CANADA. M.O.S.S.T.

CURRENT DIRECTIONS IN SCIENCE POLICY.

CANADA. M.O.S.S.T.

CURRENT DIRECTIONS IN SCIENCE POLICY.

Ministry of State
Science and Technology Canada

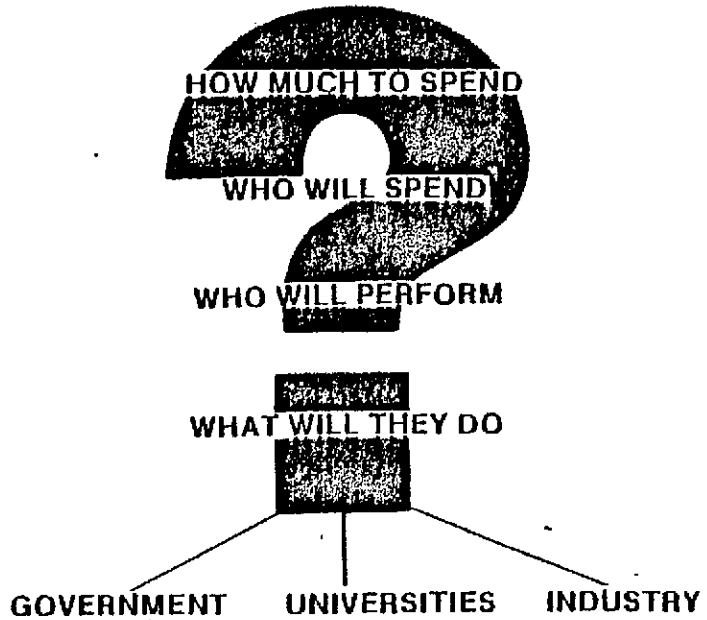
Ministère d'État
Sciences et Technologie Canada

CURRENT DIRECTIONS IN SCIENCE POLICY

Canada

IN ESTABLISHING SCIENCE POLICY THESE QUESTIONS HAVE TO BE ANSWERED.

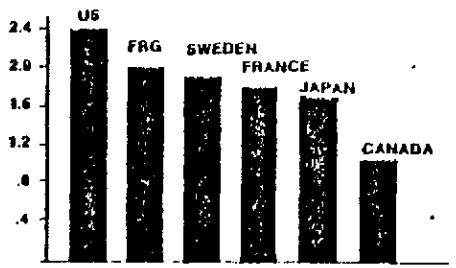
THE NUB OF POLICY



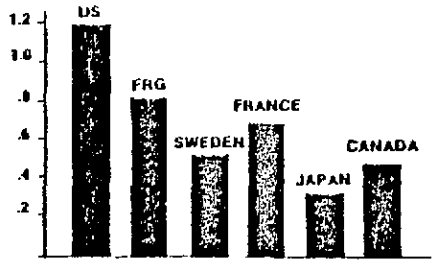
CANADA IN COMPARISON WITH OTHER COUNTRIES

WHAT IS THE SITUATION?

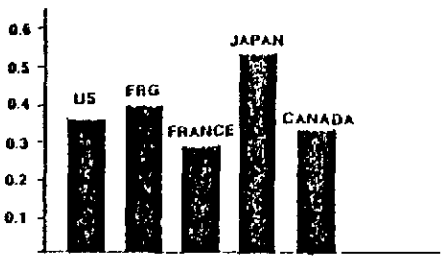
% GERD OF GNP



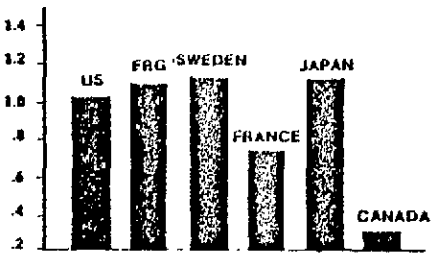
GOVERNMENT SECTOR FUNDING SHARE



UNIVERSITY SECTOR PERFORMANCE SHARE



INDUSTRY SECTOR FUNDING SHARE

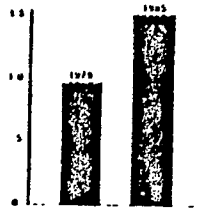


TO CORRECT STRUCTURAL PROBLEMS

THE FEDERAL GOVERNMENT HAS FORMALLY AND VISIBLY COMMITTED ITSELF TO A PLANNING FRAMEWORK FOR R & D SPENDING.

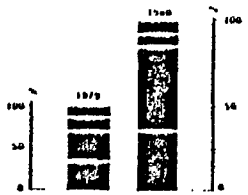
IMPACTS OF R & D TARGET

THE TARGET
% GERD OF GNP



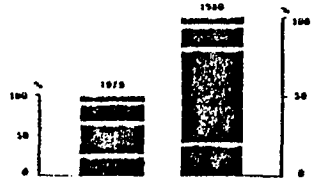
THE PLANNING FRAMEWORK SETS A TARGET FOR NATIONAL EXPENDITURES ON R&D OF 1.5% OF GNP FROM ITS 1979 LEVEL OF 0.9%

IMPACTS ON SECTORS
AS FUNDERS



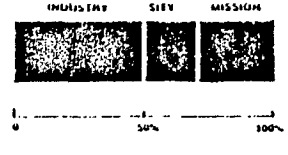
THE MOST DRAMATIC INCREASE IN EXPENDITURES WILL BE IN THE INDUSTRIAL SECTOR. IN TERMS OF CURRENT DOLLARS INDUSTRY IS ASKED TO INCREASE ITS EXPENDITURES BY 27% PER ANNUM. THE FEDERAL GOVERNMENT IS TO INCREASE ITS EXPENDITURES BY 17% AND UNIVERSITY R&D EXPENDITURES IS TO INCREASE BY 9%.

IMPACTS ON SECTORS AS PERFORMERS



KEY TO THE DRAMATIC INCREASES IN INDUSTRIAL R&D PERFORMANCE WILL BE THE EFFORTS OF INDUSTRY AND THE IMPACT OF GOVERNMENT TRANSFERS.

DISTRIBUTION OF INCREASED FEDERAL GOVERNMENT EXPENDITURES BY R & D ROLES



APPROXIMATELY 50% OF THE INCREASED FEDERAL EXPENDITURES ON R&D WILL GO TO INDUSTRY. THE REMAINDER WILL GO TO THE MISSION-ORIENTED ACTIVITIES OF GOVERNMENT AND TO THE UNIVERSITIES.

THE FRAMEWORK IS A MAJOR ACCOMPLISHMENT

— A TURNING POINT IN R & D POLICY

— A CHALLENGE

— ATTAINABLE

— ACCEPTED BY MINISTERS

— VISIBLE GUIDANCE FOR ALL SECTORS

— ALLOWS PERFORMANCE MEASUREMENT

CONCLUSION

WE HAVE A SCIENCE POLICY

WE KNOW WHERE WE ARE

WE KNOW WHERE WE ARE GOING

1981 - 82 Budget Breakdown for

GOVERNMENT SCIENCE

TOTAL S&T	**$2.5 BILLION**
TOTAL R&D	**$1.5 BILLION**

THE FEDERAL GOVERNMENT IS INVOLVED IN FUNDING R&D

WHY?

SOMETIMES ONLY GOVERNMENT CAN DO THE JOB

FOR EXAMPLE

SUPPORTING ECONOMIC & SOCIAL DEVELOPMENT
- INDUSTRY SUPPORT PROGRAMS

SUPPORTING DEPARTMENTAL MISSIONS
- NATIONAL DEFENCE

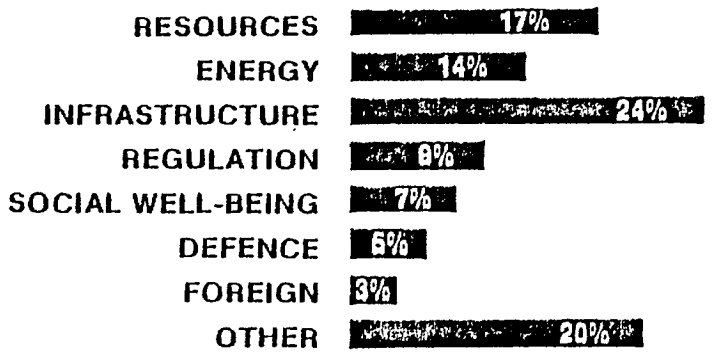
ENSURING TRAINING, SKILLS, HQM
- NSERC

MEETING LONG TERM RISK
- FUSION

ENSURING CONTINUITY OF VITAL RESEARCH
- NRC

THE FEDERAL GOVERNMENT SPENDS ITS SCIENCE AND TECHNOLOGY BUDGET...

ON WHAT?



FEDERAL SCIENCE SPENDING IS A VITAL ELEMENT IN OUR ECONOMIC DEVELOPMENT. GOVERNMENT EXPENDITURES SUPPORT THE DEFENCE INDUSTRIES, REGULATORY WORK (SUCH AS HEALTH), UNIVERSITIES AND THE DISSEMINATION OF SCIENCE AND TECHNOLOGY INFORMATION.

FEDERAL GOVERNMENT S&T TOUCHES ALL ASPECTS OF SOCIETY...

MINERALS HUMAN HEALTH ENERGY
NORTHERN DEVELOPMENT WEATHER AND CLIMATE
CULTURE AND RECREATION ENVIRONMENT
SPACE ADVANCEMENT OF SCIENCE OCEANS
FRESH WATER COMMUNICATIONS
FOOD SOCIAL DEVELOPMENT HOUSING
DEVELOPING NATIONS OFFICIAL LANGUAGES
DOMESTIC SECURITY FORESTRY
ANIMAL HEALTH TRANSPORT CONSTRUCTION

In some cases, without government involvement, little or no R&D would be done. The federal government is the research arm of the agricultural industry, and to a lesser extent, of the forest industry.

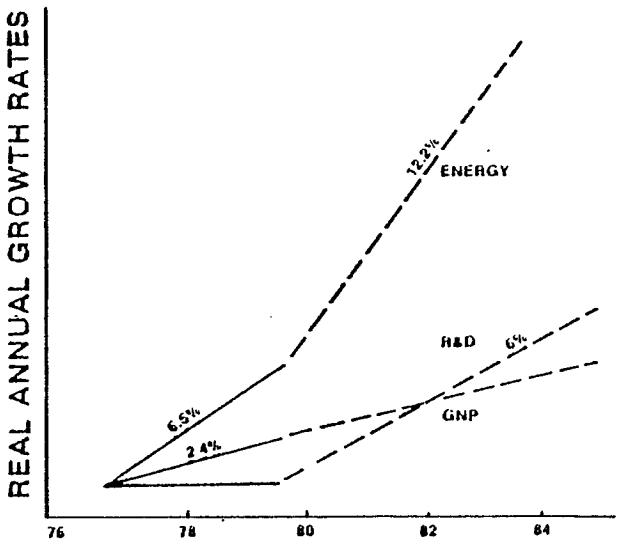
It supports regulation responsibilities of Health and Welfare. Federal support is vital to Canada's energy policy.

AND IT WORKS!

GOVERNMENT SCIENCE HAS HELPED BRING ABOUT SUCCESSES

— RAPESEED (CANOLA)
— SPACE SATELLITES
— NRC/CISTI NRC/ITIS
— TELIDON
— CORN
— DATA BUOY
— COMPUTER AIDED DESIGN

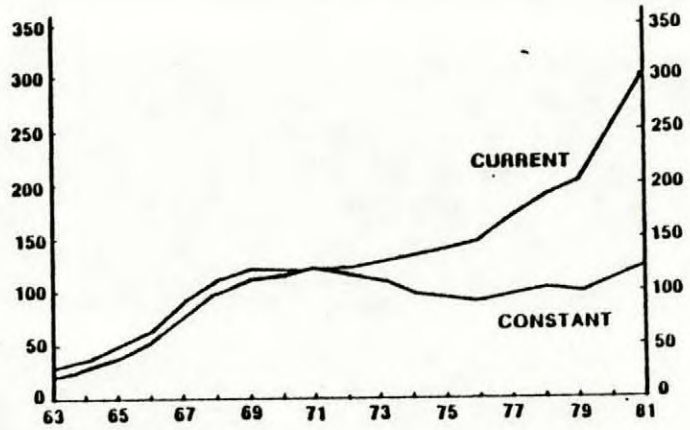
AFTER A PERIOD OF RETRENCHMENT — THINGS ARE MOVING AGAIN!



R&D HAS A HIGHER GROWTH RATE THAN CANADA'S GNP. AS A SPECIFIC EXAMPLE, EXPENDITURES ON ENERGY R&D ARE NOW INCREASING DRAMATICALLY. ENERGY HAS BECOME THE TOP SPENDER OF GOVERNMENT SCIENCE MONEY FOLLOWED BY FOOD, HEALTH AND NATIONAL SECURITY.

FEDERAL EXPENDITURES ON UNIVERSITY R&D

(MILLION $)



IN THE 1970'S, GOVERNMENT EXPENDITURES ON UNIVERSITY RESEARCH DECLINED, LEADING TO DISCONTENT AND DIFFICULTIES FOR UNIVERSITY RESEARCHERS.

STAGNANT 70's

— AFTERMATH OF 60's GROWTH
— IMBALANCE IN RESEARCH SPENDING
— TOO MANY PHD'S
— STRUCTURAL WEAKNESS OF COUNCILS

UNIVERSITIES NEEDED A PERIOD OF CONSOLIDATION AFTER THE UNRESTRICTED GROWTH OF THE 1960's.

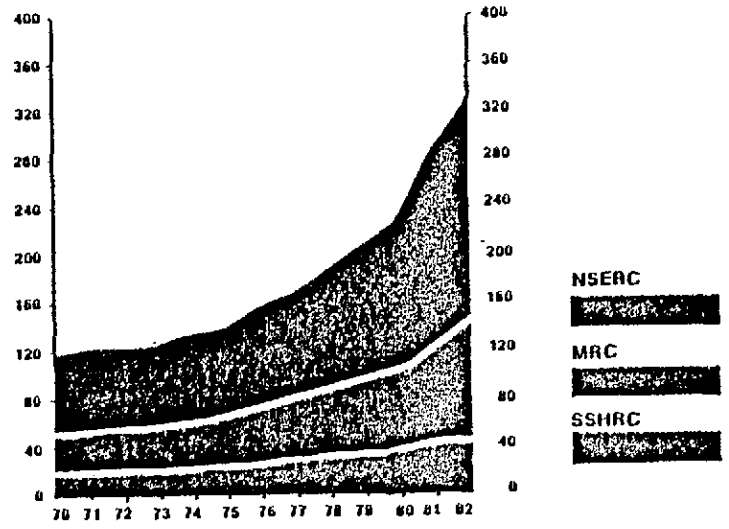
INITIATIVES TO REVERSE TRENDS

— LEGISLATION TO REORGANIZE COUNCILS
— THE ROLE OF UNIVERSITY RESEARCH
— THE OBJECTIVES OF THE COUNCILS
— COUNCIL FIVE-YEAR PLANS

THE GRANTING COUNCILS WERE REORGANIZED IN 1977-78 TO GIVE MORE VISIBILITY TO UNIVERSITY RESEARCH AT THE FEDERAL LEVEL. THE GOVERNMENT RE-EMPHASIZED THE IMPORTANCE OF UNIVERSITY RESEARCH AND OF UNIVERSITIES AS THE MAIN SOURCE OF RESEARCH MANPOWER. THE GOVERNMENT THEN AGREED THAT THE COUNCILS SHOULD ADOPT 5-YEAR PLANS AND LINK UNIVERSITY RESEARCH TO NATIONAL RESEARCH NEEDS.

THE COUNCILS' NEW OBJECTIVES EMPHASIZE THE IMPORTANCE OF RELATING RESEARCH TO NATIONAL GOALS AND REGIONAL BALANCE.

COUNCIL BUDGETS
($ MILLIONS)



SINCE THE 5-YEAR PLANS WERE TABLED WITH GOVERNMENT, THERE HAS BEEN AN OVERALL INCREASE OF ABOUT 45% TO THE GRANTING COUNCILS' BUDGETS.

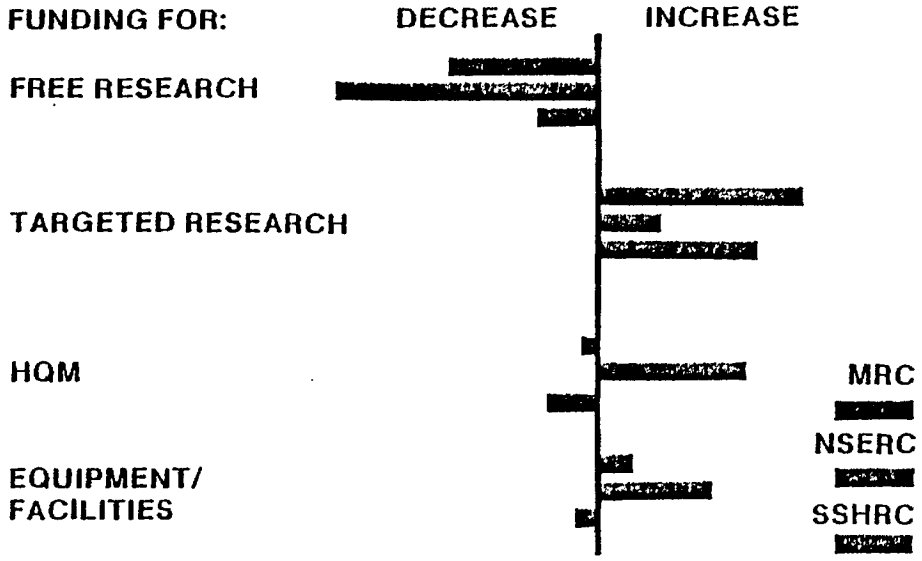
GRANTING COUNCIL BUDGETS

($ MILLIONS)

	1979-80	1981-82	INCREASE	%
MRC	70.0	100.2	30.2	43
NSERC	121.0	201.5	80.5	67
SSHRC	35.9	45.6	9.7	27
TOTAL	226.9	347.3	120.4	53

COUNCIL RESPONSE

CHANGES IN BUDGET DISTRIBUTIONS
1979-80 to 1981-82

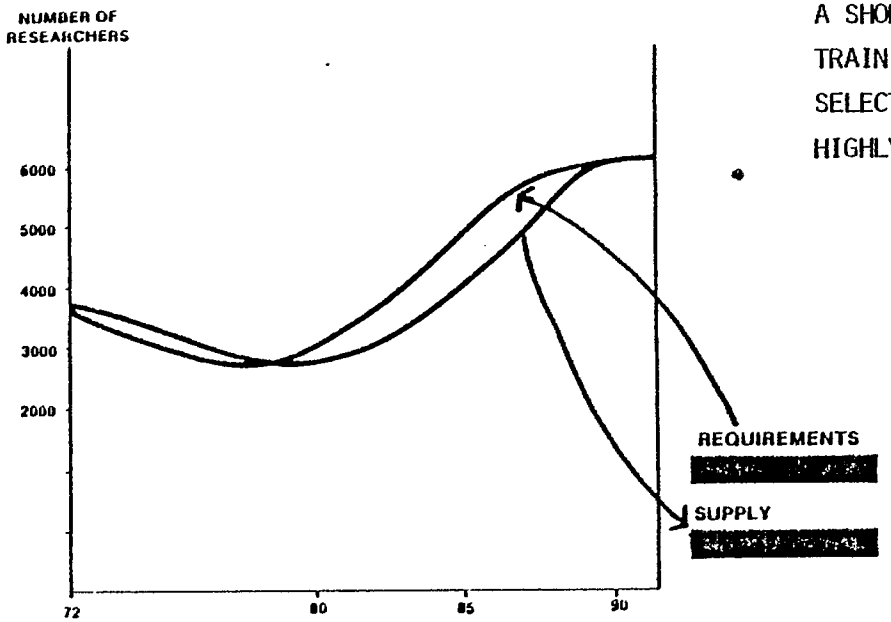


THE GRANTING COUNCILS HAVE CHANGED THEIR PROGRAM SPENDING FROM FREE RESEARCH TO TARGETED RESEARCH. NRC AND NSERC HAVE ESPECIALLY SUPPORTED THE TRAINING OF HIGHLY QUALIFIED MANPOWER. NSERC HAS ALSO RECOGNIZED THE IMPORTANCE OF REPLENISHING EQUIPMENT INVENTORIES.

REACTION OF UNIVERSITY COMMUNITY

- HIGHER PROFILE FOR UNIVERSITY RESEARCH
- BEST RESEARCHERS INVOLVED IN STRATEGIC RESEARCH
- INFUSION OF NEW RESEARCHERS
- MORE SENSITIVE TO NATIONAL NEEDS

RESEARCH MANPOWER



THE 1970'S SAW A SURPLUS OF RESEARCH MANPOWER. IN THE 80'S THERE WILL BE A SHORTFALL. RESEARCHERS NEED LENGTHLY TRAINING. CANADA WILL BE LOOKING AT SELECTIVE IMMIGRATION TO FILL ITS HIGHLY-QUALIFIED MANPOWER NEEDS.

RESEARCH MANPOWER

SHORTFALLS ANTICIPATED:

- ENGINEERING
- COMPUTER SCIENCE
- BIOTECHNOLOGY
- MANAGEMENT
- AGRICULTURE
- FORESTRY

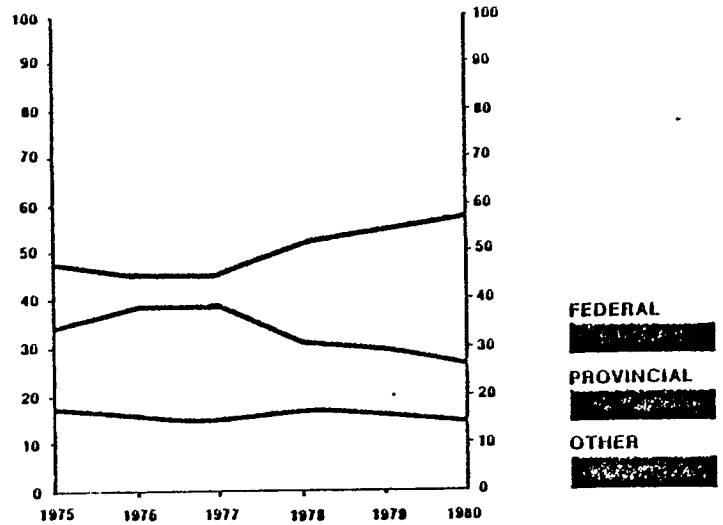
INDUSTRY MUST LOOK AT CREATING ATTRACTIVE CAREERS FOR RESEARCHERS AND PERHAPS AT DRAWING RESEARCHERS FROM OTHER INDUSTRY SECTORS. WE MUST MAKE SURE THERE ARE NO BARRIERS TO THE MOVEMENT OF TALENT TO WHERE IT IS NEEDED.

CONCENTRATION OF RESOURCES

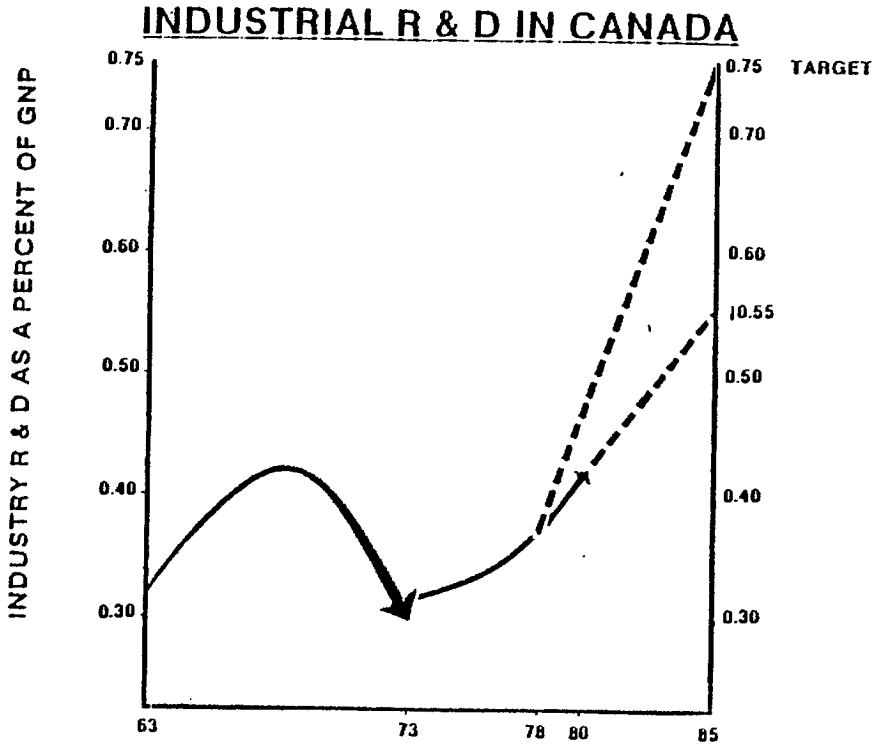
— THE NEED TO SPECIALIZE
— RECENT INITIATIVES
— RIGIDITIES IN THE SYSTEM

THE INCREASING COST OF RESEARCH AND OUR LIMITED RESOURCES ARE FORCING THE COUNCILS TO LOOK AT WAYS OF CONCENTRATING OUR RESOURCES AND OF INTEGRATING OUR EFFORTS. THERE ARE INDICATIONS THAT THIS IS ALREADY HAPPENING.

POST-SECONDARY EDUCATION FUNDING
(% DISTRIBUTION)



THE FEDERAL GOVERNMENT HAS BEEN FUNDING AN INCREASING PROPORTION OF UNIVERSITY RESEARCH THROUGH FISCAL TRANSFER. IN 1977, THE FEDERAL GOVERNMENT FUNDED 45%, WHILE TODAY IT FUNDS 60% OF UNIVERSITY RESEARCH. THE PROVINCIAL SHARE OF THESE EXPENDITURES HAS DECREASED PROPORTIONATELY. THE FEDERAL GOVERNMENT IS CONCERNED THAT ITS CONTRIBUTION IS NOT KNOWN PUBLICLY AND THUS THAT FEDERAL PROGRAMS ARE NOT PUBLICLY ACCUNTABLE. THEREFORE, THE FEDERAL GOVERNMENT, ASSISTED BY MOSST, IS RE-EVALUATING FEDERAL OBJECTIVES IN UNIVERSITY RESEARCH. THE CHIEF FEDERAL CONCERN IS THAT THE LEVEL AND QUALITY OF UNIVERSITY RESEARCH BE MAINTAINED. THIS OCCASION PRESENTS AN OPPORTUNITY TO DEVELOP A NEW APPROACH TO THE FINANCING OF UNIVERSITY RESEARCH AND A BETTER DEFINITION OF THE FEDERAL ROLE IN THAT FINANCING.

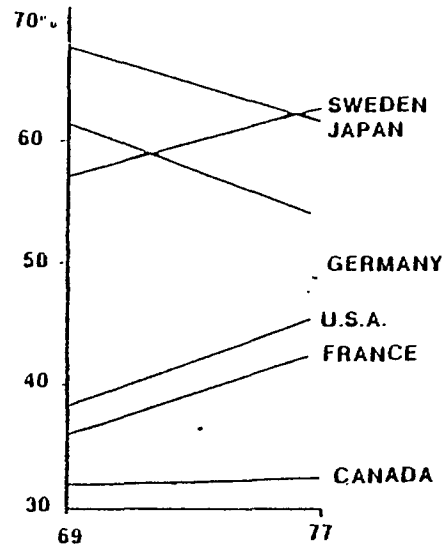


THE KEY PROBLEM IN R&D IN CANADA IS UNDERINVESTMENT BY THE PRIVATE SECTOR. THE BROKEN LINE SHOWS THE TRACK INDUSTRY WILL HAVE TO FOLLOW TO REACH THEIR .75% OF GNP BY 1985.

THE AREA BETWEEN THE DOTTED LINES IS THE "POLICY GAP". THAT IS, IT IS A GRAPHIC REPRESENTATION OF THE DEGREE OF ADDED POLICY SUPPORT INDUSTRY WILL NEED TO MEET ITS GOAL.

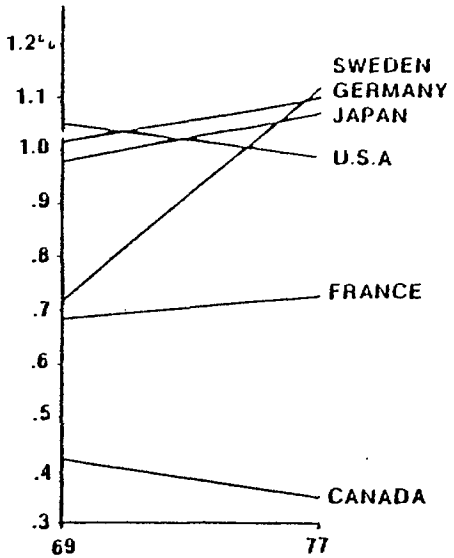
INTERNATIONAL COMPARISONS

INDUSTRIAL R & D
AS A % OF TOTAL R & D



CANADIAN INDUSTRY PERFORMS POORLY IN R&D COMPARED TO OTHER COUNTRIES.

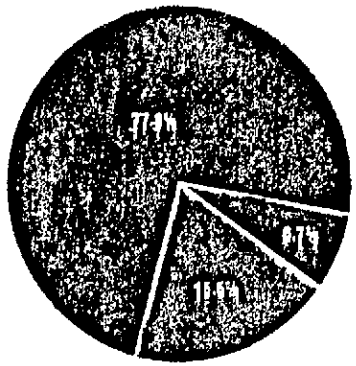
INDUSTRIAL R & D AS
A % OF GDP



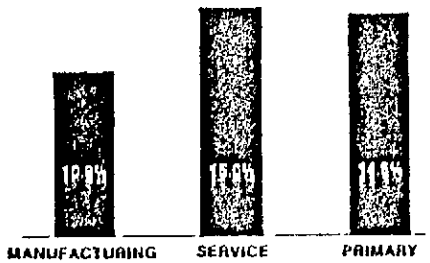
BETWEEN 1969-77, INDUSTRIAL R&D AS A % OF GDP DROPPED OFF, BUT IT HAS SINCE STARTED ITS RECOVERY. NOTE THE RAPID INCREASE IN SWEDEN.

R & D INVESTMENT BY SECTOR

COMPARATIVE SIZE (1977)



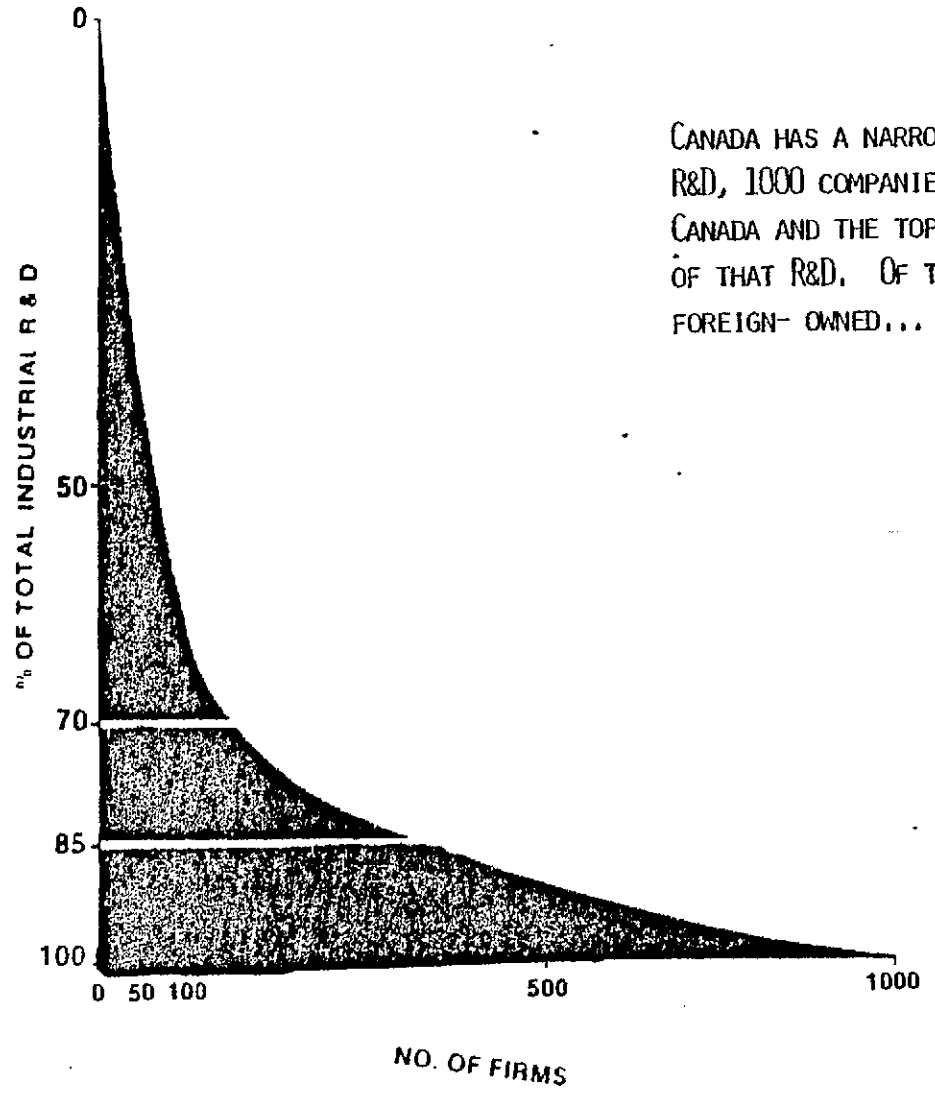
AVERAGE ANNUAL GROWTH (1971-78)



THE MANUFACTURING SECTOR DOES ABOUT 3/4 OF R&D BY INDUSTRY.

BUT: THE SERVICE AND PRIMARY SECTORS ARE INCREASING THEIR R&D ALMOST 50% FASTER THAN MANUFACTURING.

NO. OF FIRMS PERFORMING R & D IN CANADA



CANADA HAS A NARROW BASE FOR INDUSTRIAL R&D, 1000 COMPANIES DO THE TOTAL R&D IN CANADA AND THE TOP 25 COMPANIES DO 50% OF THAT R&D. OF THESE, 1/2 ARE FOREIGN- OWNED...

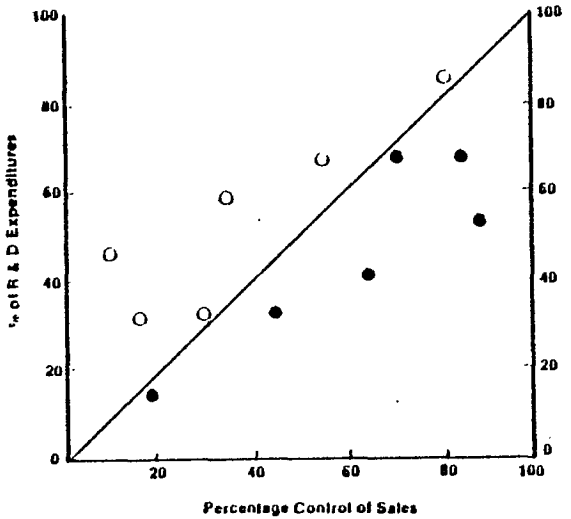
OVER 1000 EMPLOYEES

200-1000 EMPLOYEES

UNDER 200 EMPLOYEES

RELATIVE R & D PERFORMANCE:

CANADIAN-CONTROLLED AND FOREIGN-CONTROLLED MANUFACTURING INDUSTRIES

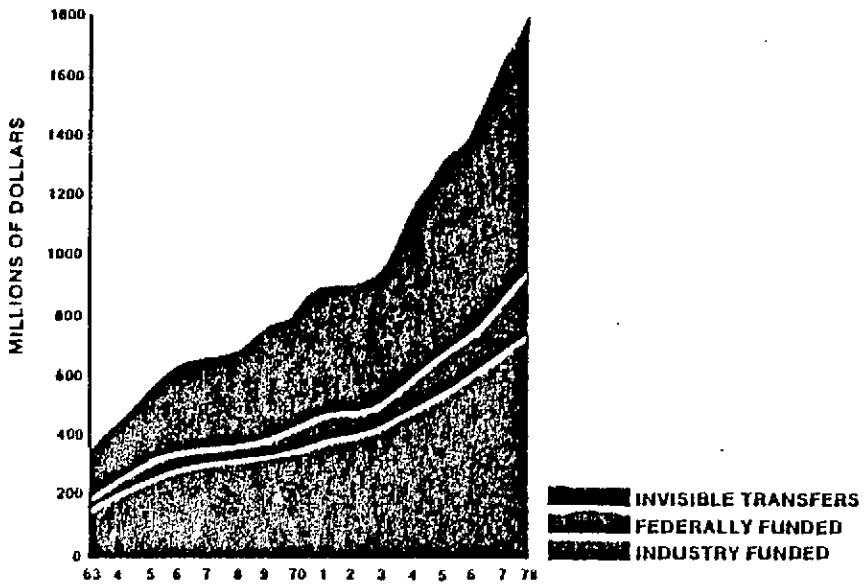


○ Canadian Controlled
● Foreign Controlled

Paper & Allied Products
Primary Metals
Machinery Industries
Transportation Equipment
Electrical Products
Chemical & Chemical Products

IF FOREIGN-OWNED COMPANIES PERFORMED R&D AT THE SAME LEVEL AS CANADIAN-OWNED FIRMS, THE OVERALL GERD TO GNP RATIO TODAY WOULD BE 1.3% AND INDUSTRIAL RESEARCH AND DEVELOPMENT AS A PERCENTAGE OF GNP WOULD ALREADY EXCEED THE .75% TARGET.

TECHNOLOGY IN CANADIAN INDUSTRY



EVEN THOUGH CANADA IS R&D POOR, WE ARE TECHNOLOGY-RICH. THE DISADVANTAGE OF IMPORTING OUR TECHNOLOGY IS THAT WE ARE NOT PRODUCING PRODUCTS FOR EXPORT MARKETS NOR ARE WE USING OUR HIGHLY-QUALIFIED MANPOWER TO OUR TECHNICAL ADVANTAGE.

FEDERAL INITIATIVES TO ENHANCE INDUSTRIAL R&D

1959 - DEFENCE INDUSTRY PRODUCTIVITY PROGRAM (DIPP)

1961 - 100% TAX WRITE-OFF OF R&D EXPENDITURES

1962 - INDUSTRIAL RESEARCH ASSISTANCE PROGRAM (NRC)

1972 - MAKE OR BUY POLICY

1974 - UNSOLICITED PROPOSAL FUND

1975 - PILOT INDUSTRY/LABORATORY PROGRAM

1977 - MAKE OR BUY — REVISED & EXPANDED "CONTRACTING OUT".

1977 - ENTERPRISE DEVELOPMENT PROGRAM (EDP) INNOVATION COMPONENT

1977 - SCIENTIFIC AND TECHNICAL EMPLOYMENT PROGRAM

1977 - MARCH BUDGET — R&D TAX CREDIT OF 5% TO 10%

1978 - APRIL BUDGET — R&D TAX CREDIT INCREASED TO 10% TO 20%

1978 - NOVEMBER BUDGET — 50% TAX ALLOWANCE

1978 - FEDERAL PROVINCIAL MINISTERIAL CONFERENCE ON INDUSTRIAL R&D

1978 - 1.5% TARGET ANNOUNCED

1978/79 - MINI/IRAP INTRODUCED

1980 - EDP — SPECIAL ELECTRONICS FUND

1980 - NEW TECHNOLOGY EMPLOYMENT FUND

1980 - PROCUREMENT REVIEW BOARDS ESTABLISHED

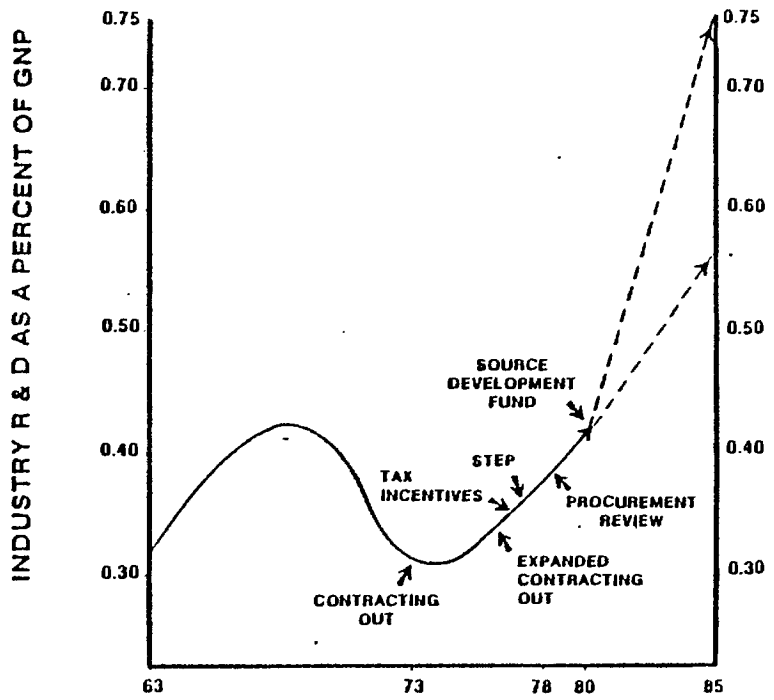
1981 - R&D "FRAMEWORK" ENDORSED BY CABINET

1981 - SOURCE DEVELOPMENT FUND ESTABLISHED

GOVERNMENT SUPPORT OF INDUSTRIAL R & D INTERNATIONAL COMPARISONS (1975)

	% Industrial R & D	Ranking
United States	35.6	1
United Kingdom	30.9	2
France	23.5	3
Norway (1974)	23.0	4
New Zealand	21.0	5
Germany	17.9	6
Sweden	15.9	7
Canada	11.5	8
Denmark	6.7	9
Italy	6.5	10
Finland	6.0	11
Ireland	4.7	12
Japan	1.7	13

POLICY INITIATIVES



THE GOVERNMENT'S CONSISTENT PRIORITY IS TO ENCOURAGE R&D IN INDUSTRY. GOVERNMENT POLICIES ARE AIMED AT ACHIEVING INDUSTRY'S .75% TARGET BY 1985. FOR EXAMPLE, IF A COMPANY IS INCREASING ITS R&D BY 20% (WHICH IS UNDER WHAT'S NECESSARY BY INDUSTRY AS A WHOLE TO ACHIEVE THE TARGET), USING CURRENT TAX INCENTIVES AND ASSUMING THAT THE COMPANY IS PAYING TAXES AT A 40% RATE, THEN THE GOVERNMENT WOULD PICK UP 50% OF THE COST OF THAT R&D.

FEDERAL ASSISTANCE TO INDUSTRIAL R & D

FINANCIAL-INDIRECT

TAX DEDUCTION
- SPECIAL ALLOWANCE
- INVESTMENT TAX CREDIT

FINANCIAL-DIRECT

- ENTERPRISE DEVELOPMENT PROGRAM (EDP)
- SPECIAL ELECTRONICS FUND
- DEFENCE INDUSTRY PRODUCTIVITY PROGRAM (DIPP)

TECHNOLOGICAL ASSISTANCE

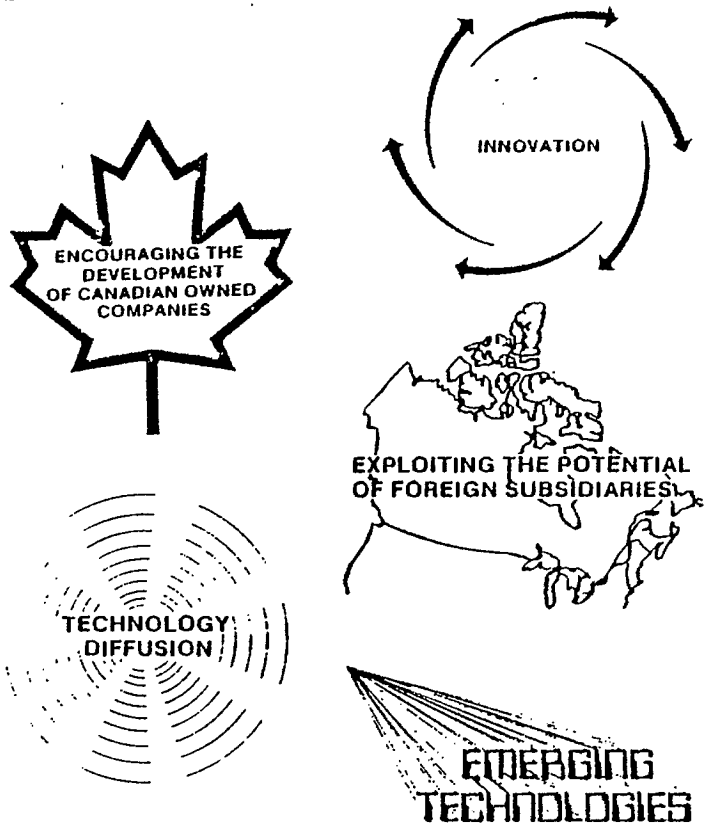
- INDUSTRIAL RESEARCH ASSISTANCE PROGRAM (IRAP/TIS)
- SCIENCE AND ENGINEERING STUDENT PROGRAM
- PROGRAM FOR INDUSTRY/LABORATORY PROJECTS (PILP)
- NEW TECHNOLOGY EMPLOYMENT PROGRAM (NTEP)
- CANADA INSTITUTE FOR SCIENTIFIC AND TECHNICAL INFORMATION (CISTI)
- INDUSTRIAL RESEARCH INSTITUTE FOR PROGRAM (IRAP)
- CENTRES FOR ADVANCED TECHNOLOGY (CAT)
- TELIDON

PROCUREMENT

- CONTRACTING-OUT
- UNSOLICITED PROPOSALS
- PROCUREMENT REVIEW
- SOURCE DEVELOPMENT FUND

TAX INCENTIVES FOR THE 1981-82 FISCAL YEAR ARE EXPECTED TO COST THE GOVERNMENT $146 MILLION. THE ENTERPRISE DEVELOPMENT PROGRAM AND THE DEFENCE INDUSTRY PRODUCTIVITY PROGRAM WILL COST $184 MILLION. OTHER DIRECT ASSISTANCE PROGRAMS WILL COST $115 MILLION. CONTRACTING-OUT WILL COST $139 MILLION THIS FISCAL YEAR.

POLICY THRUSTS



5 MAJOR POLICY THRUSTS ARE NECESSARY TO ACHIEVE THE TARGET.

1. THE GOVERNMENT IS CONSIDERING TAX INCENTIVES AND OTHER TAX MEASURES TO ENCOURAGE INVESTMENT IN CANADIAN COMPANIES.

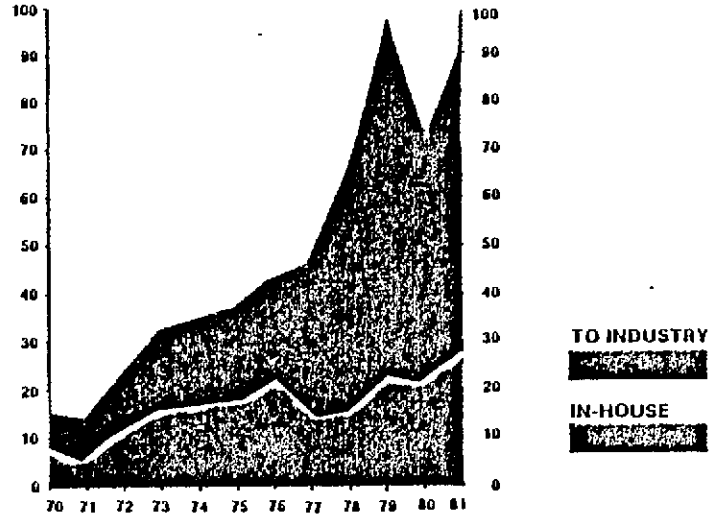
2. THE ACQUISITION OF WORLD PRODUCT MANDATES HAS BEEN STUDIED TO EXPLOIT THE ADVANTAGES PROVIDED BY FOREIGN SUBSIDIARIES WHO HAVE EASY ACCESS TO TECHNICAL AND INTERNATIONAL MARKETS AND WHO HAVE EASY ACCESS TO FINANCING.

3. IT IS ESSENTIAL THAT THE TOTAL INNOVATION CYCLE BE CONSIDERED SINCE R&D IS ONLY A PART OF THE ISSUE. THE GOVERNMENT HAS A NUMBER OF NON R&D PROGRAMS INCLUDING THE EXPORT DEVELOPMENT PROGRAM (EDP) AND THE FEDERAL BUSINESS DEVELOPMENT BANK (FBDB). TOTAL NON R&D GOVERNMENT INCENTIVES AMOUNT TO NEARLY $1 BILLION.

4. ADVANCED TECHNOLOGIES MUST BE DIFFUSED TO SECTORS WHICH DO NOT NECESSARILY DEVELOP THEM THEMSELVES (EG. SERVICE, MINING SECTORS). THIS WILL IMPROVE PRODUCTIVITY LEVELS AND ENHANCE OUR COMPETITIVENESS. THE NATIONAL RESEARCH COUNCIL'S TIS PROGRAM AND PROVINCIAL COUNTERPARTS ARE VERY IMPORTANT IN THIS REGARD.

5. WE MUST IDENTIFY AND ASSESS EMERGING TECHNOLOGIES TO DETERMINE THEIR STRATEGIC IMPORTANCE TO CANADA, BOTH IN TERMS OF OPPORTUNITIES AND THREATS. BIOTECHNOLOGY, MICROELECTRONICS AND SPACE ARE EXAMPLES OF EMERGING TECHNOLOGIES.

FEDERAL EXPENDITURES ON SPACE R & D
($ MILLIONS)

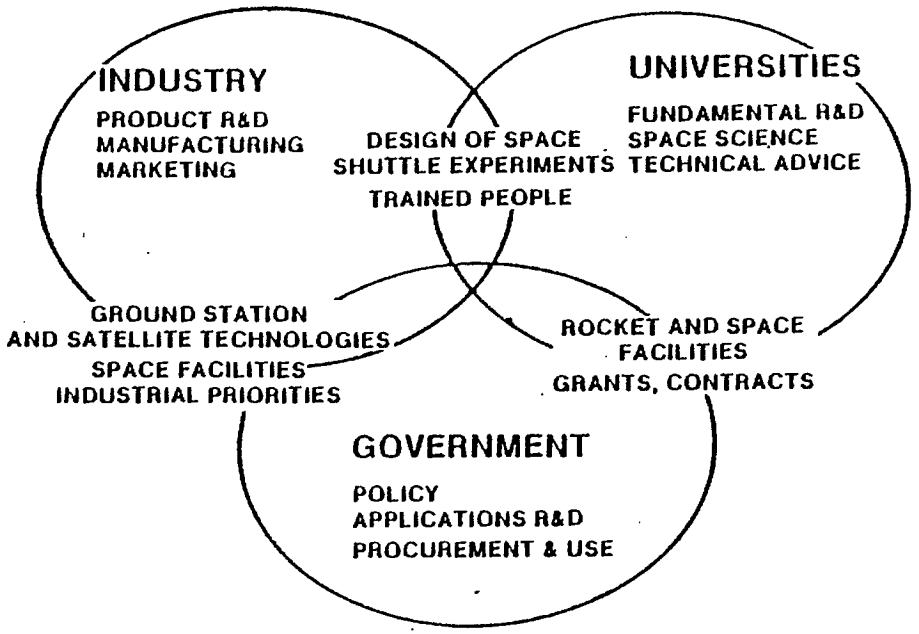


CANADA'S SPACE PROGRAM BEGAN IN 1962 WITH THE LAUNCHING OF ALOUETTE 1. GOVERNMENT EXPENDITURES ON SPACE HAVE GROWN STEADILY AND PEAKED IN 1978-79 WITH THE COMPLETION OF THE REMOTE MANIPULATOR SYSTEM AND ANIK B. THIS GRAPH SHOWS THE INCREASE IN INDUSTRY'S SHARE OF FEDERAL SPACE EXPENDITURES.

PROPOSED FUTURE SPACE PROGRAMS

REMOTE SENSING	RADARSAT
	ICE RECONNAISSANCE
	RESOURCE MANAGEMENT
COMMUNICATIONS	MSAT
	MOBILE COMMUNICATIONS TO VEHICLES, SHIPS & AIRCRAFT
TECHNOLOGY DEVELOPMENT	LSAT
	EUROPEAN LARGE SATELLITE
	SOLAR ARRAYS EXPORT
SPACE SCIENCE	MICROGRAVITY
	MATERIALS PROCESSING
	SHUTTLE EXPERIMENTS

THE SPACE NETWORK



SPACE HAS BEEN ONE OF CANADA'S MOST SUCCESSFUL TECHNOLOGIES AND THE PARTNERSHIP BETWEEN GOVERNMENT, INDUSTRY AND THE UNIVERSITIES IS THE CORNERSTONE OF THIS SUCCESS. GOVERNMENT HAS TRADITIONALLY BEEN THE MAIN SOURCE OF TECHNOLOGY BUT WE ARE NOW SEEING A SHIFT IN RESOURCES TO INDUSTRY.

THE THREE SECTORS ARE INTERDEPENDENT. GOVERNMENT IS THE SOURCE OF MANY SPACE PROGRAMS, BUT IT MUST ALWAYS TAKE INDUSTRY PRIORITIES INTO ACCOUNT. THE GOVERNMENT PROVIDES FACILITIES. AN EXAMPLE IS THE DAVID FLORIDA LAB FOR THE INTEGRATION AND TESTING OF SATELLITES. THE GOVERNMENT INTERACTS WITH UNIVERSITIES AND PROVIDES FACILITIES FOR UNIVERSITY SCIENTISTS TO LAUNCH THEIR SPACE EXPERIMENTS. THE UNIVERSITIES PROVIDE US WITH TECHNICAL ADVICE AND MANPOWER. UNIVERSITIES ARE COOPERATING WITH INDUSTRIES TO DEVELOP SPACE SCIENCE PACKAGES.

CURRENT SPACE PLAN BUDGET

($ MILLIONS)

	1981-82	1982-83	1983-84	3-YEAR TOTAL
REMOTE SENSING	22.7	32.5	31.0	91.2
COMMUNICATION	25.9	21.1	17.3	64.3
TECHNOLOGY DEVELOPMENT IN INDUSTRY	27.0	12.1	12.1	51.2
SPACE SCIENCE	13.8	17.4	18.1	49.3
OTHERS	1.7	1.8	1.2	4.7
TOTAL	96.1	84.9	79.7	260.7

A 3-YEAR SPACE PLAN WAS ANNOUNCED IN APRIL 81. FOR THE FIRST TIME, GOVERNMENT HAD APPROVED AND PRESENTED A MULTI-YEAR APPROACH TO SPACE FINANCING. THE PLAN GIVES PRIORITY TO TECHNOLOGICAL DEVELOPMENT IN INDUSTRY AND AIMS AT BUILDING ON THE EXPERTISE WE HAVE SO THAT INDUSTRY CAN KEEP ITS LEADING EDGE IN SPACE TECHNOLOGY. THE EMPHASIS ON REMOTE SENSING TECHNOLOGY WILL ENSURE THAT CANADA'S SPACE NEEDS ARE MET. THE GOVERNMENT-APPROVED PROGRAM WILL COST OVER $1/4 BILLION OVER THE NEXT THREE YEARS.