terms of the 2000 conversion, each Class A share was converted into 1.05 Common shares and each Class B non-voting share was converted into 1 Common share.

The Company shares have been split on a two-for-one basis three times, on the following dates: July 13, 1983; March 15, 1990; and, November 15, 1996. In addition, on September 14, 2000, the Directors of the Company declared a one-for-one share dividend paid on October 10, 2000 to shareholders of record on September 26, 2000. This share dividend had the same effect as a two-for-one stock split.

Bylaw No. 78-1 has been the general bylaw of the Corporation since October 31, 1978. The Board of Directors, at a meeting on September 18, 2002, enacted Bylaw No. 1-2002 as the new general bylaw of the Corporation, principally in response to the changes to the Canada Business Corporations Act which became effective in November 2001. The more substantial changes included the reduction in directors' residency requirements, the capability to communicate electronically with shareholders and the capability of shareholders to participate and vote electronically at meetings.

In addition, the new bylaw contains specific provisions requiring a majority of the Board to be unrelated, all Audit Committee members to be unrelated and at least a majority of the Human Resources & Compensation Committee and Corporate Governance & Nominating Committee members to be unrelated. Currently all of the Audit Committee, Corporate Governance & Nominating Committee and Human Resources & Compensation Committee members are unrelated or independent. The terms of the bylaw also provide for the repeal of former general Bylaw 78-1.

The head office of MDS, and its principal place of business, is 100 International Boulevard, Toronto, Ontario, Canada, M9W 6J6.

### **1.2 – Corporate Structure**

The more significant operating subsidiaries of the Company are as follows (all are 100%-owned subsidiaries of MDS and are incorporated in Canada unless noted otherwise):

- MDS (Canada) Inc.;

- MDS Pharma Services (US) Inc., a Nebraska Corporation;
- MDS Laboratories Inc., a Delaware Corporation;
- MDS Hudson Valley Laboratories, Inc., (“HVL”), a New York corporation;
- Nordion Europe SA (“NESA”), a Belgian corporation;
- MDS Nordion AB (formerly Helax AB “Helax”), a Swedish corporation;
- MDS Pharma Services Central Lab S.A., a French corporation
- MDS Pharma Services France SA, a French corporation;
- MDS Pharma Services GB Limited., a UK corporation; and,
- MDS Pharma Services Central Lab AG, a Swiss corporation.

In addition to the subsidiaries listed above, the Company owns an 89% interest in MDS Proteomics Inc. (“MDSP”); a 50% interest in Source Medical Corporation (a Canadian company) through MDS Ingram & Bell Inc. (“I&B”); and, an indirect 26.4% interest in Calgary Laboratory Services (“CLS”), an Alberta partnership, through Bow Valley Diagnostics Services Inc.

Along with these incorporated subsidiaries, the Company also conducts business through the following significant partnerships:

- Metro-McNair Clinical Laboratories LP (“Metro”), a limited partnership established under the laws of British Columbia in which MDS holds a 75% interest;
- PerkinElmer / MDS Sciex Instruments (“PerkinElmer/MDS Sciex”), a partnership established under the laws of Ontario in which MDS holds a 50% interest;
- Applied Biosystems/MDS Sciex Instruments (“ABI/MDS-Sciex”), a partnership established under the laws of Ontario in which MDS holds a 50% interest;
- Integrated Regional Laboratories (“IRL”), a joint venture formed under the laws of the State of Delaware in which MDS holds a 50% interest; and
- Memphis Pathology Laboratories, a Delaware partnership in which MDS holds a 55% interest.

The entities outlined above are consolidated in the financial statements of MDS and are referred to hereafter as subsidiaries, with the exception of PerkinElmer / MDS Sciex and of ABI/MDS Sciex which are accounted for on a proportionately consolidated basis. In addition, the Company’s indirect interests in CLS and Source are also proportionately consolidated.

In addition to its subsidiaries, the company has significant influence over and equity accounts for a number of laboratory businesses, the most significant of which is a 15% interest in Dynacare Kasper Medical Laboratories, an Alberta partnership. Finally, the Company’s 48% interest in MDS Capital Corp. and 44% interest in MDS Health Ventures Inc. (which are described in more detail later in this document) are also accounted for on an equity basis.

Throughout this document, “MDS” or “the Company” will refer to MDS Inc. as a whole, unless the context indicates otherwise.

## **2 – GENERAL DEVELOPMENT OF THE BUSINESS**

### **2.1 – Overview**

MDS is the largest health and life sciences company in Canada with 2002 revenues of \$1.8 billion. MDS is focused on providing technology-based solutions to its customers to help them improve the health and well-being of people. Customers include providers of health care such as hospitals, physicians, and other medical facilities, and manufacturers of health-related products such as pharmaceutical companies, biotechnology companies, and manufacturers of medical devices. The services and products of the Company are designed to assist customers to lower costs and improve the safety and efficacy of their products and services.

#### Health Segment

Since its inception, clinical laboratory services have been a major business focus of the Company. Prior to 1987, MDS operated clinical laboratories in Ontario and New York State. In 1987, the Company acquired a 50% interest in Metro and in 1990, the Company acquired 100% of Bow Valley, expanding the laboratory operations to all provinces of Canada west of Quebec. In 1990, MDS acquired the Quebec, Saskatchewan, and New York State operations of Cybermedix, Inc. MDS subsequently sold its US laboratory operations in 1992. In 1996, the Company re-entered the US clinical laboratory market as a partner in several hospital laboratory joint ventures, bringing laboratory management, laboratory automation, and process improvement skills to these joint ventures.

Currently in Canada, the Company operates and supports laboratory networks in Quebec, Ontario, Manitoba, Alberta, Saskatchewan, and British Columbia. In the US, MDS manages hospital-based laboratory networks based in New York, Georgia, Florida, North Carolina, and Tennessee.

In 1986, MDS acquired a 49% interest in Ingram & Bell Inc., a medical supply manufacturing and distribution company, broadening the products and services offered to health care providers. This interest was increased to 100% in 1993. In 1997, I&B and Allegiance Healthcare Canada Inc., the Canadian subsidiary of US-based Allegiance Healthcare Corporation (now owned by Cardinal Health, Inc.), merged their respective Canadian health care product distribution businesses to form Source Medical Corporation. During 1999, the remaining medical product manufacturing businesses of I&B were sold or closed down.

#### Life Sciences Segment

With the acquisition of Sciex in 1981, MDS broadened its operations into analytical instruments.

In 1992, MDS acquired an initial 83% interest in Nordion International Inc. from the Canadian Development Investment Corporation pursuant to a privatization initiative by Atomic Energy of Canada Limited, thereby expanding its operations into medical isotope manufacturing and distribution. In 1995, the Company increased its ownership interest in Nordion when it purchased a minority stake then owned by Amersham International, plc. In 1998, MDS expanded into isotope-based radiation therapy with the acquisition of 100% of

Theratronics. Further expansion in the radiation therapy business occurred during 1999 with the acquisitions of GammaMed, Helax, and Precitron.

In 1995, MDS began acquiring contract pharmaceutical research organizations and expanded the services offered to the pharmaceutical development industry. Acquisitions included the purchase of Panlabs in 1995, and Harris and NeoPharm in 1996. Other smaller acquisitions followed, eventually leading to the fiscal 2000 acquisition of Phoenix International Life Sciences Inc., a public company based in Montreal, Canada with operations in the United States and Europe. These contract research businesses have been integrated and now operate globally under the tradename MDS Pharma Services.

### Proteomics Segment

This segment includes the Company's 89% interest in MDSP. The company was created in 2000 when MDS transferred its then 50% interest in Protana along with certain intellectual properties into the newly formed venture. In October 2000, MDSP acquired the remaining 50% of Protana in return for a 6% interest in MDSP. During 2001, MDSP issued additional treasury shares representing a 7% interest in the Company for cash and in connection with certain investments.

MDSP is focused on research and development in the field of proteomics-enabled drug discovery. Products and services include capabilities in proteomics systems, technology, drug design, screening, and biology. Proteomics is the systematic analysis of all protein sequences and protein expression patterns in tissues, which involves the isolation, separation, identification and functional characterization of all of the proteins in an organism.

MDS Proteomics has designed and developed automated proteomic systems to enable the seamless development of functional proteomic maps of cellular activity in order to create a bridge from genomic information to the discovery of new medicines.

Genes encode proteins that perform all of the fundamental activities within cells. Proteins transmit messages, repair damage, provide the building blocks for tissues, and carry out reactions essential for life. Proteins are the molecular machines that carry out genetic instructions. Abnormalities in protein production or function have been connected to many diseases and health conditions. To understand how best to treat a particular disease, it is necessary to identify the proteins associated with that disease and to understand how they function.

There are two main approaches to proteomics: expression proteomics and functional proteomics. Expression proteomics involves the study of proteins in comparative tissue samples. Functional proteomics is the study of how proteins interact with other cellular components in order to determine protein function.

### Customers

The Company's Life Sciences segment customers include a broad range of manufacturers of medical products including pharmaceutical manufacturers, biotechnology companies, and manufacturers of medical supplies and devices. These customers are located in essentially all major international markets.

In the Health segment in Canada, the Company provides products and services directly to health care providers including physicians and hospitals. In the United States, the Company operates through a series of joint venture agreements with individual hospitals and hospital networks to provide laboratory management services to local hospitals.

In its distribution business, the Company sells surgical and medical supplies and equipment to hospitals and other health care institutions.

No single customer accounts for more than 10% of revenues. The Ontario Ministry of Health, in its capacity as the funding body for the Ontario public health insurance program, funds approximately 11% of total revenues.

Over the past three years, exports from Canada have climbed from 31% to 33% of total revenues and for 2002 amounted to \$588 million in revenues. Revenues earned outside of Canada, including export sales, and revenues earned by operating units based outside of Canada, made up 54% of net revenues for the year.

### Employees

As at October 31, 2002, MDS had approximately 10,885 employees in over 20 countries around the world.

## **2.2 – Recent Industry Developments**

MDS has benefited from the significant and rapid changes which are affecting the health care and life sciences industry globally. These changes include:

- i) rising health care costs;
- ii) intensifying cost containment pressures within the health care envelope;
- iii) rapid growth in demand for services due to ageing population bases;
- iv) rapid innovation in technology, increasing the availability of sophisticated treatment options;
- v) growing consumer awareness of health care choices;
- vi) changing funding responsibilities as governments drive more of the costs of health care to consumers and their health insurance companies;
- vii) growing awareness within emerging and developing countries of the benefits of adequate health care systems and the improving ability to pay for improved health care solutions.

As a result of these changes, the balance of power within the health care and life sciences industry has shifted. In Canada, the reduced level of federal government funding has left increased responsibility for policy development in the hands of provincial governments. Health care funding provided by provincial governments has generally not kept pace with the rising cost structure and growing demand for services. This has led to increased emphasis on the cost effectiveness of services and caused service providers to pursue more cost efficiency in their operations. In addition, the delisting of some health care services under provincial health care plans has shifted increased responsibility in certain areas back to consumers and direct providers.

In the United States, the role of government has been increasing and, government now accounts for one-half of the nation's health care expenditures. Focus on government spending in the US is having much the same effect as it did in Canada and health care providers are becoming far more focused on cost efficiency and cost effectiveness. Health management organizations ("HMOs") are playing an important role in treatment decisions; however, their influence has decreased from levels seen in recent years. The cost and effectiveness of treatment methods play important roles in determining a treatment strategy. The industry has seen continued consolidation of payers and providers, including hospital groups and others, and economic power within the health care market is becoming further concentrated.

All of this is resulting in new roles for market participants in both countries. The increased importance of productivity improvements and efficiencies has created new opportunities for value creation and has opened new business opportunities for those suppliers who are able to adapt quickly to the changing needs of their customers.

The explosion of new technologies has profoundly affected the life sciences and health markets. The pharmaceutical industry is continuing to see corporate mergers of significant size, and consolidation of this industry is expected to continue. These mergers are expected to affect product development budgets and may lead to more focused research spending by the merged entities.

These mergers are, at least in part, a response to pending loss of patent protection on a significant number of large market drugs expected over the next few years. Off-patent drugs often lose more than half of their market share to generic alternatives in less than one year. To replace these lost revenues and sustain the levels of growth enjoyed in the past, pharmaceutical companies must either increase research and development spending or improve the effectiveness of existing spending. One way to improve effectiveness through mergers is the elimination of duplicate spending. Another way is to become more focused on a smaller number of therapeutic areas.

There is also growing activity between pharmaceutical companies having large research budgets and smaller biotechnology companies that have smaller budgets but rich pipelines of possible new discoveries. Advances in biotechnology and genomics have created many of the new opportunities in pharmacology that biotechnology companies are seeking to exploit. Large pharmaceutical companies are increasingly providing funding to these smaller companies in return for rights to further develop and market products resulting from these discoveries.

The surge in development activity, coupled with a drive to reduce costs and accelerate development time, is driving a boom in outsourcing of research activities by pharmaceutical manufacturers. The advent of high throughput screening, accompanied by the technologies which make this possible, increases the number of new drug leads that can be investigated, enabling drug companies to identify promising candidates earlier. More importantly, researchers can eliminate an unpromising candidate before a large investment is made in further development.

The evolving sciences of genomics and proteomics are expected to lead to significant advances in diagnosis and treatment of disease. The completion of the first stage of the Human Genome Project in 2000 laid the groundwork for much of these advances. Research

into proteomics is expected to further improve the information and products used in the treatment of disease.

Better drugs, delivered more quickly and at a lower cost, will be one outcome of these advances. In addition, these technologies are expected to lead to better diagnosis at an earlier disease stage, which will in turn lead to treatment that is more effective. A number of new developments also promise better disease prevention alternatives. Improved patient outcomes at a lower overall cost continues to be the goal.

### **2.3 – Business Strategy of MDS**

MDS's business strategy is to be positioned to take advantage of emerging opportunities in markets where the Company has either an established base of involvement or strong scientific and technical capabilities that are consistent with the needs of our customers.

The goal of the Company is to be a leading provider of products, information, and services in selected markets, including:

- drug discovery and development products and services such as analytical instruments and contract research focused on early-stage drug development;
- diagnostic services including automation and management of clinical laboratories and development of emerging diagnostic methods and tools; and,
- isotope products and services including sterilization, radioisotopic production and distribution, radiopharmaceuticals, and radioisotope-based cancer therapies.

Increasingly, technological leadership will be the main method of differentiation among participants in these markets. MDS invests significantly in research and development and in capital equipment to maintain its competitive edge. The Company invested \$68 million and \$85 million in research, product development, and innovative business initiatives in 2001 and 2002, respectively. The Company invested a further \$115 million and \$157 (includes Capital leased assets) in new capital assets in 2001 and 2002, respectively. Over the last five years, MDS invested \$644 million in new capital assets, including \$291 million in a state-of-the-art isotope production reactor and processing facility ("MAPLE") in Chalk River, Ontario, Canada.

MDS also believes that business alliances, such as joint ventures and similar entities, are an effective and responsive organizational form for pursuing business objectives. Alliances that bring together the complementary capabilities of two or more companies may provide the best solutions to customers of the future. The ability of market participants to develop such alliances and to manage them successfully will be a key success factor for future growth. MDS is building on the success of its well-established partnerships such as Metro-McNair and joint ventures such as those with Applied Biosystems and PerkinElmer Canada Inc., and establishing new partnerships in areas of its business not traditionally managed in this way. These include Source Medical Corporation, Toronto Medical Laboratories, and US - based hospital joint ventures such as those with Columbia/HCA and Baptist Memorial Health Care Corporation, and Duke University Health Network.

## 2.4 – Financial and Other Developments

Factors affecting the comparability of financial data for the years 1998 through 2002 (in addition to those factors disclosed in the Notes to the Selected Consolidated Financial Information) include the following:

### Capital Structure

- In June 1998, the Company established a \$450 million long-term credit facility with a syndicate of four banks. The facility included a) a \$150 million committed revolving five-year term loan, b) a \$150 million 364-day extendible revolving credit with a five-year term option, and c) a \$150 million 364-day revolving credit which can be converted to a one-year term loan.
- In April 1999, the Company raised \$96 million (net of share issue costs) from the sale of 3 million Class B Non-Voting Shares.
- In March 2000, MDSP issued 3.3 million Special Warrants, exchangeable for shares in MDSP. Under the terms of the Warrants, in the event that MDSP does not complete an initial public offering prior to March 30, 2001, MDS took to buy the Special Warrants from investors. In 2001, MDS purchased 2.9 million Special Warrants for \$78 million cash and in 2002 purchased the remaining Special Warrants for \$3 million cash and the issuance of 334,225 Common shares.
- In April 2000, the Company increased the 1998 syndicated debt facility to \$650 million by increasing credit (c) to \$350 million and added a fifth bank.
- In April 2000, the Company issued 6.2 million shares as part of the purchase of Phoenix. These issued shares had an assigned value of \$236 million.
- In September 2000, MDS issued 3.25 million shares for net proceeds of \$191 million.
- Effective September 26, 2000, MDS declared a one-for-one share dividend, having the same effect as a two-for-one stock split.
- In December 2002, the Company completed a private placement of US\$311 million of Senior Unsecured Notes payable ("the Notes"). The Notes bear fixed interest at rates between 5.15% and 6.19% and have various terms between five and twelve years. Proceeds of the Notes will be used to repay and cancel the majority of the syndicated debt facility.

### Acquisitions

- During 1998, the Company acquired 100% of Theratronics and 100% of Analytical Solutions, Inc., in addition to a small, Ontario-based clinical laboratory. The total cost of these acquisitions was \$26.2 million, comprising cash and the assumption of certain existing long-term debt.
- During 1999, MDS expanded its radiation therapy business by acquiring 100% of Isotopen-Technik Dr. Sauerwein GmbH of Germany and of two related companies, Helax AB and Precitron AB, located in Sweden. Also in 1999, the Company increased its pharmaceutical research services business with the acquisitions of LAB Pharmacological Research Inc. of Montreal and Glarif-Cerba SA of France (since renamed MDS Glarif

SA). A new initiative in the proteomics field was begun under an agreement that resulted in MDS acquiring a 50% interest in Protana AS of Denmark. The combined investment in these businesses amounted to \$52.9 million with an additional \$5 million invested during fiscal 2000.

- During 2000, MDS invested \$497 million to acquire Phoenix and all of its subsidiaries. A further \$9.8 million was invested to acquire certain proteomics related assets and the 53% of Hudson Valley Laboratories not previously owned by MDS. At year-end, MDSP acquired the remaining 50% of Protana.
- During 2001, MDS spent \$4 million to acquire a number of small businesses in the Health segment.
- During 2002, MDS invested \$20 million in Common shares of MDSP in conjunction with a tax reorganization of that company.

#### Divestitures

- During 1998, the Company completed the disposition of two non-strategic operating units in transactions that produced \$9.8 million of proceeds. No significant gain or loss was realized as a result of these disposals.
- During 1999, the Company completed the disposition of its remaining Canadian medical devices manufacturing businesses, as these were deemed non-strategic.
- During 2002, the Company completed the disposition of two non-strategic operating units in transactions that produced \$23 million of proceeds. A loss of \$7 million was realized as a result of these disposals.

#### Other Matters

During the third quarter of 1996, the Government of Canada, Atomic Energy of Canada Limited and the Company, reached an agreement to build two specialized reactors to ensure a stable long-term supply of medical isotopes. Construction of these new reactors commenced during the second quarter of 1997. The Government of Canada provided MDS with a \$100 million non-interest-bearing loan to fund a portion of the construction costs. Repayment of the loan over a fifteen-year period commenced in October 2000. To satisfy its future repayment obligation, the Company has pledged a financial instrument having a value at October 31, 2002 of \$46 million as security for the loan.

### 3 – NARRATIVE DESCRIPTION OF THE BUSINESSES OF MDS

#### 3.1 – Reportable Industry Segments

MDS operates in three business segments: Life Sciences, which includes the development, manufacture, and provision of products and services to manufacturers of medical products; Health, which focuses on the provision of services and products to health care providers; and Proteomics, a research business focused on the applications of proteomics to transform the productivity of the pharmaceutical industry in discovering and developing new medicines for the treatment of disease. Each of these business segments contain separate operating business units that are grouped according to business:

##### **Life Sciences Segment:**

Analytical instruments      Operating as MDS Sciex, the business unit focuses on the design, development, and manufacture of analytical instruments based on principals of mass spectrometry and related operating systems and software. These products are sold through the ABI/MDS Sciex and PerkinElmer/MDS Sciex partnerships to pharmaceutical and biotechnology customers.

Pharmaceutical  
Research Services      Operating as MDS Pharma Services, MDS Pharmaceutical research business units conduct clinical trials with a focus on early-stage contract research from pre-clinical development to Phase II (a) clinical trials for innovative and generic pharmaceutical companies and for biotechnology companies.

Isotopes      Operating under the trade name MDS Nordion, these business units are leaders in the production of isotopes used in the diagnosis and treatment of disease and isotopes used to sterilize medical and other products, including food. In addition, the isotopes business includes the manufacture and sale of isotope-based cancer therapy equipment and treatment planning software.

##### **Health Segment:**

Diagnostics      Through various operating business units, the Company is the leading provider of diagnostic laboratory services in Canada. The Company also has developed proprietary laboratory automation systems and processes and has developed expertise in hospital network integration services. The Company is applying its expertise in these areas to develop new business models for laboratory management, principally in the United States.

Distribution      The Company is a partner in the largest provider of

distribution services for medical products in Canada, supplying hospitals and alternative care sites.

**Proteomics Segment**

A pioneer in the field of proteomic-enabled drug discovery, MDS's goal is to transform the productivity of the pharmaceutical industry in discovering and developing new medicines for the treatment of disease. The company has developed capabilities in proteomics systems, technology, supercomputing, drug design, screening and biology and is uniquely positioned to build an effective bridge between gene discovery and therapeutic development. This distinctive capability is being used in collaborations with pharmaceutical and biotechnology companies as well as for the development of the company's own product pipeline. In its proteomics facilities in Europe and North America, the company focuses on drug target discovery and validation for both antibody and small molecule therapeutics.

The following table provides information about the relative size and importance of the Company's business segments:

	Assets			Revenues		
	2002	2001	2000	2002	2001	2000
Life Sciences	75%	74%	77%	60%	57%	56%
Comprising:						
<i>Drug Development</i>				40%	36%	33%
<i>Isotopes</i>				19%	21%	23%
Health	18%	18%	17%	40%	43%	44%
Comprising:						
<i>Diagnostics</i>				30%	30%	30%
<i>Distribution and other</i>				11%	13%	14%
Proteomics	7%	8%	6%	-	-	-
Total	100%	100%	100%	100%	100%	100%

## **3.2 – Life Sciences Segment**

Life Sciences businesses are those whose primary business is the direct manufacture of medical products or which supply technology, products or services to other companies for use in the manufacture of medical products. Customers of MDS's Life Sciences businesses include companies involved in the development of pharmaceuticals and biotechnological products, as well as manufacturers of medical products and devices. In all cases, the products or services include a high level of technological sophistication or require significant technical or scientific expertise.

### **3.2.1 – Drug Discovery and Development**

MDS entered the analytical instrumentation business in 1981 with the acquisition of Sciex and in 1988 introduced the first liquid chromatography mass spectrometer for use on organic compounds. In 1995, MDS created a pharmaceutical research services division to take advantage of the significant opportunities that exist in drug discovery and contract research outsourcing for drug development companies. The analytical instruments business and MDS Pharma Services sell principally to customers involved in drug discovery and development.

#### Industry Background

During the 1970's, integrated pharmaceutical companies conducted the majority of research leading up to development of pharmaceutical products in-house. At that time, the only significant function that was contracted out was pre-clinical toxicology screening.

The drug development process is extremely expensive due to the cost of the infrastructure required to support the full range of processes necessary for drug development and the long period of time required to achieve full regulatory approval of a new compound. On average, it takes 10 to 12 years and over US\$500 million to bring a new pharmaceutical from discovery through Phases I to IV of clinical trials and make it available to consumers. Since patent protection for new products extends for only 17 to 20 years, the profitability of a new compound can be greatly enhanced by reducing the total cost of development and by shortening the elapsed period over which development occurs.

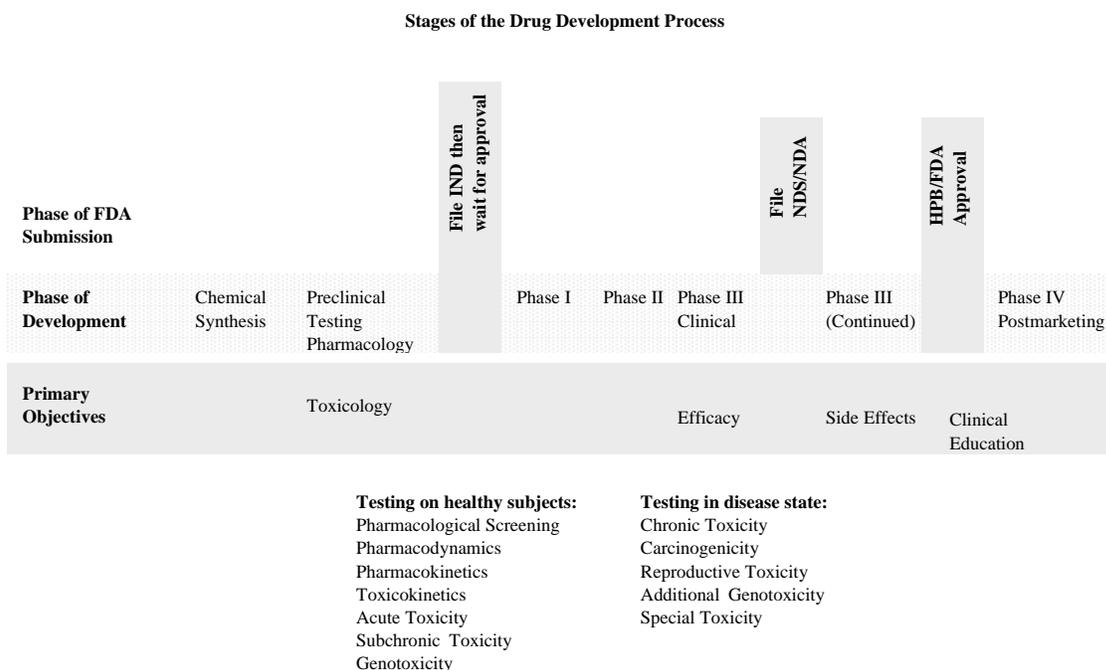
In an effort to reduce both time and costs, major drug companies began outsourcing portions of the development work to companies that provide research services. These companies have become known as Contract Research Organizations or CRO's. Individual CROs tend to specialize in particular stages of the drug development process and, therefore, develop expertise in those areas. Reliance on CRO expertise can enable the pharmaceutical companies to achieve cost efficiencies and to shorten the research time for that stage.

The decision by MDS to enter the CRO business in 1995 was influenced by a number of key trends that were beginning to affect the industry. The Company believes that these trends remain in place. In particular, corporate mergers and cost containment pressures at pharmaceutical companies will continue to lead to downsizing of in-house research and development capabilities and that pharmaceutical companies will focus increasingly on marketing and product distribution. Outside suppliers will increasingly be relied upon to provide services previously secured from in-house departments. Aside from reducing infrastructure costs for the pharmaceutical companies, this initiative is expected to lead to

reduced cycle time for development. Outsourcing this activity may also lead to development of drug candidates which have a small market and might have been ignored by larger pharmaceutical companies which require large-market drugs to cover the costs of their marketing and distribution channels.

Globalization of pharmaceutical markets driven by on-going mergers of major international pharmaceutical companies can be expected to influence the selection of a CRO. Those with an international presence and the ability to conduct trials in multiple jurisdictions are expected to be the preferred suppliers. The growth of the biotechnology industry is also influencing the growth of CRO's, as many smaller biotechnology companies do not have the infrastructure to conduct trials for their products in-house.

A general overview of the drug development process is provided below:



### Business Overview

Operating under the name MDS Pharma Services, MDS provides contract research services to pharmaceutical manufacturers and biotechnology companies, focusing particularly on drug discovery and early-stage drug development (up to Phase IIa clinical trials). MDS has provided services to pharmaceutical manufacturers since 1992, beginning as a centralized support laboratory providing testing services in connection with Phase III clinical trials. In 1995, MDS identified pharmaceutical development as a major growth area and, through its acquisition of Panlabs International, Inc., established a platform for a new division. The acquisitions of Harris Laboratories, Inc. and Laboratoires Neo-Pharm Inc. in 1996 broadened the range of research services offered to customers in the drug development field. In 1998, the services offered by MDS expanded to include formulation and small quantity manufacturing. The Company's network of bioanalytical laboratories was increased in 1998 and again in 1999. Also in 1999, MDS added Phase I trial conduct capability in Montreal, and added central clinical laboratory capabilities in Europe (France) and China.

The addition of Phoenix in 2000 further strengthened the Phase I and bioanalytical laboratory businesses in Canada and the US. Phoenix also had a growing presence in later-stage clinical research in the US and Europe. While the focus of MDS remains on early-stage activities, the addition of Phase III and IV capabilities enables the Company to offer a more complete suite of services.

In addition to contract research, MDS also supplies the pharmaceutical industry with an advanced line of high-sensitivity analytical instruments based on the principles of mass spectrometry. MDS manufactures ultra-trace chemical detection equipment and is Canada's leading manufacturer of analytical instrumentation. Marketed through joint ventures with Applied Biosystems (a division of Applied Biosystems Corporation) and PerkinElmer Canada Inc. to a global customer base, export sales account for more than 95% of revenues from these products.

MDS has been a major innovator of technologically sophisticated mass spectrometry instrumentation. In each of its product lines, MDS has been a pioneer. Accomplishments include the introduction of the first triple-quad mass spectrometers, inductively coupled plasma mass spectrometers, and techniques for detecting ultra-trace amounts of small or large molecules by atmospheric pressure ionization (electrospray). Most of these products have evolved through multiple generations and continue to hold significant shares of their market segments.

The pharmaceutical and biotechnology markets are the major users of technology based on the principles of liquid chromatography coupled with mass spectrometry (LC/MS) for detecting organic compounds. Early models of this equipment revolutionized many of the processes that were fundamental limitations in the search for new drugs or biotechnology products. Productivity and sensitivity improvement remains the primary basis for product differentiation for MDS equipment.

Newer products that combine mass spectrometry with time-of-flight technology and ion trap technology are finding markets among researchers investigating larger molecules such as proteins. In particular, the emerging proteomics market has become a key customer for this equipment.

A portion of the Company's market is outside of the pharmaceutical industry and relies on similar equipment for the detection of inorganic compounds. For this group of customers, the Company produces the ELAN Inductively Coupled Plasma Mass Spectrometer (ICP/MS) that provides high sensitivity with extremely high specificity for a wide range of elements in the analysis of a single sample. The range of market areas that are addressed with the ELAN is very broad and includes environmental monitoring (drinking and wastewater analysis), toxicology (role of trace metals in human disorders), semiconductors (trace impurities), and the nuclear industry (impurities in uranium). These machines are marketed on a worldwide basis through a joint venture with PerkinElmer Canada Inc.

The Company's Drug Discovery and Development businesses operate facilities in Canada, the United States, Europe, and Asia. Over 4,000 employees work in Drug Discovery and Development at these locations.

## Strategy and Competition

MDS is currently one of the top five CROs in the world. The Company is focused on early stage drug development. Management expects to continue to develop its international capabilities as a contract research organization while remaining focused on early stage development activities. The Company is also focused on the leading-edge technologies that are utilized during the development process. Although significant effort and investment will go into integrating and growing existing operating units, selective acquisitions will also be pursued. The acquisition strategy of the Company is to focus on those targets that provide a good fit with the existing continuum of service and technology offerings and a superior economic return.

The growth of the contract research industry has been dependent on the increase in outsourcing by major pharmaceutical companies. The market has experienced high growth rates and is intensely competitive. Competition for individual research contracts often includes in-house research departments of the pharmaceutical company placing a contract, as well as universities, teaching hospitals, and other CROs. Industry consolidation has affected both the pharmaceutical company clients as well as competing CROs and a trend towards the use of fewer, larger CROs has been observed. Management believes that outsourcing will continue and grow as an economically attractive alternative to in-house research; however, competition from research departments will remain a factor in the industry.

Several of the Company's competitors are significantly larger than MDS and may have greater financial and technical resources. Competition generally focuses on technical capability, as well as depth and breadth of service offerings. The majority of CRO competitors of the Company have been focused primarily on later stages of the drug development process (Phases III to IV). Competitors include several multinational companies such as Quintiles Transnational Corp., Covance, Inc., Parexel International, Corp., and PPD, Inc. The ability to offer an integrated international service is expected to become an increasingly important point of differentiation within the industry.

The Company's principal competitors in the analytical instrumentation market include Micromass Limited in the United Kingdom (now owned by US-based Waters Corporation), Thermo Instruments Inc. and Agilent Technologies, Inc. in the United States.

Development of leading-edge technologies and protection of key intellectual property are important differentiators within the analytical instruments business. MDS aggressively defends its patent rights in this industry. In 2002, MDS and our partners, Applied BioSystems, successfully prosecuted a patent infringement suit against Micromass in the US. The court awarded us US\$52 million in damages and prevented Micromass from selling certain of its product in the US. Similar infringement claims have been filed in other jurisdictions. Micromass has appealed the US decision.

## Risks

A portion of the revenue earned by the Drug Discovery and Development businesses is under contracts which typically run several months for drug discovery through Phase I clinical trials and as much as several years for Phase III clinical trials. Terms of most contracts entered into by the Company entitle clients to cancellation rights. Such rights are common to these contracts and may be exercised by the client in the event of regulatory delays or if unexpected

results are encountered at any stage of the development program. The Company's focus on early stage contract research reduces its exposure to the loss of a large single contract. MDS is therefore able to mitigate its exposure to revenue loss from contract cancellation by maintaining an order backlog consisting of numerous contracts having smaller individual values. Although it is not possible for the Company to predict the occurrence of delays or cancellations, the Company's strategy is to mitigate the impact of any such delays by maintaining this broad portfolio of on-going contracts.

During clinical trials testing, the Company will typically administer products owned and developed by others into individuals acting as test subjects. Under the terms of the contracts entered into by the Company, the pharmaceutical customer retains risk related to product failure, including risks related to adverse reactions by test subjects. The terms of these contracts vary and these terms do not prevent individuals from filing claims against MDS. Furthermore, the financial obligations established under these contracts are not secured and it is possible that the indemnifying party may not have the financial ability to meet its obligations to MDS in the case of an adverse event.

In conducting the tests and other procedures that form a part of the clinical trials process, the Company may be subject to claims related to negligence or misconduct pertaining to the services it performs. These risks may also include the medical malpractice of medical personnel operating Phase I clinical facilities. In addition, the Company could potentially be subject to claims for negligence or misconduct on the part of third-party investigators engaged by the Company on behalf of clients. The Company maintains professional liability insurance coverage against these risks; however, there is no assurance that such coverage will be adequate in the event a claim is successful.

Although MDS facilities devoted to pharmaceutical development are not directly subject to significant unusual government regulation, customers of the Company are subject to periodic review by drug approval authorities, principally the Food and Drug Administration in the United States. Under the terms of typical CRO contracts, the Company's customers can request that Company facilities be subjected to the same levels of review by the authorities. The Company meets Good Laboratory Practices ("GLP") standards for its laboratories and Good Clinical Practices ("GCP") standards for its clinic facilities. The Company has never experienced a contract cancellation for failure to meet such standards.

### **3.2.2 – Isotopes Business**

MDS is a leading manufacturer, marketer and distributor of radioisotope products, and treatment planning systems, supplying a major segment of world demand for its main product categories. The primary uses for radioisotopes processed by MDS are in nuclear medicine (including the production of radiopharmaceuticals and cancer treatment) and in industrial irradiation for microbial control. Exports of these materials to over 70 countries account for more than 97% of total sales by this business.

## Industry Background

Radioisotopes are forms of chemical elements that are radioactive and are not naturally occurring. These elements are produced as byproducts within specially equipped nuclear reactors and within specially designed equipment known as cyclotrons.

In nuclear medicine, these products are used because of their ability to show up in x-ray or similar diagnostic procedures. When formulated with chemical compounds that are attracted to or accumulate in particular types of tissue, these isotopes can aid physicians in the identification and treatment of diseases, principally cancers. Certain other radioisotopes can be used to deliver direct radiation therapy to cancerous cells using the same principles.

The principal radioisotopes in use worldwide are:

Cobalt-60	Used for industrial sterilization of medical products, certain foods, and other materials which require high levels of sterility.  Cobalt-60 is also used as a radiation source for certain forms of cancer treatment.
Molybdenum-99	Used to produce technetium-99m, this isotope forms the raw material for the majority of radiopharmaceutical products used for diagnostic procedures involving many major organs and bones.
Iodine	Several isotopes of iodine are in common use including $I^{131}$ - used for diagnosis and treatment of thyroid conditions, and $I^{125}$ - used for radioimmunoassays and certain cancers.

Molybdenum-99 and iodine-131/125 are produced in reactors. The following isotopes are produced in cyclotrons:

Thallium-201	This isotope is used extensively for cardiac studies.
Iodine-123	This product is used for thyroid, heart and lung studies. Iodine-123 is the most significant cyclotron-produced radioisotope product of the Company.
Yttrium-90	This product is used principally for radiotherapy and the treatment of tumours and in the manufacture of radiolabeled therapeutic agents.

Significant barriers to entry exist in both the medical isotopes and sterilization businesses. The manufacture of raw isotopes is dependent upon the availability of capacity in acceptable types of nuclear reactors and cyclotron beam time. Processing facilities such as those operated by MDS are centralized, capital intensive, and expensive to operate. In addition, due to the nature of the materials handled by the facilities, government and environmental regulation is a significant factor in the business.

Processing raw isotopes into a form suitable for the intended use is highly complex. Many isotopes used for nuclear medicine have a limited half-life. This imposes constraints on the manufacturing process and on the logistical procedures needed to deliver refined product to an end user. Efficient and safe transportation and logistical systems are vital components of the business. Security of supply is a key customer concern, due to the short life span of the products. Nuclear decay renders some of the products processed by MDS useless in a matter of days and isotopes are processed, delivered to manufacturers and then on to hospitals or treatment centres in only a few days.

Nuclear medicine is a growing market. Ageing populations worldwide are expected to increase demand for the procedures which nuclear medicine makes possible. In addition, considerable research is underway to identify new uses for existing radioisotopes. These forces are expected to propel the growth of this industry in the future.

Industrial sterilization is a more mature industry. Alternative uses for this technology are under investigation. To date, irradiation of food products has largely been limited to certain dry goods such as spices, certain fruits and vegetables, and to poultry. During 1998, the US Food and Drug Administration ("FDA") approved the use of irradiation for microbial control of pathogens (principally e. coli) in red meat and since then the US Department of Agriculture announced regulations pertaining to these procedures. At present, there is limited application of these procedures to red meat; however, significant effort is being devoted to promoting this alternative.

### Business Overview

MDS processes and repackages radioisotopes and uses the refined materials to produce products that include:

- radioactive sources for use in sterilization;
- radioisotopes that are used alone or coupled to targeting molecules for use in clinical research, diagnosis and treatment of diseases such as cancer;
- radioisotopes for use in nuclear medicine; and,
- radioactive sources for the treatment of cancer.

In addition, the Company manufactures and sells equipment that is used for the application of its radioactive products, including:

- cancer therapy treatment equipment;
- treatment planning software for cancer therapy;
- sterilization systems to ensure that disposable medical products are contaminant-free;
- sterilization systems for use on a wide variety of food products; and

- small-scale irradiators used for research purposes and to treat blood for immunocompromised patients.

In its industrial irradiation operations, MDS is the world's principal supplier of cobalt-60. The majority of raw cobalt-60 material is produced under long-term supply contracts in nuclear reactors operated by Ontario Power Generation Inc. ("OPG" - formerly Ontario Hydro) and by Hydro Quebec. MDS further processes the raw cobalt-60 (also referred to as a gamma source) for commercial use at its Ottawa, Ontario facilities. The resulting processed material is delivered to customers using approved transport containers and procedures. Customers of the industrial division include major sterilization contractors, as well as large medical product manufacturers who maintain their own sterilization capability. Other users include hospitals and alternative sites that use cobalt-60 in cancer treatment applications.

MDS also markets related processing equipment and technology, including industrial scale irradiators and smaller research irradiators. Delivery or construction of this equipment is usually accompanied by an initial shipment ("loading") of gamma source. Resupply or replenishment of the gamma source is required from time to time as the radioactivity level of the initial loading declines over its half-life.

Isotopes used for nuclear medicine are handled and processed in much smaller quantities than those used for industrial irradiation. MDS purchases reactor-produced isotopes such as molybdenum-99, iodine-131, iodine-125 and xenon-133 in an unfinished, non-purified form from Atomic Energy of Canada Limited ("AECL"), and transports them to its own facilities in Ottawa for further processing. MDS manufactures cyclotron-produced isotopes such as iodine-123, thallium-201 and palladium-103 at its facilities in Vancouver, Canada and Fleurus, Belgium, and refines these materials in its adjacent processing facilities.

The purified forms of these radioisotopes are active pharmaceutical ingredients, and are incorporated by pharmaceutical companies into radiopharmaceuticals used to diagnose and treat numerous serious disease states, such as coronary artery disease and cancer. Molybdenum-99 decays into technetium-99m, which is the most widely used diagnostic radioisotope in the world. Approximately 50,000 procedures daily – more than 18 million scans each year – use a technetium-99m-radiopharmaceutical. This number is expected to grow as the population in developed countries ages and as the use of nuclear medicine in the management of coronary artery disease expands. MDS is the world's leading producer of molybdenum-99.

To secure the future supply of molybdenum-99 and the other reactor-produced radioisotopes commonly used in nuclear medicine, MDS has constructed the world's first reactors dedicated exclusively to their production. The new facilities were built by AECL. MDS owns the reactors and AECL will operate them on a contract for service basis. (MDS does not own the existing NRU reactor that is currently its principal source of molybdenum-99.)

The MAPLE 1 reactor was placed in a state of secured shutdown following the identification of certain construction deficiencies during the commissioning process. As of October 2002, the Canadian Nuclear Safety Commission authorized the restart of low-power commissioning of the MAPLE 1 reactor. Full commissioning of both reactors is expected in the second half of 2003.

The new reactors and an integrated, state-of-the-art isotope processing facility will enable MDS to provide its customers with a stable and secure supply of key medical isotopes. They

strengthen MDS' competitive position in medical isotope supply, as they are the only reactors designed to optimize medical isotope production. All other reactors engaged in medical isotope production are multipurpose reactors and may be approaching the end of their useful lives.

Facilities that are able to handle and process isotopes in the manufacture of radiopharmaceuticals are complex and strictly regulated. MDS has added an 80,000-sq-ft manufacturing facility that is utilized on a partnership basis in the development, and later, the direct manufacture of radiopharmaceuticals.

Growth of development and manufacturing opportunities is expected, since drug manufacturers may not wish to incur the capital cost or regulatory delays associated with building their own facilities.

During 1998, MDS made a strategic decision to enter the cancer therapy and treatment market with the acquisition of Theratronics. Theratronics manufactures and distributes radiation therapy equipment and related treatment planning software. Cobalt-60 is the radiation source for this equipment. In 1999, the Company expanded its capabilities in this market by acquiring GammaMed, Helax, and Precitron.

The Isotope Business employs over 1,200 people at its Ottawa, Ontario head office and facilities in British Columbia, Quebec, and Europe. Some technical and production employees of MDS belong to the Public Service Alliance of Canada, a collective bargaining agent representing, among others, certain employees of the Government of Canada. Labour relations are judged to be good. In addition, AECL employees who operate the current Chalk River NRU reactor and those who will operate the MAPLE reactors have been deemed "essential service" and are consequently prohibited from striking.

### Strategy and Competition

MDS has a leading position as an international supplier of key isotopes. Security of supply is a significant objective for the majority of the Company's customers. The Company has developed a strong supply and logistics network to meet these demands. Current activity and investment, including the construction of the MAPLE reactors and processing facility, is intended to solidify the Company's position as a reliable source of supply. In addition, the Company is developing new and complementary lines of business based on its expertise with isotopes. For example, the cancer treatment market is expected to develop rapidly over the next several years, particularly in emerging economies. Many of these countries are now able to afford modern cancer therapies and are expected to make significant investments in this technology as their health care systems develop.

Partnerships for the development and manufacture of radiopharmaceuticals also represent a significant opportunity. MDS is capable of handling the complex manufacturing processes that are often required. New investment is planned in this area over the next few years.

Significant barriers to entry limit the competition faced by the Company in the medical isotopes market. Since molybdenum-99 is the most significant isotope on world markets, the majority of competition faced by the Company is in this product. Major competitors are Institut National des Radioelements (IRE) of Belgium and the Atomic Energy Corporation of South Africa.

Competition in the cobalt-60 market is different from the medical radioisotopes market due to the substantially different half-life of the products. Cobalt-60 is often bought and sold in large

quantities and can be produced by any of several nuclear reactors around the world. While delivery and logistics expertise remains a MDS advantage, the most significant competition in industrial irradiation and cobalt-60 supply comes from Reviss (a joint venture between Mayak, Russia and Nycomed Amersham) who acquire cobalt from Russian sources. Competition for sterilization spending also comes from alternative technologies, the most significant of which is electron-beam. The Company believes that radiation-based sterilization technologies continue to enjoy advantages over these competitive technologies in some applications. In addition, there is a significant installed base of industrial irradiators that will ensure that gamma irradiation remains a key technology in this market.

### Risks

MDS is dependent upon its suppliers (principally OPG, Hydro Quebec, and AECL) for its source of supply. Each of these entities is a Crown Corporation and is unionized. Because MDS is able to maintain an inventory of cobalt-60, a labour disruption at either OPG or Hydro Quebec would not significantly impact the Company's ability to meet normal customer requirements in the short-term. MDS has taken steps to lessen the risk that a labour disruption will cause an interruption in its source of supply of medical isotopes by establishing co-beneficial back-up arrangements with certain competitors.

MDS purchases cobalt 59 as a commodity. The processed cobalt 59 is inserted into nuclear reactors for periods of 18 to 24 months to convert it to cobalt 60. Access to these nuclear reactors to either install or remove cobalt is determined based on the routine maintenance schedule for the reactor facility. A significant change in a maintenance schedule could have a material impact on the availability of cobalt 60 in any given year. Although the operators of the facilities establish these schedules, we work closely with these suppliers to optimize the timing and availability of cobalt to meet our needs.

Certain medical isotopes that are purchased in reactors are by-products of the decay of the uranium fuel in the reactor. MDS obtains the majority of its uranium from the United States. Exports of uranium are strictly controlled by the US Department of Energy. Delays in obtaining uranium could cause supply disruption for certain isotopes. We work closely with regulators to ensure the risk of such disruption is minimized.

The Company has in place facilities and procedures designed to reduce and eliminate the risk of environmental contamination stemming from the processing of the raw materials. All Company facilities are government regulated and inspected. The Company also has in place a rigorous maintenance program to ensure continued compliance with all applicable regulations. Shipment containers and procedures are subject to international regulations and MDS has in place policies and procedures designed to ensure regulatory requirements are met.

### **3.3 – Health Segment**

Health businesses are those that supply products or services to individuals or institutions that, in turn, provide health care services directly to patients and consumers. Generally, the customers of the Company's health businesses consist of physicians, hospitals, and similar service providers. Services provided include routine clinical diagnostics, laboratory

management, laboratory automation technology, medical product distribution, and inventory management services.

### **3.3.1 – Diagnostic Business**

MDS is the largest operator of private sector clinical laboratories in Canada. Services provided by the Company include clinical laboratory testing for physicians and non-hospital health care institutions, management of hospital laboratories under contract and other support services for clinical diagnostics. In addition, the Company is developing a growing presence in the United States where it is managing hospital laboratories and directing business improvement and change processes at hospitals through joint venture relationships.

#### Industry Overview

In Canada, clinical laboratory testing is split roughly 75%/25% between hospital-based laboratories and private sector operated community laboratories. Hospital laboratories conduct the majority of in-patient and outpatient testing. In certain provinces hospital laboratories also handle community testing; however, in Ontario, private sector laboratories handle essentially all community testing. In Alberta, community and hospital testing is managed by regional health authorities and provided by both hospital and community laboratories.

All clinical testing is conducted on samples drawn from patients and based on requests received from physicians. Test results are reported back to physicians and are not made available directly to patients. Fees for most testing services (other than those performed in Quebec) are billed to a government health care agency according to a fixed fee schedule, subject in most cases to an overall fee cap. Most jurisdictions have eliminated coverage for certain diagnostic procedures (“delisted”) and fees for these services are billed directly to patients.

Although the customers of the laboratory services business are generally physicians and patients, the majority of funding for such services is provided under the terms of provincial health care programs. Company operations in each province are organized to conform to government payment programs existing in the relevant province.

In most provinces, operators of clinical laboratories are required to carry licences which determine the nature of tests which can be carried out at each facility and govern the ability of the operator to draw samples for testing purposes. Such licences are for a limited term (generally renewing annually) and their renewal is subject to government approval. In Alberta and Saskatchewan, licences have been replaced by service contracts with regional health authorities that run for various terms through 2002.

#### Business Overview

##### Canadian Market

The Company is active in all provinces west of the Maritimes either directly or through joint ventures. Approximately 40% of laboratory revenue originates in Ontario. A further 21% originates in British Columbia, 11% in Alberta, and 2% in other provinces. Laboratory revenue from US sources comprised approximately 26% of total laboratory services revenues

in 2002, up from 25% in 2001. The laboratory business of MDS is carried out through the following types of licensed locations:

*Patient Service Centre (PSC)* – a location which is licensed to draw samples from a patient, but which is not authorized to perform any testing procedures on the samples.

*Local laboratory* – a location that serves as both a PSC and as a testing facility. Such laboratories do not generally carry full testing approvals and therefore conduct only limited types of tests.

*Central laboratory* – a location to which all samples collected at PSCs are sent for testing, along with samples that cannot be tested at local laboratories.

At the end of 2002, MDS operated 214 patient service centres, 27 local laboratories, and 6 central laboratories, located from Quebec to British Columbia.

Laboratory fees are generally set provincially, following discussions between the operators of private laboratories and provincial ministry of health officials. In Ontario, the Ontario Association of Medical Laboratories represents private laboratories. Ontario fees have been established under an agreement that runs until March 31, 2003. In British Columbia, the British Columbia Medical Association (“BCMA”) negotiates fees on behalf of the laboratories. In 2002, a new fee agreement was reached with the British Columbia government that runs to March 2004 and replaces one that expired on March 31, 2001.

In Alberta, the fee-for-service system was replaced by bulk service contracts in each of the 17 regions established by the provincial ministry of health. MDS has operations in two of these regions. The Company’s has a 26.5% interest in, and is managing partner of, a partnership operating as Calgary Laboratory Services (“CLS”). This partnership includes the hospital laboratories that form part of the Calgary Regional Health Authority’s (“CRHA”) hospital laboratory operations. Under an agreement with the CRHA, CLS provides all laboratory services in the Calgary region, including laboratory services provided within hospitals. In Edmonton, the MDS Stirrat Laboratory organization, along with two competing laboratory firms, merged to form the Dynacare Kasper Medical Laboratories partnership, which has contracted with the Capital Regional Health Authority to provide both hospital and outpatient diagnostic services in the region. MDS owns 14.5% of this limited partnership.

In Saskatchewan, where fee-for-service has also been replaced by a lump sum payment system, MDS has negotiated contracts to provide services to the Regional Health Authority in the delivery of health services in the province.

MDS provides laboratory services in Quebec on a limited basis. Laboratory services in this province are generally provided by hospitals on an outpatient basis. Laboratory services provided by MDS in Quebec are billed directly to patients or physicians and constitute only a small portion of the testing conducted in the province.

In addition to the direct provision of testing services, the Company also provides laboratory management services and manufactures laboratory automation equipment and software. Often these related businesses operate hand in hand. In Canada, the Company has entered into agreements to provide laboratory management services to a number of hospitals and to groups of hospitals, primarily in the Ontario marketplace. These agreements generally provide for a fee-for-service related to the management of a laboratory located within a hospital.

The Company has also entered into direct partnerships with hospitals that combine management of in-house laboratories with construction of a centralized high volume laboratory serving a group of hospitals. MDS currently has three such partnerships, two of which are located in the US (partner indicated in brackets): Toronto Medical Laboratories (The University Health Network, formerly The Toronto Hospital); Integrated Regional Laboratories (Columbia/HCA Healthcare Inc. covering hospitals located in Florida); and, Memphis Pathology Laboratories, LLC (Baptist Memorial Health Care Corporation, covering hospitals located primarily in Tennessee). In addition, MDS manages the clinical laboratories of the Duke University Health Network under contract.

### United States Market

The US market is significantly different from Canada. Most hospitals in the US are privately owned (although many are owned by not-for-profit entities) and health care funding is substantially less dependent on government. Nevertheless, the role of government in setting health care policy and providing funding has grown. This force, combined with the role of Health Management Organizations (“HMOs”) has placed pressure on health care providers to operate more efficiently. Hospital reorganizations and mergers have led to opportunities to restructure laboratory services within hospitals and MDS has applied its expertise to this task within its US partnerships.

US operations ordinarily include management of on-site hospital laboratories, along with the creation of a central reference laboratory to service a network of local hospitals. Once established, these central laboratories also serve community-testing requirements for local doctors and clinics. MDS presently manages lab networks that service a total of 31 hospitals in five major metropolitan markets.

MDS Diagnostic Services entered into a collaborative alliance with ARUP, a leading esoteric testing laboratory based in Salt Lake City, Utah. ARUP will serve as the primary esoteric testing laboratory for our laboratory partnerships in the US.

The Diagnostic Business has over 5,300 employees located in Canada and the US. The majority of these employees are not covered by collective agreements. At October 31, 2000, employees in British Columbia, Alberta, and Saskatchewan, along with employees of certain of the Company’s hospital joint ventures, were subject to such agreements. MDS has not experienced a significant work stoppage due to labour activities and the Company believes that labour relations are good.

### Strategy and Competition

MDS has committed significant resources to the development of the hospital partnership businesses in recent years and expects to add additional partnerships in future years. The majority of development activity is focused in the United States where laboratory consolidations and improved laboratory efficiency have become primary areas of focus for health care providers.

Continued constraints on health care funding are a major factor affecting the business in both Canada and the US. In Canada, the existence of fee caps or block funding prevents the Company from increasing its revenues in line with increases in test volumes. Improved

efficiency is a key operating goal for the Company. Discussions with governments are focused on balancing service levels and testing volumes with fee caps.

These same forces create market opportunities that the Company seeks to take advantage of as hospitals work to provide laboratory services more efficiently. This is also true in the US. Major hospital networks are working to consolidate laboratory operations to bring increased efficiency to their laboratories. Hospital managers are also looking to bring community diagnostic work into hospitals (and away from community laboratory operators), to increase the profitability of their in-house laboratories.

The principal competitors in the private clinical laboratory services business in Canada are Dynacare Inc. and Canadian Medical Laboratories Inc. in Ontario, and BC Bio Laboratories Inc. in British Columbia. In the US, the Company is engaged in laboratory management services rather than the direct provision of laboratory testing. The majority of the target market of the Company is large hospitals and networks of hospitals. Although the Company is offering an alternative approach to reduce laboratory costs, the major competitors remain large clinical laboratory companies, including Quest Diagnostics Incorporated and Laboratory Corporation of America, Inc.

In addition to basic clinical laboratory testing, recent advances in technology have broadened the available diagnostic tools. MDS is actively pursuing new diagnostic methodologies, including the applications of mass spectrometry for diagnostic screening and proteomics (the study of protein interactions at a cellular level). It is expected that these new methodologies, and others, will enable diagnostics companies to develop new assays that can be used for routine screenings. They may also allow the creation of assays that permit the diagnosis and identification of disease state or genetic predisposition earlier than existing testing methodologies. MDS expects to invest in this expanded diagnostics field in future years.

### Risks

The operation of clinical laboratories is subject to significant government regulation. In Canada, all laboratories are subject to periodic government inspection and proficiency testing by government agencies. The Company has been subject to such government inspection in all provinces in which it operates. MDS has never been subject to disciplinary or other actions as a result of a failure to meet standards in any area prescribed by regulation.

Licences under which laboratories operate are for a limited term (generally renewing annually) and their renewal is subject to government approval. In addition, government agencies are empowered to revoke licences in the event of a failure by an operator to meet regulatory or other professional standards. Traditionally, renewals are automatic in the absence of significant regulatory or disciplinary action. The Company has never lost a licence due to non-renewal or direct revocation procedures by regulatory agencies.

In Alberta and Saskatchewan, licences have been replaced by service contracts with regional health authorities that run for various terms through 2003. The Company is in the first term of such a contract in Alberta and successfully renewed its Saskatchewan contracts for a second term. There is no reason to believe that further renewals will not occur at the end of the contract periods.

To conduct diagnostic tests, patient samples must be drawn and later analyzed by employees of the Company. The Company may be subject to errors and omissions related to the services it performs, and the risk of medical malpractice by laboratory personnel and pathologists. The Company maintains professional liability insurance against these risks but there is no assurance that the level of insurance will be adequate to fully protect the Company.

MDS expects that cost containment initiatives will remain a risk factor for health care businesses for the foreseeable future. For those provinces that continue to utilize a fee-for-service reimbursement model, migration towards lump-sum funding or capitation systems may serve to limit growth or even reduce revenue levels. However, such initiatives could also be expected to protect the market share of existing service providers.

To address these risks, MDS is continuing to invest in research and development focused on new, cost-saving technologies, including automation of routine, mechanical functions. More efficient methods of service delivery including improved laboratory management techniques, centralization of high volume testing currently performed in smaller on-site laboratories, and various supply chain management techniques are all dedicated to the reduction of cost and the elimination of waste within the systems.

MDS remains active with industry groups and as a member of advisory panels to governments and other agencies. Through negotiation with health care authorities, MDS and industry organizations have been able to reach settlements and retroactive reimbursements for testing volumes that exceeded stated funding levels. While there can be no guarantee that such settlements will be achieved in the future, management believes that negotiations with funding providers can lead to resolution of these issues. In addition, MDS is committed to on-going involvement and believes that this participation in the policy-setting process enables the Company to be aware of proposed policy changes and to respond properly based on the direction in which such changes may proceed.

The US clinical laboratory industry is subject to significant federal and state regulation, including inspections and audits by governmental agencies. Governmental authorities may impose fines, criminal penalties or take other enforcement actions to enforce laws and regulations, including revoking a clinical laboratory's right to conduct business. Changes in regulation may increase the costs of performing clinical laboratory tests. Billing and reimbursement for such testing is also subject to significant federal and state regulation. Penalties for violations of laws relating to billing federal healthcare programs and for violations of federal fraud and abuse laws are significant. MDS has not experienced any negative events resulting from these regulations.

### **3.3.2 – Distribution of Medical Products**

MDS conducts its distribution services business through a 50% interest in Source Medical Corporation. Source is engaged in general medical/surgical product distribution in Canada.

#### Industry Overview

The medical products industry is dominated by a limited number of product manufacturers. Distribution of medical/surgical products in Canada is fragmented and represented by a number of different distribution channels. Many multi-national companies have Canadian subsidiaries

that both manufacture and distribute their products on a direct basis. Most Canadian health care manufacturers are small in size and distribute their products through independent distribution channels. Overall, the medical/surgical devices industry (excluding pharmaceuticals) in Canada is estimated to be \$3 billion.

Source Medical is the largest and only national full service, independent distribution company in Canada specializing in medical/surgical products. There are a number of regional and local distributors in Canada competing in this marketplace. In addition, large manufacturers engage in direct selling and distribution of competing products. Many distributors specialize in particular product lines or types of products. Some carry a broad product range but focus on particular regions or categories of customers. A number of distributors provide only logistics services for manufacturers that do their own sales and marketing.

In recent years, growth in the overall medical/surgical products industry has been affected by hospital cost cutting. This has resulted in pressure on margins, in particular, on some of the service aspects of the business, including distribution. Companies providing these services have responded by consolidating their operations, adopting new business processes, and moving into just-in-time delivery and supply chain management services in an attempt to bring more value to their offerings.

### Business Overview

Through Source, the Company provides marketing, sales, distribution and after-sale service for products ranging from technologically sophisticated medical equipment to volume products such as syringes and patient care products. Source has established relationships with major medical product manufacturers to market and sell their products in Canada. Source also provides logistics management services and stockless inventory services to hospitals and other health care providers. Source operates nine distribution and dedicated warehouse facilities in all regions of the country.

The Distribution business employs over 500 and has no unions.

### Strategy and Competition

The distribution industry in Canada is expected to continue to be constrained by the funding pressures affecting health care generally. In response, new methods and services will develop. Operating efficiencies will be a key priority and Source is investing heavily in services and technologies to meet these demands. Health care customers are expected to seek to reduce their investment in supplies inventories, leading to further demands for stockless inventory and just-in-time delivery.

Major competitors in the distribution area include Livingston International Inc. and a number of regional and local distributors. As noted, a number of large, US-based product manufacturers also self-distribute their products and can therefore be considered competitors.

### Risks

The majority of the distribution agreements entered into by Source are for a fixed term and subject to commercially reasonable cancellation provisions. It has been the experience of both I&B and Allegiance (as predecessors to Source) that renewal of such agreements ordinarily occurs as a routine matter.

### **3.4 – MDS Proteomics**

MDS Proteomics Inc. is a drug discovery company focused on therapeutic product development based on its proprietary methods and know-how for the functional analysis of proteins. The company researches, discovers and intends to develop novel drugs for treating human diseases. MDSP's proprietary technology and know-how enable the discovery of protein drug targets believed to be difficult or impossible to discover using conventional methods. The company aims to increase clinical success rates and drug development productivity through the direct study of the human proteins primarily involved in health and disease. MDSP has delivered drug targets to collaborators and presently has a number of candidate drug targets in pre-clinical discovery.

MDSP has developed an automated, large-scale proteomics technology that seamlessly fuses pathway biology, computational design and ultra-sensitive mass spectrometry ("MS") systems and high-performance supercomputing. The Company's technology integrates numerous scientific and technical discoveries, inventions, know-how, observations, techniques and developments that its founders, scientists and MDS Inc. have pioneered and refined.

#### Industry Background

There are two main approaches to proteomics: expression proteomics and functional proteomics. Expression proteomics involves the study of proteins while functional proteomics is the study of how proteins interact with other cellular components in order to determine protein function. To understand how best to treat a particular disease, it is necessary to identify the proteins associated with that disease and to understand the manner in which the proteins function. Understanding the cause of a disease is critical in determining how best to treat the disease.

Currently, most drugs act by binding directly to proteins that are associated with a particular disease thereby modifying the activities of proteins and their cellular pathways. These proteins are called drug targets. Information about protein function therefore is important not only to learn about the underlying causes of disease, but also to identify better targets for new therapeutic drugs and diagnostic products. Understanding protein function represents a major opportunity to improve productivity in drug discovery and development.

Large pharmaceutical companies are under significant pressure to increase the productivity of their drug discovery processes and shorten the development timeframe in order to meet the annual growth rates expected by their shareholders. According to industry analysts, achieving these growth rates requires a large pharmaceutical company to introduce two or three major new drugs per year. The challenge for pharmaceutical companies is to identify the best drug targets from among what may be millions of proteins. This requires more efficient discovery and validation techniques. Proteomics will assist pharmaceutical companies in discovering and selecting new drug targets in a more focused and efficient manner.

## Business Overview

MDS established MDS Proteomics as a wholly owned subsidiary in 1999 to hold all the Company's proteomic businesses and related assets. Since inception, Proteomics has entered into a number of collaboration agreements focused on products, tools, and processes to speed drug discovery. The Company has also entered into strategic alliances with IBM Corporation, which is providing the Company's primary computer and network infrastructure and with Abgenix Inc., which will complement its current drug target capabilities. Both alliances have resulted in separate agreements to purchase the Company's common stock for cash proceeds.

Proteomics has facilities in Europe and North America that employ automated and efficient platforms to move from gene sequence information to drug lead identification, validation and development.

Proteomics employs approximately 125 employees worldwide.

## Strategy and Competition

Over the next several years, the Company's strategy will be focused on entering into a wide range of collaborations and alliances with major pharmaceutical and biotechnology companies to fully exploit its platform capabilities and generate revenue. Longer-term revenues will derive from the royalties on partnered products and from later stage development of Proteomics' internal drug discovery.

The field of proteomics is characterized by rapid technological change. The Company's success will depend in part upon its ability to develop and introduce new technologies, to analyze and map protein interactions faster and more effectively, to respond to the evolving requirements of collaborators and purchasers or licensors of intellectual property and database information, and to keep pace with technological developments and emerging industry standards. The Company may not be able to make the enhancements to its technology necessary to compete successfully with emerging technologies.

There is intense competition among companies seeking to develop products and services based on proteomic and genomic information and discoveries. Competition is felt from genomic, pharmaceutical and biotechnology companies, as well as academic, government and other research institutions in the United States, Canada and abroad. Many of the competing organizations have greater capital resources, research and development staffs, facilities and marketing capabilities. Greater competition is expected as established and new participants enter this market in the near future.

Competitors may discover or develop important drug targets, proteomics technologies or therapeutic drugs, which are more effective than those, developed by MDS or MDS's collaborators, or may obtain regulatory approvals more rapidly. In addition, these competitors may obtain patent protection or other intellectual property rights that would limit our rights or our collaborators' right or ability to commercialize therapeutic drugs or diagnostic products based on our discoveries.

## Risks

The development of new therapeutic drugs and diagnostic products based on proteomic information is new and virtually unproven. The usefulness of information and technology is largely unproven and the Company's collaborators or potential collaborators may determine that any products developed or services offered are not useful or cost-effective. If the Company is not successful in developing and commercializing products based on technologies or discoveries, it will be unable to generate sufficient revenues to maintain a viable business.

It is difficult to predict the Company's future liquidity and capital requirements because they depend on numerous factors, including the success of our business strategies and market developments. Over the next several years, the Company will require substantial additional capital to fund capital expenditures, working capital and on-going operations. The Company may not be able to generate sufficient cash from operations to meet these requirements. In addition, the availability of capital in the past two years has been scarce and may increase the risk of raising significant capital in the future which may dilute MDS's interest in the company.

In order to develop, manufacture and sell therapeutic drugs and diagnostic products in the United States, Canada, and elsewhere, the Company must comply with a variety of statutes and regulations. These laws govern the development, testing, manufacture, safety, efficacy, record keeping, labeling, storage, approval, advertising, promotion, sale and distribution of pharmaceutical products. The Company may not be able to obtain the required regulatory approvals or comply with the applicable regulatory requirements for any products developed and therefore may not be able to commercialize the products developed.

Therapeutic drugs and diagnostic products require significant development, preclinical and clinical testing and investment of significant funds prior to their commercialization. The process of completing development, preclinical and clinical testing and obtaining subsequent approvals will likely take more than 10 years from the time a compound is identified. Certain material changes to an approved product such as manufacturing changes are subject to further regulatory review and approval. Any required approvals, once obtained, may be withdrawn. These changes could also affect the Company's compliance with other regulatory requirements and may adversely affect the Company's ability to generate revenues or royalties.

Significant resources will be devoted to applying for patents on proteins, protein pathways, protein functions, antigens, antibodies and small molecule drugs, as well as for the related technologies developed. However, the Company may not be able to develop technology that is patentable, patents may not be issued in connection with any of our pending applications and claims allowed may not be sufficient to protect our technologies. The Company, or any of our collaborators, may not be able to obtain patent protection for products discovered using the Company's technologies.

### 3.5 – Other Businesses

#### 3.5.1 – MDS Capital Corp.

MDS Capital Corp., in which MDS has a 48% interest, is the largest venture capital and fund management company in Canada focused on the health care and life sciences industry. It is also one of the largest such firms in the world. The company manages approximately \$1 billion through nine funds, including three funds open to public investors. MDS Capital Corp. earns management fees from these funds, including incentive fees based on the overall success of the funds.

Among the funds managed by MDS Capital Corp., is MDS Health Ventures Inc. in which MDS has a 44% direct interest, and which was the first venture capital fund organized by the Company.

### 3.6 – Principal Facilities

A complete list of MDS locations is provided on page 37 of the 2002 Annual Report Financial Review. Following are the principal operating facilities of the Company as at October 31, 2002:

<b>Location of Facility</b>	<b>Type of Facility</b>	<b>Owned/Leased</b>	<b>Segment</b>
Toronto, Canada	Corporate Head Office	Owned	Corporate
Toronto, Canada	Central Reference Laboratory	Owned	Health
Richmond, Canada	Central Reference Laboratory	Owned	Health
Kanata, Canada	Manufacturing Plant	Owned	Life Sciences
Fleurus, Belgium	Manufacturing Plant	Leased	Life Sciences
Uppsala, Sweden	Office and Development Facility	Leased	Life Sciences
Belfast, UK	Clinical Trials Facility	Owned	Life Sciences
Concord, Canada	Manufacturing Plant	Owned	Life Sciences
Hamburg, Germany	Clinical Trials Facility	Leased	Life Sciences

Irvine, USA	Corporate Office	Leased	Life Sciences
Lincoln, USA	Clinical Trials Facility	Owned	Life Sciences
Lyon, France	Research Facility	Owned	Life Sciences
Montreal, Canada	Research Laboratory and Clinical Trials Facility	Leased	Life Sciences
Madrid, Spain	Clinical Trials Facility	Owned	Life Sciences
Paris, France	Clinical Trials  Laboratory	Leased	Life Sciences
Seattle, USA	Research Laboratory	Leased	Life Sciences
Tampa, Florida	Manufacturing Plant	Owned	Life Sciences
Taipei, Taiwan	Research Laboratory	Owned	Life Sciences
Berkshire, UK	Clinical Trials Facility	Leased	Life Sciences
Zurich, Switzerland	Research Laboratory	Leased	Life Sciences
Mississauga, Ontario	Distribution Centre	Leased	Health
Toronto, Ontario	Research Laboratory	Leased	Proteomics

### **3.7 – Research and Development**

Research and Development Costs are described in Note 11 to the Financial Statements set forth on page 25 of the Annual Report Financial Review, which is incorporated by reference into this AIF.

### **3.8 – Environmental Compliance**

The Company has established a management system that provides an over-arching framework and the common requirements for the management of environment, health and safety ("EHS") issues across MDS operations globally. The standards articulated in the management system define the accountability placed on MDS management worldwide for the control of EHS risks and the development of related EHS programs. The standards require MDS operations to conduct regular EHS assessments of company activities, establish remedial and contingency plans to deal with any incidents, and establish regular processes to report to senior corporate

management and to the Board through the Environment, Health, and Safety Committee of the Board on the environmental status of the Company and its subsidiaries. MDS believes its approach to EHS compliance meets the regulated requirements and it is not expected that this policy will have a significant impact on capital expenditures.

### **3.9 – Other Risk Factors**

#### **3.9.1 – Insurance**

The Company maintains a global liability insurance policy covering all of its operating units. The program provides coverage for normal operating risks and includes liability coverage to \$70 million for isotope liabilities and \$60 million for liabilities in other businesses. There is no certainty that the amount of coverage is adequate to protect the Company in all circumstances or that the Company will be able to acquire such insurance on an on-going basis at rates and on terms which are acceptable to the Company.

The Company also maintains a global policy covering property and business interruption risks with a total insured value of \$750 million, and directors' and officers' insurance having a limit of \$100 million.

#### **3.9.2 - Nuclear Liability**

Nuclear liability (that is, liability for claims, from a third party caused by fissionable materials or substances coming in contact with fissionable materials) rests with the operator of a nuclear facility. MDS does not currently operate any nuclear facilities and while the Company owns the MAPLE facility, Atomic Energy of Canada Limited is the operator under the terms of our contract with them. Under the Canada Nuclear Liability Act MDS bears no liability for a nuclear incident.

#### 4 – SELECTED CONSOLIDATED FINANCIAL INFORMATION

##### 4.1 – Summary Annual Information (Year to October 31)

(\$ millions except per share amounts)	2002	2001	2000	1999	1998
<b>Consolidated Statements of Income</b>					
Revenues	\$1,792	\$1,636	\$1,435	\$1,183	\$1,002
Operating income	212	154	178	154	102
Income before goodwill amortization	105	116	128	91	52
Net income	105	73	110	82	44
Earnings per share before goodwill amortization	\$0.75	\$0.83	\$1.01	\$0.78	\$0.45
Earnings per share (2,3)	\$0.75	\$0.52	\$0.86	\$0.70	\$0.52
<b>Consolidated Statements of Financial Position</b>					
Capital employed (4)	\$1,951	\$1,787	\$1,619	\$934	\$874
Total assets	2,542	2,402	2,372	1,299	1,069
Long term debt	615	553	551	213	191
Total shareholders' equity	1,354	1,243	1,185	669	506
Weighted average shares outstanding	144.0	139.6	1280	116.7	113.0
Long term debt/shareholders' equity	45%	45%	46%	32%	38%
Current ratio	1.71	1.48	1.67	1.24	1.36
<b>Consolidated Statements of Cash Flows</b>					
Cash from operations	274	152	\$169	\$128	\$104
Capital assets purchased	152	115	135	143	94
Acquisitions	(7)	15	214	53	26
Net repayment (issues) of long-term debt	(58)	16	(256)	(17)	(39)

Notes

(1) Capital employed consists of total assets (excluding cash) less non-interest bearing liabilities.

##### – Summary Quarterly Information (\$ millions except per share amounts)

For year-end reporting purposes for 2000, MDS adopted the new Canadian Institute of Chartered Accountants recommendations on accounting for income taxes and adopted the accrual method of accounting for post employment benefits. The tables below provide the quarterly results of the Company for its 2001 and 2002 fiscal years on this new basis.

	<b>Fiscal 2002</b>				<b>Fiscal 2001</b>			
	<b>Jan. 31</b>	<b>Apr. 30</b>	<b>July 31</b>	<b>Oct. 31</b>	<b>Jan. 31</b>	<b>Apr. 30</b>	<b>July 31</b>	<b>Oct. 31</b>
Revenues	418	448	451	475	394	407	407	428
Operating expenses	378	384	392	426	319	376	348	387
Restructuring charge	-	-	-	-	-	-	-	-
Operating income	40	64	59	49	75	33	59	41
Interest expense	(4)	(5)	(4)	(4)	(6)	(4)	(6)	(4)
Dividend and interest income	2	2	1	1	4	3	3	2
Minority interest	-	(1)	(2)	(2)	(1)	(1)	(1)	1
Income before income taxes	38	60	54	44	72	31	55	40
Income taxes	(20)	(28)	(24)	(19)	(15)	(15)	(33)	(19)
Income before amortization of goodwill	18	32	30	25	57	16	22	21
Amortization of goodwill	-	-	-	-	(8)	(9)	(10)	(16)
Net income	18	32	30	25	49	7	12	5
Earnings per share	0.35	0.05	0.09	0.04	0.35	0.05	0.08	0.04
Earnings per share before amortization of goodwill	0.13	0.11	0.22	0.18	0.41	0.11	0.16	0.15

### 4.3 – Dividends

The Company converted its Class A and Class B shares into Common shares in 2000. The Company has paid dividends on its Shares during the last five years as set out in the following table (dividends on Class A and Class B shares do not reflect the impact of the September 2000 share dividend):

<u>Fiscal Year</u>	<u>Dividends per Class A Common Share</u>	<u>Dividends per Class B Non-Voting Share</u>	<u>Dividends per Common Share</u>
1998	\$0.1150	\$0.1275	
1999	\$0.1300	\$0.1425	
2000			\$0.0788
2001			\$0.0826
2002			\$0.0863

Dividends are discretionary and there are no restrictions preventing the payment of dividends. Historically, dividends have been declared payable in April and October.

### 5 – MANAGEMENT’S DISCUSSION AND ANALYSIS

Please refer to the disclosure contained on pages 1 through 13 of the Annual Report Financial Review under the heading "Management Discussion and Analysis" which is incorporated by reference into this AIF.

### 6 – MARKET FOR SECURITIES

The outstanding Common Shares of the Company are listed for trading on the Toronto Stock Exchange (symbol - MDS) and the New York Stock Exchange (symbol – MDZ).

### 7 – DIRECTORS AND SENIOR CORPORATE OFFICERS

Each director is elected to serve until the next annual meeting of the Company or until his or her successor is elected or appointed. The name, municipality of residence, position with the Company and principal occupation of the directors and officers of the Company are as follows and the year each director first became a director is in brackets after the word "Director":

**Directors**

<b>Name &amp; Address</b>	<b>Position Held</b>	<b>Principal Occupation</b>
Clarence Chandran Cary, North Carolina, (C, H)	Director (2001)	Chair, The Chandran Family Foundation Inc.; Retired (Formerly COO and Director, Nortel Networks Corporation)
Wendy K. Dobson, Uxbridge, Ontario (C, H)	Director (1995)	Professor and Director, Centre for International Business, University of Toronto
William A. Etherington Toronto, Ontario (A, C)	Director (2001)	Corporate Director (formerly Senior VP & Group Executive, Sales & Distribution, IBM Corporation; and General Manager, IBM Europe Middle East Africa)
Dr. John R. Evans Toronto Ontario (C, H)	Director (1989)	Chairman, Torstar Corporation
Wilfred G. Lewitt Toronto, Ontario	Director (1970) Chairman of the Board	Chairman, MDS Inc.
Robert W. Luba Toronto, Ontario (A, C)	Director (1996)	President, Luba Financial Inc.
Mary Mogford Newcastle, Ontario (C,E, H)	Director (1998)	Corporate Director; Partner, Mogford Campbell Associates, Inc.
John A. Rogers Toronto, Ontario	Director (1993) President	President & Chief Executive Officer, MDS Inc.
Nelson Sims Key Largo, Florida (A, C, E)	Director (2001)	Corporate Director (formerly Executive with Eli Lilly and Company and President, Eli Lilly Canada, Inc.)
R. Michael Warren Owen Sound, Ontario (C,A)	Director (1976)	Chairman, The Warren Group Inc.

(A) Audit Committee

(C) Corporate Governance & Nominating Committee

- (E) Environment, Health, & Safety Committee
- (H) Human Resources & Compensation Committee

<b>Other Corporate Officers Name &amp; Address</b>	<b>Principal Occupation</b>
Andrea Bodnar Toronto, Ontario	Senior Vice President & CIO
Robert W. Breckon Oakville, Ontario	Executive Vice-President, Corporate Development
Peter E. Brent Toronto, Ontario	Senior Vice-President & General Counsel and Corporate Secretary
Mary Federau Toronto, Ontario	Senior Vice-President, Talent Development
John D. Gleason Oakville, Ontario	Senior Vice-President, Business Development
Gary W. Goertz, Bolton, Ontario	Executive Vice-President, Finance and Chief Financial Officer
Ian Lennox, Oakville, Ontario	Group President & CEO, Pharmaceutical & Biotech Markets
Wilfred G. Lewitt Toronto, Ontario	Chairman
Sharon Mathers Toronto, Ontario	Vice-President, Investor Relations & Corporate Communications
John Morrison Toronto, Ontario	Group President & CEO, Healthcare Provider Markets
James M. Reid Oakville, Ontario	Executive Vice-President, Organization Dynamics
John A. Rogers Toronto, Ontario	President & Chief Executive Officer
Edward K. Rygiel Toronto, Ontario	Executive Vice-President, and President & CEO, MDS Capital Corp.



Additional financial information is also provided in the Financial Statements set forth in the Company's 2002 Annual Report that is incorporated by reference to this AIF. A copy of the Annual Report may be obtained upon request from the Company.

When the securities of the Company are in the course of a distribution pursuant to a short form prospectus or a preliminary short form prospectus, the following documents may be obtained upon request from the Corporate Secretary of the Company:

- a) the Company's AIF, together with any documents incorporated by reference in the AIF,
- b) the comparative financial statements for its most recently completed financial year together with the accompanying report of the auditor and any interim financial statements of the Company,
- c) the Company's information circular for its meeting of shareholders in respect of its most recent annual meeting