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Regional Industrial Expansion

Gouvernement du Canada
Expansion industrielle régionale

Competitiveness Profiles

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Canada

NOTE

The attached draft Competitiveness Profiles were developed in 1985/86 by the Department of Regional Industrial Expansion as a preliminary assessment of the current competitive position of various industries covered by the activities of the Department. They will be revised, updated, and augmented, in terms of sectors covered, on the basis of on-going consultations with industry.

TABLE OF CONTENTS

VOLUME I

Aerospace Manufacturing Sector
Agricultural Machinery
Alcoholic Beverages
  Brewery Sector
  Distillery Sector
  Winery Sector
Aluminum Smelting
Auto Parts
  Motor Vehicles
  Automotive Tire and Tubes
Book, Writing and Coated Paper (Fine Papers)
Boxboard
Canadian Freight Forwarding Industry
Cane and Beet Sugar Processors
Cement and Concrete
Chemical Specialties (Revised)
Clothing Sector
Commercial Printing (Revised)
Commercial Refrigeration and Air Conditioning Equipment Industry
Computer Service Industry
Computers and Office Equipment Products
Consumer Electronics (SIC-334)
The Construction Industry
Construction Machinery and Materials Handling Equipment
Consulting Engineering Sector
Containerboard

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

DRAFT

COMPETITIVENESS PROFILE

AEROSPACE MANUFACTURING SECTOR

1. Structure

The sector consists of the manufacturers of fixed and rotary wing aircraft, aircraft engines, airframe, electronic (avionics) and engine systems, sub-systems, components and parts.

The larger companies include Canadair and de Havilland which make fixed wing aircraft, and Pratt and Whitney which manufactures small gas turbine engines. Annual sales of the 3 largest companies totalled $1.47 billion in 1985. There are about 30 companies in the $20M - $400M annual sales range specializing in proprietary products and sub-systems, sub-contract manufacturing and repair and overhaul. The balance, about 120 firms, are smaller businesses (under $20M) undertaking precision machining and special process applications on a 'job shop' basis for large companies, both domestic and foreign. Less than 1/3 of the firms account for 90% of the sales.

A Helicopter industry is being formed and two firms Bell Helicopters Textron and Messerschmidt-Bolkow Blohm are beginning production. Although it is too early to judge results these firms are expected to become significant in the world market.

Geographically the industry is concentrated primarily in Quebec (51% of sales) and Ontario (41% of sales). About 7% of industry sales originate in the Prairie provinces and the rest are divided between BC and the Atlantic region.

The larger firms in the industry are mainly foreign owned (about 70% of sales) with the major exceptions of Canadair, CAE, Spar and Fleet. Smaller firms are generally Canadian owned. The industry is highly rationalized with only limited direct competition among the leading Canadian firms. The industry's main markets are foreign general aviation manufacturers, regional airlines, business aircraft users, major defence and commercial aerospace contractors overseas, and foreign governments. Between 70% and 80% of output is exported with 60% of production going to the United States. Defence products account for about 30% of all production. The Canadian industry is not generally vertically integrated. Only 20% of the manufacturing sector's purchases or sub-contracts are placed in Canada.

The Canadian industry operates at three distinct levels. At the highest level are the manufacturers of complete aircraft or engines. The technologies used by and the cost structures of these firms are little different from their competitors in the U.S. and overseas (at this level Canadian firms do not compete with each other). The primary ingredients for competitiveness at this level are a high technical performance and reliability of the aircraft or engine, a relatively low cost of manufacture (reflected in the price) and high quality after sales service. To achieve this level of competitiveness requires considerable spending on research and development (R&D), an advanced manufacturing capability and an international network of capable sub-contractors and service representatives as well as a management team capable of putting it all together.

At the second level are found the manufacturers of major aircraft systems and proprietary products such as landing gear, major structural assemblies, avionics and communications systems. The companies serve the complete aircraft manufacturers in Canada and abroad. For these companies technical performance, service, cost and quality are the prime determinants of competitiveness and again this is assured by Research and Development and an advanced manufacturing

capability. Once again at this level the markets and the competition are primarily abroad and Canadian firms do not directly compete with each other.

The third level, that of the small sub-contractor or "job shop" manufacturer is less R&D intensive but is highly dependent on cost and quality. Normally to be competitive in this area firms are required to invest in highly sophisticated manufacturing equipment and quality control systems. Competition is intense among Canadian firms and against foreign companies.

The world's largest aerospace markets are the United States Department of Defence (DOD), the world's major airlines and the defence departments of NATO and third world countries. These markets are satisfied by a handful of companies around the world. The U.S. DOD essentially procures its major systems from U.S. firms, the world's major airlines purchase from Boeing, McDonnell Douglas or Airbus and the defence departments of NATO and third world countries have historically exercised national preference where a capability exists or have bought from the U.S. or U.S.S.R. where no national suppliers are found. Even in Canada DND and the major airlines have generally purchased U.S. equipment (sometimes manufactured in Canada under license).

Worldwide, governments play a major role in the aerospace manufacturing sector. Governments have identified aerospace as a strategically important industrial sector and have provided strong support through R&D grants, and procurement policies. Canada although providing a supportive financial environment has generally avoided protectionism and although requiring industrial benefits against major government purchases has generally left its large purchasing government departments freedom of choice in satisfying their operational requirements.

2. Performance

Shipments by Canadian firms have grown at an annual rate of 12% - 15% since the early seventies with the exception of a 7% recession induced decline in 1983. Employment has grown from less than 30,000 in 1971 to over 45,000 in 1985 and with annual sales in the $4 billion region the Canadian industry ranks fifth in the world, excluding the Soviet bloc. Direct exports of aircraft and parts amounted to $2.5 billion in 1985. Re-exports of foreign manufactured products incorporated into Canadian systems amounted to a further $375,000, whilst imports totalled $3.2 billion. The major importers include Canadian airlines and the Department of National Defence (DND).

The strong sales growth that the sector has enjoyed in recent years has largely arisen from opportunities in the United States market which accounts for 60% of the industry's shipments. Deregulation of the airline industry and the increased demand for small turbo prop and turbo fan aircraft as commuter and corporate transports provided opportunities for our highest level firms, Pratt and Whitney, Canadair and de Havilland. At the same time a substantial growth in U.S. military spending provided opportunities for Canadian firms in defence markets. Second level companies such as Litton, Marconi and Garrett had available innovative avionics and communications products that were well received in the U.S. Third level suppliers such as machine shops have also seen rapid growth in both defence and civil markets.

Some successes particularly in commercial products have also been achieved in Asia, Africa and South America as markets grew for small transport aircraft. These areas account for 13% of production. Canadian firms have been less successful in Europe (surveillance drones are a notable exception). The European market accounts for only 7% of Canadian production.

3. Strengths and Weaknesses

a) Structural

Canadian firms at all levels possess many of the ingredients for competitiveness. Major firms typically invest (with government support) 10% or more of their revenue in Research and Development and have produced reliable, technically responsive aircraft, engines and systems at costs comparable to other firms in the world. Firms at the second or third level are also well positioned to participate in their chosen markets. In the areas where we do participate we are cost competitive.

Aerospace is a very costly industry (a 150 seat commercial transport aircraft costs $3 billion to develop and requires sales of about 700 to break even - a fighter would be substantially more costly). Canada could not afford the Research and Development costs necessary to launch such aircraft and even if it could market acceptance would be difficult to achieve in competition with the long established, well connected major U.S. and European manufacturers.

Canada has chosen, therefore, not to participate in all possible aerospace markets but to seek either niche markets where the large U.S. firms are less dominant such as corporate aircraft users and regional airlines or as suppliers to the major manufacturers. In their own market areas Canadian firms are structurally strong. At the highest level Canadair, Pratt and Whitney and de Havilland all have the skilled engineering departments and advanced production facilities necessary to develop and manufacture their chosen product lines. Pratt and Whitney and de Havilland can also call on parent companies with long experience in the business.

Similarly at the second and third level of systems suppliers and sub-contractors, Canadian firms' technical performance, quality and cost structures are at least as good as competing firms. Over the last 20 years or so continued investment in Research and Development and facilities has developed a sector infrastructure that is world class.

Canada has developed competitive advantage in small gas turbines, small transport aircraft, simulators, proprietary avionics systems and sub-systems and components. The strategy of selective specialization has generally placed individual firms at all levels against competitors of similar size in market areas that have not attracted the world's larger manufacturers.

Canadian firms are competitive in these niche market areas but still rely on government financial support (as do firms in other countries). The structure of the Canadian industry however has meant that Canadian firms with some notable exceptions (Pratt and Whitney) are generally reactive to market opportunities rather than leaders in the development of new technologies.

b) International Trade Related Factors

- Commercial Aerospace Products

Under the "Agreement on Trade in Civil Aircraft" (a GATT agreement) all tariffs on aircraft, aircraft engines and parts have been formally bound to zero. In addition the agreement requires that all government investment in the development of new commercial aerospace products be recouped in full over a reasonable production run.

Many countries, however, continue to support their industries through subsidies for launch costs and sales financing. The Canadian government to achieve its economic objectives and to assist Canadian firms to become more competitive against heavily supported

competition has been obliged to follow suit. Nationalistic preferences for domestic industry make it very difficult to penetrate any overseas markets where there is a national industry competing in the same market segments as Canadian firms.

- Military Aerospace Products

Under the Defence Development and Production Sharing arrangements (DDSA/DPSA) tariffs have been waived and Canadian firms are considered to be part of the North American Defence Industrial base and as such, in theory, have access to the United States market on the same basis as American firms. In practice and despite participating in a number of joint development projects under DDSA, Canada has rarely been able to sell complete systems to DOD. Competition for military contracts in the U.S. is heavily influenced by politics. Contract awards often reflect a strong congressional lobby. In these circumstances it is very difficult for the DOD to award a major systems contract outside the United States even if normal considerations of price and performance were to suggest a foreign contractor. The market for sub-systems and components is, however, more open and Canadian firms have participated in joint development projects under DDSA and have made some sales under the umbrella of DPSA. Canadian industry, however on balance, considers the DPSA to be ineffective in ensuring adequate access to the U.S. military market. Canada supplies less than 1% of U.S. defence requirements.

Canada has signed Reciprocal Defence Production (RDP) agreements with other NATO allies. However, market penetration has been limited although Canadair has achieved some sales of surveillance drones and Military versions of the Challenger. These contracts have, however, required the involvement of foreign manufacturers and are unlikely to be repeated without full partnership with companies in Europe.

Potential sales of defence products to other nations are scrutinized by the federal government and Canada by choice avoids some markets for foreign policy reasons.

c) Technology Factors

The Canadian industry although market rather than technology driven (ie. Canadian firms are users of high technology rather than leaders in its development) has a product development and manufacturing capability that is highly regarded in world markets. This capability has been built up over the years as a result of technology transfer from the United States, government support of product development in Canadian firms and the innovative capabilities of Canadian engineers and managers. Each of these elements has had an important role and if any are removed there will be adverse effects on competitiveness.

Access to U.S. technology has been one of several ingredients of Canadian competitiveness, indeed some firms consider it essential. Access has been secured through licence arrangements and the close relationships of Canadian subsidiaries with their U.S. parents as well as through attendance at classified seminars and technical briefings. Access to U.S. technology is becoming more difficult as the U.S. Department of Defence raises barriers to technology transfer to foreigners and U.S. companies become more protective of their competitive position. Although Canada and the U.S. have recently agreed to a procedure to facilitate the transfer of unclassified sensitive technology the trend to secrecy and protection of information is now well established.

Canada's own efforts to become a leader in the development of new technology have suffered because of the lack of a large domestic military market. Some of the slack has been taken up by DRIE and

DND who react to industry requests for support and provide contributions and direct Research & Development contracts worth about $200 million annually and by Canadian firms in the industry who between them invest about $200 million per annum of their own funds. Overall, however, less funds are available for R&D in Canada than in many competing countries.

3. Federal and Provincial Programs and Policies

Canada's policy of support to its aerospace industry is based on economic rather than on nationalist considerations as is the case in many other countries. Investments are made on the basis of their potential financial and technological returns, creation of employment and export sales (in the case of the Defence Industry Productivity Program, DIPP).

The government's programs, primarily the Defence Industry Productivity Program support this economic orientation and seek to position Canadian companies to take advantage of export market opportunities by sharing the risks of new product development and production.

Canada has attempted to compensate for its practice of purchasing weapon systems "off the shelf" from overseas by seeking offsets against their procurement. Major industrial benefit contracts have been signed with the vendors of all the recent major systems procured by DND. These contracts have benefitted firms at the second and third levels much more than those at the highest level. Several new firms in this category have been established who recognize that a Canadian presence is necessary if they and/or their parents wish to obtain industrial benefits from Canadian procurements.

Canadian suppliers are major users of EDC financing assistance in bidding on export sales.

Provincial Governments particularly in Quebec and Manitoba have shown great interest in Aerospace manufacturing. The Quebec government with industry assistance has established an aerospace training school at St. Hubert.

4. Evolving Environment

The present trading environment provides some access to U.S. and third world markets with some defence product limitations due to Canadian foreign policy considerations. It provides less access to markets in other developed countries. The trading environment is likely to change as domestic and foreign government policies on market access, technology transfer, defence and investment change. Changes in these policies will be as significant in determining the future for Canadian firms as innovation and research and development. In addition, because of the magnitude of the dollar amounts involved in international aerospace trade currency fluctuations will play a disproportionally large role in competitiveness for all nations.

The direction of these changes is difficult to forecast. Countries like the United States, Japan and the EEC all give conflicting signals - on the one hand they give verbal support to the relaxation of barriers whilst on the other hand providing more support to their industries through the imposition of non-tariff barriers and provision of financial support.

On the commercial side perhaps however the most significant trend is the internationalization of the industry. Only two full line suppliers of large commercial aircraft remain. Airbus, based in Toulouse France, is a consortium of firms from Great Britain, France, West Germany and Spain. Boeing, its greatest competitor is entering into partnership with Japanese firms for its next generation aircraft. Both Airbus and Boeing are becoming increasingly dependent

on an international network of vendors and sub-contractors. Competition in securing sub-contracts is intense and Canadian firms may have to seek earlier participation in new projects with these companies and perhaps will be required to share in the financial and market risk.

Similarly rationalization and international interdependence are affecting the smaller manufacturers. Beech, de Havilland, Cessna and Gulfstream have all been acquired by major companies and Aerospatiale which manufacture de Havilland's leading competitor, the ATR 42, is a member of the Airbus consortium. The trend to joint ventures and international co-operation is affecting the Canadian industry. Pratt & Whitney is discussing a new generation gas turbine engine with MTU in Germany and de Havilland and Short Brothers are considering a collaborative venture for a new aircraft to succeed the DASH 8. Other companies, particularly the suppliers of aircraft systems and proprietary products (ie. second level) firms, will have to follow suit and market aggressively at the beginning of a program in order to be selected as a vendor.

Early participation at the third level, ie. the "job shop", may not be quite so critical but these firms will have to maintain their eligibility for selection through continued investment in advanced manufacturing equipment.

On the military side countries are becoming more nationalistic and less inclined to purchase foreign systems without some measure of offset. This was apparent in a program such as the F16 (fighter) where extensive facilities were built in Europe to manufacture the aircraft under license. The next generation of European military aircraft is likely to be built by European consortia with few opportunities for participation by Canadian firms unless a Canadian domestic market emerges.

With deficit reduction and the Gramm-Rudman Act continuing as the overriding consideration in U.S. federal budget formulation, Canada's main customers, the U.S. major contractors, will be forced to cope with slower growth rates in defence spending in future. The overall effect will be to intensify competition at all levels as programs such as the BIB, (Bomber) KCIO, (Tanker) various missiles, and the T46 (Trainer) (all of which involved Canadian second and third level suppliers) mature, are curtailed, or dropped.

Canada's decision not to participate formally in the Strategic Defence Initiative (SDI) program suggests that the relatively few major contracts earmarked for foreigners may be directed towards the countries that did join with the U.S. and that Canada may achieve only limited success in this program.

5. Competitiveness Assessment

Investment in R&D and facilities including substantial government contributions through DIPP over the last 25-30 years has developed a Canadian aerospace industry that employs modern design and manufacturing techniques and produces innovative quality products at all levels. The industry while not able to provide the complete range of aerospace products is very competitive in certain specialized market niches. At the highest level Canada has a competitive advantage in small gas turbine engines and small capacity turbo-fan and turbo-prop transport aircraft. Second level Canadian firms are competitive in the aircraft systems and sub-systems and avionics and communications equipment markets whilst many of the small "job shops" are well equiped to participate in sub-contract work.

Based on these technological capabilities and the marketing strength and established relationships of Canadian firms with foreign customers and prime contractors the short term outlook for the industry looks promising. In fact the industry forecasts sales growth in real terms of 7½% per annum through to 1990.

The long term outlook may not be so rosy. On the military side the failure of the DPSA to yield real access to the U.S. military market for other than sub-systems or components (i.e. firms at the second and third levels) will hinder substantial growth in our larger companies. The declining U.S. military budget will intensify competition and the political pressures to "Buy American" and restrict the transfer of U.S. technology will reduce the competitiveness of Canadian firms.

On the commercial side, the move to international co-operation will have some beneficial effects. Larger Canadian firms are likely to seek partnerships to develop the next generation equipment while firms at the second and third levels will be seeking earlier participation (perhaps risk sharing) in new ventures. These relationships whilst reducing independence to some extent will help consolidate Canada's market position.

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FACT SHEET

NAME OF SECTOR: AEROSPACE MANUFACTURING SIC(s) COVERED*: N/A (DRIE Statistics)

1. PRINCIPAL STATISTICS

	1971	1980	1981	1982	1983	1984	1985
Establishments				est 200			
Employment	28700	43000	41000	34800	37100	41500	-
Shipments ($ millions)	596	2185	2609	2769	2580	3142	3500
Gross Domestic Product (Constant 1971 $ millions)	297	550	528	467	427		
Investment ($ millions)	59	247	398	413	374	413	
Profits After Tax ($ millions)	(1.1)	124	191		N/A		

2. TRADE STATISTICS

	1971	1980	1981	1982	1983	1984	1985
Exports ($ millions)	423	1850	2297	2450	2048	2576	-
Domestic Shipments ($ millions)	173	335	312	319	532	566	-
Imports ($ millions)	313	1941	2350	1523	1815	2224	-
Canadian Market ($ millions)	486	2276	2662	1842	2347	2790	-
Exports as % of Shipments	71.0	84.6	88.0	88.5	79.4	82.0	-
Imports as % of Domestic Market	64.4	85.3	88.3	82.7	77.3	79.7	-
Canadian Share of International Market	-			est 5%			

Source of imports (top 4)	U.S.	E.E.C.	ASIA	OTHERS
1981	91	5	3	1
1982	91	5	3	1
1983	95	4	-	1
1984	95	4	-	1

Destination of exports (top 4)	U.S.	E.E.C.	ASIA	OTHERS
1981	76	9	3	12
1982	69	9	5	17
1983	78	9	4	9
1984	76	8	5	11

3. REGIONAL DISTRIBUTION - Average over the last 3 years.

	Atlantic	Québec	Ontario	Prairies	B.C.
Establishments - % of total			N/A		
Employment - % of total)	.5	51	41	7	.5
Shipments - % of total)					

4. MAJOR FIRMS

Name	Ownership	Location of Major Plants	Concentration (% of domestic market
Pratt and Whitney Canada	US	Montreal	10
Canadair Ltd	Canadian	Montreal	15
CAE Electronics	Canadian	Montreal	21
McDonnell Douglas Canada	US	Toronto	18
Litton Systems	US	Toronto	14
de Havilland Canada	US	Toronto	20

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

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COMPETITIVENESS PROFILE

AGRICULTURAL MACHINERY

1. STRUCTURE AND PERFORMANCE

Structure

The Canadian agricultural machinery sector encompasses manufacturers of a wide range of farm machinery including 4-wheel drive tractors, combine harvesters, grain drills and tillage equipment. Over the years, Canada has successfully developed specialized machinery for the production of cereal grains on large farms under dryland farming conditions. Designed to meet the needs of the Western Canadian grain farm, this equipment is also well suited to the requirements of other large scale farming operations throughout the world, especially the grain growing regions of the United States and Australia where it has enjoyed significant success in recent years.

The sector employed some 8,800 people in 1985 and in that year realized factory shipments estimated at $808 million of which $549 million (68 per cent) were exported. Imports in 1985 amounted to $1.6 billion, representing over 85 per cent of the Canadian market.

The sector is composed of three "full line" companies in Ontario and 215 "short line" manufacturers located in Quebec, Ontario and the Prairie Provinces. About one-half of the sector's shipments are made by full line manufacturers and half by short line companies. Full line firms market a complete line of farm equipment for major types of farming with production rationalized on a North American or world market basis. These companies manufacture the major equipment items, i.e. tractors and combines and either manufacture or outsource other, less significant implements (e.g. tillage equipment, seed drills) to provide a full line of agricultural equipment. The full line firms include: (i) Massey-Ferguson (to be renamed Varity Corp.), a Canadian-based multinational which accounts for a substantial portion of the value of industry shipments, (ii) Deere, and (iii) J.I. Case, subsidiary operations of U.S.-based multinational firms whose production in Canada, while significant, does not extend to any major piece of equipment, i.e. tractors or combines. Versatile Farm Equipment could be considered a full line company since it produces a full range of large scale dryland farming equipment and has established a position of leadership and pioneering development in large 4-wheel drive tractors (the company is one of Canada's two largest producers). It should be noted that Deere & Co., U.S.A., is in the process of purchasing Versatile; the purchase, however, has not yet been approved by the U.S. Justice Department.

Short line firms produce a variety of agricultural implements and attachments such as cultivators, chisel plows, seeders, windrowers and sprayers as well as specialized equipment for particular crops (e.g., potato and tobacco equipment). Most of their sales are made directly to equipment distributors or dealers. Less than ten per cent of sales are to major original equipment manufacturers. These companies are mainly Canadian-owned enterprises and compete in domestic and foreign markets with full line manufacturers and short line firms located in the U.S.A.

Production by the three full line multinationals is highly integrated with the majority of their component requirements being sourced from within their world corporate network. The other firms have a lower degree of integration, purchasing the more sophisticated components (e.g. bearings, wheel assemblies, hydraulic cylinders and valves) from firms specializing in such production.

Approximately 90 per cent of Canadian trade in agricultural equipment is with the United States. Exports to Australia have increased in recent years and currently account for some 5 per cent of total Canadian exports. Exports to the European Community and Japan amount to only two and less than one per cent of total Canadian exports, respectively. Competition from sources other than the United States, i.e., Europe and Japan, is not a significant factor as offshore equipment is usually not suited to the large scale farming practices prevailing in much of Canada and the United States, or consists of products which are not made in Canada, e.g. conventional 2-wheel drive farm tractors. In this regard, imports into Canada from the European Community and Japan have averaged only 10 per cent and 3 per cent of total imports respectively, in recent years.

Performance

During the 1970's, the sector experienced an average real growth of 10 per cent annually. While the export share of sector shipments declined during this period, import penetration of the Canadian market also decreased.

The real output of the sector peaked in 1980. Since then, the sector has experienced a significant decline as reduced prices for farm products and high interest rates severely affected demand. This resulted in shipments decreasing at an average annual rate of over 16 per cent in real terms between 1980 and 1985 and during this period sector employment was almost halved - from over 17,400 in 1980 to 8,800 in 1985.

The continuing depressed demand for farm machinery around the world has resulted in the near collapse of several major full line companies and unprofitability for all world producers. Full line machinery manufacturers have focussed their efforts during this period on reducing costs of production and on maintaining market share and cash flow levels. The high cost of maintaining large inventories, servicing debt loads, and financing sales to dealers and farmers has severely weakened the financial position of full line manufacturers.

A number of major firms have merged in the past few years in response to changing market conditions (Case/International Harvester, Ford/New Holland, Deutz/Allis), although this activity appears to have reached its peak. In addition, White Farm Canada, a major manufacturer of combine harvesters ceased operation in 1985, at which time its rotary combine technology was acquired by Massey-Ferguson. Massey-Ferguson, despite having explored many alliances including the full acquisition of White Farm Canada, has not effected any mergers during this period. The company has managed through divestitures, downsizing and cost cutting measures to approach a breakeven position after suffering losses of $1 billion since 1978. However, the continuing decline in the North American demand for combine harvesters has been causing repeated losses in the Canadian operations of the company and has led to the suspension of combine manufacture in the last quarter of 1985. In this connection, Massey-Ferguson has recently severed its combine harvester business forming a new and separate entity, Massey Combines Corp., in order to financially restructure the company.

The short line manufacturers, as a result of their specialization and lower overhead costs, fared relatively better during this period - experiencing a decline starting only in 1982. However, financial strain is now surfacing among some short line producers and a number of bankruptcies have occurred over the last year.

2. STRENGTHS AND WEAKNESSES

a) Structural Factors

Despite the recent severely depressed world market conditions which have resulted in low capacity utilization rates - varying from 25 to 50 per cent depending on the product - and extensive layoffs, the sector has retained a solid core of skilled workers, good engineering support, and currently benefits from a favourable cost structure for most major inputs (i.e. labour, materials, transportation).

The retrenchment and consolidation process that has been carried out in the worldwide operations of the major multinational companies has not resulted in the divestiture or abandonment of farm machinery production for the operations of these companies in Canada. The recent acquisition of the agricultural equipment activities of International Harvester by J.I. Case could have a considerable effect on its operations in Canada. While it is too early to assess its impact, the merger could prove beneficial for the Canadian operation in view of its current production capabilities which complement those of J.I. Case in the U.S. as well as by providing a more extensive distribution network in North America. Deere & Co., U.S.A. is in a strong market and financial position but the manufacturing operations in Canada have not been very large in comparison to its sales in Canada. With the proposed acquisition of Versatile, however, this would increase substantially.

In the case of the short line, mainly Canadian-owned firms, their operations, which focus on specialized equipment, have been less adversely affected by the market downturn. Their greater resiliency has enabled them, so far, to avoid major dislocations. In this regard, short line firms have lower manufacturing and marketing overhead costs and have the capability to add new product lines with relative ease in order to maintain production and employment levels.

b) Trade Related Factors

The principal strength of the industry lies in the favourable market access to and successful exploitation of the large United States market on the basis of long standing virtual free trade with that country. As a result, problems normally related to production scale and/or fragmentation are not a significant factor for this industry. While imports from the United States dominate the Canadian market, access to the much larger United States market provides significant export opportunities for Canada. Nothwithstanding this openness in trade in agricultural machinery that exists between the United States and Canada, many products must meet agricultural end-use requirements to qualify for duty-free treatment and certification procedures are in place in both countries for this purpose. From time to time, exporters in both countries have complained over the other country's administration of these provisions.

All GATT countries are accorded the same duty-free access to the United States and Canadian markets. Tariffs and non-tariff barriers in other countries of interest to Canadian exporters (e.g. Australia) have not been major factors affecting market penetration.

c) Technological Factors

In recent years, the Canadian industry has been a technology leader, and was at the forefront of several technological achievements including the development of large capacity 4-wheel drive tractors and axial flow combines. While product improvements will continue to be made, no significant new technological breakthroughs are expected.

3. FEDERAL AND PROVINCIAL PROGRAMS AND POLICIES

Since 1981, federal and provincial governments have provided over $250 million of adjustment assistance for three farm machinery companies facing financial difficulties (i.e. Massey-Ferguson, Canadian Cooperative Implements Ltd., and White Farm). In addition, approximately $30 million in federal incentive assistance has been provided to support the research and development, plant expansion and modernization and export market development of many companies. The federal government, over the years, has also mounted a large program of trade fairs, missions, and seminars to support market penetration in the United States, Australia, and other cereal producing areas of the world amenable to the kinds of dryland farming technology developed and used in the prairies of North America.

4. EVOLVING ENVIRONMENT

Over the long-term, the farm machinery sector should experience a stable but mature market environment as food production increases to meet population growth. As in the past, fluctuations in demand will occur in response to such factors as climate, crop conditions, farm commodity prices, farm incomes, interest rates, attitudes of buyers and agricultural policies of governments. While it is expected that market conditions will improve marginally over the next two to three years, a return to the high level of demand experienced during the 1970's will not occur for some time to come.

In the meantime, prospects for an early improvement are not promising, particularly in light of severely depressed grain prices. In addition, there is concern that abnormally high farm debt, decreasing land values, and reduced farm incomes could lead to further deterioration in equipment demand. This will continue to put pressure on the industry and will severely limit its capacity to undertake productivity improvements and the product development required to remain internationally competitive. While short line manufacturers as a group are not facing any major threat, individual firms are vulnerable to those management weaknesses typical of small enterprises. In addition, they may face a competitive threat from major full line companies who are able to offer better financing terms as well as price discounting. Full line firms can also impose stringent conditions on their purchases of equipment which are outsourced to short line manufacturers.

An improvement in market conditions is needed to assure the long-term viability of a number of the larger firms that are still in a tenuous financial position despite the considerable downsizing of operations that has taken place. Improved market conditions would enable companies to reduce inventories, reactivate idle operations, and rebuild their balance sheets. In these circumstances, there will be little need to invest in new production capabilities although competitive pressures will undoubtedly force the pace of productivity and product improvement.

There are several areas in the world that are suitable for the kind of dryland farming practices that have been developed successfully in the cereal growing regions of North America, and there is a growing interest on the part of many countries to adopt such techniques. This presents opportunities for Canadian farm equipment firms that specialize in machinery suited to dryland farming to increase and diversify their export sales.

5. COMPETITIVENESS ASSESSMENT

Within the severely depressed worldwide farm machinery market, the Canadian agricultural machinery sector remains competitive in terms of price and technology despite low capacity utilization rates and a weakened financial base.

For the last seven years of depressed market conditions, the process of adjustment, particularly on the part of the **full line** companies facing financial difficulties, has been proceeding. This process is now largely completed as these companies approach a breakeven point at a reduced level of demand. As previously indicated, however, this process, which has involved retrenchment and consolidation of all North American production, has not left Canadian production units in a less competitive position versus other manufacturers. Indeed, in the short-term at least, recent corporate mergers and acquisitions have strengthened the relative position of firms in Canada by providing them with more extensive distribution networks, additional financial strength, and increased production mandates.

In the longer term, the situation is less clear. Notwithstanding the relative competitiveness of Canadian firms, a major turnaround in markets is vital to maintaining the viability of this sector in Canada and other countries. However, should farm economies continue to worsen, certain areas of heavy Canadian production (i.e. combines, large 4-wheel drive tractors and swathers) appear most vulnerable to further dislocation. In these circumstances, it is expected that forced plant closures and divestitures, should these occur, would hit the Canadian sector the hardest.

The **short line** manufacturers, because of their greater resiliency and lesser financial exposure, have not suffered major dislocations and, to date, have largely retained their competitive position. For many of these firms as well, however, significantly improved market conditions will be necessary if they are to remain viable in the longer term.

PREPARED BY: Machinery and Electrical Equipment Branch
Department of Regional Industrial Expansion

Assistant Deputy Minister
Capital and Industrial Goods

DATE: JUN 6 1986

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

F A C T S H E E T

NAME OF SECTOR: Agricultural Machinery **SIC(s) Covered:** 3111 *

1. PRINCIPAL STATISTICS

	1973	1980	1981	1982	1983	1984**	1985**
Establishments	135	206	207	203	218	218	218
Employment	13477	17425	16073	12830	10439	10500	8800
Shipments ($ Millions) (volume, e.g. tonnes where applic.)	339	1326	1351	1086	943	1051	808
Gross Domestic Product 1970 SIC (Constant 1971 $ Million)	139.2	211.2	184.1	117.7	91.0	N/A	N/A
Investment ($ Millions) 1970 SIC	9.4	20.9	18.6	8.6	8.2	N/A	N/A
Profits after tax ($ Millions) 1970 SIC (% of Income)	38.6	5.9	(17.4)	(117.5)	(121)	N/A	N/A

2. TRADE STATISTICS

Exports ($ Millions)	290	876	885	651	551	655	549
Domestic Shipments ($ Millions)	49	450	466	435	392	396	259
Imports ($ Millions)	539	1823	2164	1568	1405	1635	1581
Canadian Market ($ Millions)	588	2273	2630	2003	1797	2031	1840
Exports as % of Shipments	86%	66%	66%	60%	58%	62%	68%
Imports as % of Domestic Market	92%	80%	82%	78%	78%	81%	86%
Canadian Share of Int. Market	-	-	-	-	-	-	-

Sources of Imports (Top 4) ($ Millions)	U.S.	E.E.C.	ASIA	OTHER
1981	1931.7	168.2	31.8	32.3
1982	1431.7	89.0	25.1	22.2
1983	1249.0	116.6	23.0	16.4
1984	1392.4	167.9	46.8	28.3
1985	N/A	N/A	N/A	N/A

Destinations of Exports (Top 4) ($ Millions)	U.S.	E.E.C.	ASIA	OTHER
1981	798.7	17.0	4.4	64.9
1982	566.9	20.2	4.8	59.1
1983	492.1	17.4	2.2	39.3
1984	586.1	10.9	5.8	52.2
1985	N/A	N/A	N/A	N/A

3. REGIONAL DISTRIBUTION - Average over the last 3 years.

	Atlantic	Quebec	Ontario	Prairies	B.C.
Establishments - % of Total	2%	20%	36%	38%	4%
Employment - % of Total	1%	4%	55%	40%	-
Shipments - % of Total	-	4%	55%	41%	-

4. MAJOR FIRMS

	Name	Ownership	LOCATION OF MAJOR PLANTS
1.	Massey Combines Corp.	Canadian	Brantford, Ont.
2.	Versatile Farm Equipment	Canadian	Winnipeg, Man.
3.	J.I. Case Canada	U.S.A.	Hamilton, Ont.
4.	John Deere	U.S.A.	Welland, Ont.
5.	Flexi-Coil Ltd.	Canadian	Saskatoon, Sask.
6.	Morris Rod-Weeder Co. Ltd.	Canadian	Yorkton, Sask.
7.	Mac Don Industries Ltd.	Canadian	Winnipeg, Man.
8.	Degelman Industries Ltd.	Canadian	Regina, Sask.
9.	Leon's Mfg. Co. Ltd.	Canadian	Yorkton, Sask.
10.	Rite Way Mfg. Co. Ltd.	Canadian	Regina, Sask.
11.	Victory Equipment Ltd.	Canadian	Lethbridge, Alta.

* 1980 SIC
** Estimated

DRAFT

COMPETITIVENESS PROFILE

Name of Sector: BREWERY SECTOR

1. STRUCTURE AND PERFORMANCE

Structure:

- The brewing industry (SIC 1131) produces lager, ale, porter, and stout, both bottled and draught. The industry focusses directly on consumers and the hospitality industry as its major customers. Key backward linkages are to the malting industry and to the packaging industry for bottles, boxes and labels.

- The Canadian brewing industry is dominated by three large companies; John Labatt Limited, the Molson Companies Limited and Carling O'Keefe Limited which together hold a 97% share of the domestic market. The first two are the largest and are Canadian owned, John Labatt by Brascan Limited (41% of common shares representing effective control) while majority control of The Molson Companies Limited is held by the Molson family. Carling O'Keefe Limited is 50.1% owned by the U.K. firm, Rothman's of Pall Mall. Several smaller regional breweries, and imported brands, accounts for the remaining 3% of the domestic market.

- While three major companies dominate the Canadian industry, the market is divided into provincial markets served by breweries in each province. This is due to provincial government regulations that require a brewer to maintain production facilities in a province if it wishes to market its brands there. The result is a tightly controlled, concentrated industry with production fragmented along provincial lines, limiting the economies of scale available to domestic brewing operations and thus increasing their vulnerability to international competition.

Performance:

- In 1984 the Canadian brewing industry had total sales of $2,009 million with shipments of approximately 22 million hectolitres. Industry shipments accounted for 5.5% of total food and beverage industry shipments in 1984, and .9% of total manufacturing industries shipments. While the value of brewery shipments has increased some 67% since 1980, due mainly to increased taxes, the volume of output has increased only marginally. Employment in 1984 was approximately 13,000 representing a 5.4% increase from 1980. Exports were valued at $175 million in 1984 and imports at only $17 million. Over the 1980 to 1984 period, exports increased in value by 67%, while imports experienced a modest decline.

- Canada's major brewing companies have been profitable and had excellent financial reserves. However, in the face of shrinking demand, capacity utilization rates have dropped off to about 85% in recent years after several decades of constant growth, and profit margins and financial reserves have declined somewhat. As a result, competition for market share has intensified among the major firms with stronger advertising efforts, new packaging to appeal to consumer tastes and new products such as low calorie and low alcohol beverages. Among the most successful efforts has been the production, under license, of major U.S. brands to capitalize on the "spill over" advertising on U.S. television networks.

2. STRENGTHS AND WEAKNESSES

a) Structural

- While Canadian brewers are performing well in the current domestic regulatory environment, there are some structural weaknesses in the industry that could become apparent in a more internationally

integrated market. Brewing is an industry with very large economies of scale giving tremendous productivity advantages to those companies with high-volume operations. Canadian brewing companies are relatively small compared to the major U.S. brewers; in fact, industry analysts predict that the minimum viable size for brewing companies wishing to market nation-wide in the U.S. will soon be 20 million bbl. of output per year, although breweries concentrating on regional markets will survive at a lower level of activity. This compares with a total Canadian market of about 19 million bbl., and indicates that Canadian producers could find themselves unable to compete in a continentally integrated market without substantial rationalization and expansion.

- Exacerbating the problem of a small domestic industry relative to that in the U.S., the operations of the major Canadian brewers are fragmented along provincial lines because of provincial regulations that effectively balkanize the domestic market. Significant regulatory barriers exist in each province to protect indigenous brewing operations. For example, provincial regulations require that a company must have a brewing establishment in the province before its products can be displayed in retail stores and this is why regional brands are generally available only in the province where they are brewed, although "out of province" beers can often be sold if a special surtax is paid. This system results in a fragmented market and limits the economies of scale available to the industry.

- The U.S. brewing industry is undergoing a major rationalization with companies competing very aggressively for market share in a slowly growing domestic market (0.5% in 1983). The two industry leaders, Anheuser-Busch and Miller Brewing, now control 54.5% of the U.S. market, while the second-tier companies such as Stroh, G. Heileman and Adolph Coors have been purchasing other brewing companies and marketing aggressively in an attempt to break out of traditional regional markets and capture more of the national market share.

b) International Trade-Related Factors

- The Canadian brewing industry is protected by an import duty rate of 15¢/gallon plus excise duty equivalent to the excise tax applied to Canadian brewery products. The U.S. imposes a duty on brewery products of 6¢/gallon plus appropriate excise duty. These tariff levels do not represent a significant barrier to trade. Rather, the Canadian industry is afforded greater protection by the provincially-controlled domestic distribution system which imposes higher distribution costs and limits market access for brewery products imported from outside the province, and by a pricing system favouring indigenous operations. In most provinces, alcoholic beverages are sold only through provincial government outlets, or have delegated some portion of that activity to domestic producers. The U.S. does not tend to have a similar distribution system, making access to markets dependent on securing the appropriate importing agent.

- Because of protected provincial markets, Canada imported only $17 million in brewery products in 1984 (exclusive of licencing revenue) while exporting $175 million worth, of which over 99% is directed to the U.S. market. The major Canadian exporter is Molson (the second largest U.S. import) while Moosehead Breweries of Saint John, N.B. is also surprisingly strong in the U.S. (fourth largest imported brand). These brands are directed at the premium end of the U.S. market.

- In 1983, U.S. brewers shipped 177.5 million bbl. or 208.3 million hectolitres for domestic consumption, representing $11.8 billion in sales and making it the largest brewing industry in the world. The industry currently has excess capacity approximately double or triple the total capacity of the Canadian industry, and brewers have been reducing prices to the point of selling some brands at prices below cost of production in an effort to keep plants occupied. In 1983, U.S. brewers spent an estimated $700 million on advertising (more than the total value shipped by any single Canadian brewer), reflecting the increased aggressiveness of the major firms.

- Innovations in the brewing industry include the rapid introduction of "light" beers to appeal to more health-conscious consumers. The industry leader in this area is the Miller Lite brand, although Anheuser-Busch is rapidly expanding in the "light" beer market. Both Anheuser-Busch and Miller are investing in new plant capacity and are poised to grab 70% of the U.S. beer market by 1990. This will result in even greater over-capacity which could lead to more mergers in an effort to create more production efficiencies among smaller producers.

c) Technological Factors

The brewing industry generally employs mature technology, with advances coming mainly in the area of packaging. The major Canadian brewers have undertaken to install new high-speed bottling equipment in their larger plants, but the general adoption of this equipment is hindered by the small size of production runs.

Recently, the brewing industry has introduced innovative new products (low calorie and low alcohol beers) and a variety of packaging shapes and sizes in an effort to appeal to changing consumer tastes. This closely mirrors changes taking place in the U.S. brewing market.

3. FEDERAL AND PROVINCIAL PROGRAMS AND POLICIES

The federal government has no industrial development programs targetted specifically at the brewing industry. However, recently, a Memorandum of Accord was signed between DRIE and John Labatt Limited committing each party to more frequent and formalized exchanges in views and intentions in matters of mutual interest.

The major governmental influence exerted on the industry is that of the provincial governments which control licensing, pricing and distribution within their jurisdictions. Provincial government regulations in these areas have in effect balkanized the Canadian market.

The brewing industry feels that tax levels have reached the point where they are having a significant depressing impact on demand. Generally in Canada, some 50% of the retail selling price of beer is accounted for by federal and provincial taxes, while comparable taxes in the U.S. make up only 16% of the retail price.

4. EVOLVING ENVIRONMENT

The key to understanding the future outlook for the brewing industry is found in the shifting importance of various demographic age groups. The aging of the "baby boom" generation will have a strong effect on overall consumer preferences. For brewers, the decline in the size of the 21-35 age group will severely restrict growth prospects. In fact, demand growth is already sluggish and a decline in overall consumption could result from the aging of this target market group.

There are also strong indications that the next 5-10 years will see an increasing health-consciousness among North American consumers. Low calorie and low alcohol beverages may benefit from these trends at the expense of other products. Current concerns regarding drinking and driving have prompted several U.S. states to raise their legal drinking age. If this trend becomes widespread, a considerable number of potential consumers could be removed from the market. As well, Canadian jurisdictions are becoming increasingly concerned with this issue, as demonstrated by Ontario's ban on "happy hours" promotions and more stringent provisions on impaired driving in the Criminal Code.

As a result of the above factors, market demand in the brewery sector in both Canada and the U.S. will grow only slowly in the coming years, leaving both countries with overcapacity for the foreseeable future. This will

lead to increasingly aggressive marketing and some rationalization, especially in the U.S. market. As noted before, industry analysts predict that the minimum viable size for brewing companies in the U.S. will soon be 20 million bbl. of output per year; therefore, the trend among U.S. brewers is to national distribution and aggressive marketing in an effort to boost market share.

Over the coming years, Canadian brewers expect that the prospects for continued growth in profits and shipments are limited. The major brewing companies, recognizing this trend, are using profits to diversify into other interests, such as food, communications and professional sports franchises, and to intensify export marketing efforts in the U.S.

5. COMPETITIVENESS ASSESSMENT

Restrictive provincial regulations have resulted in an industry structure fragmented along provincial lines. This has made many Canadian operations vulnerable to a much larger and rationalizing U.S. industry should the regulatory environment change drastically. Nonetheless, the industry is currently strong and profitable because of its protected status, and the major firms are using it as a base from which to diversify into other business opportunities. The major firms have also increased their exporting efforts in an attempt to increase capacity utilization and have met with success in the premium end of the U.S. beer market.

Adjustments required to make the industry more competitive include:

1) the elimination of barriers to inter-provincial trade in brewery products, thereby allowing national brewers to rationalize their operations and regional brewers to more readily penetrate national markets.

2) extensive rationalization would be required to increase economies of scale to an internationally competitive level.

3) greater penetration of the large U.S. market by Canadian brewers to compensate for a stagnating domestic market and to increase production volume and economies of scale.

PREPARED BY: FOOD AND CONSUMER PRODUCTS BRANCH, DRIE

ADM

DATE: 3.3.86.

BREWING INDUSTRY

PRINCIPAL STATISTICS	1980	1981	1982	1983	1984
Establishments	41	40	40	40	40
Employment	12342	12637	12938	13000	13,000
Shipments ($000,000's)	1206	1444	1668	1843	2,009
Exports ($000,000's)	105	123	145	157	175
Domestic Shipments ($000,000's)	1101	1321	1523	1686	1,834
Imports ($000,000's)	25	19	13	19	17
Canadian Market ($000,000's)	1126	1340	1536	1705	1,852
Exports - % of Shipments	8.7	8.5	8.7	8.5	8.7
Imports -% of Domestic Market	2.2	1.4	0.8	1.1	0.9

REGIONAL DISTRIBUTION - 1982	ATLANTIC	QUEBEC	ONTARIO	WEST
Establishments - % of total	20	7.5	27.5	45
Employment - % of total	8	37	31	24
Shipments - % of total	9	29	39	23

FOREIGN TRADE		U.S.	EEC	ASIA	OTHERS
Imports - % of total	1981	53	45	.6	1.4
	1982	32	61	.7	6.3
	1983	47	46	2	5
	1984	48	42	3	6
		U.S.	**EEC**	**ASIA**	**OTHERS**
Exports - % of total	1981	99	.6		
	1982	99	.4		
	1983	99.5	.1	.1	.3
	1984	99.4	.2	.1	.3

MAJOR FIRMS	LOCATION	OWNERSHIP
The Molson Companies Ltd.	Que., Ont., West	Canadian
John Labatt Limited	All regions	Canadian
Carling O'Keefe Ltd.	All regions	U.K.
Moosehead Breweries Ltd.	Maritimes	Canadian

(E): Estimate

Feb. 20, 1986

DRAFT

COMPETITIVENESS PROFILE

Name of Sector: DISTILLERY SECTOR

1. STRUCTURE AND PERFORMANCE

Structure:

- The Canadian distilling industry (SIC 1121) produces most types of distilled spirits, in particular Canadian whiskey, rum, vodka, gin, liqueurs, brandy and raw ethyl alcohol. Like most consumer products, the individual consumer is the focus of the industry's marketing, although a great deal is also sold through the hospitality industry. Key backward linkages are to the packaging and grain milling industries.

- In 1984, there were 32 distilleries in the industry; the number of establishments has remained fairly constant at 29 to 34 over the past 10 years. The Canadian distilling industry is dominated by two Canadian-owned multinationals, Joseph E. Seagram and Sons Ltd., and Hiram Walker and Sons Ltd., which have world-wide holdings in the distillery and winery sectors.

- Concentration levels in the distilling industry are among the highest within the food and beverage sector. Statistics Canada reported that in 1974 the 4 largest corporations accounted for 82.6 percent of shipments and the 8 largest for 95.9 percent. These figures were 74.9 percent and 94.5 percent respectively in 1980. Some rationalization seems to be occurring, as demonstrated by the recent purchase of Melchers Canada Co. by Seagram.

- Foreign ownership in the distilling industry is less than in the total food and beverage sector. In 1976, Statistics Canada reported that 46.6% of plants and 30.6% of shipments were under foreign control. These statistics reflect the fact that the majority of the firms including the two largest, Seagram and Hiram Walker, are Canadian-owned.

Performance:

- The distilling industry in 1984 had total shipments of $786 million roughly equal to 1981 levels although this indicates a sharp decline in output volume since prices increased strongly over this period. The industry is highly export oriented, with exports in 1984 of $388 million, 96% of which went to the U.S. market. Imports of distilled spirits were $165 million of which 7% came from the U.S., 73% from the EEC and 20% from other countries. In 1971, the distilling industry accounted for 1.5% of Canada's manufacturing exports, but by 1984 this had declined to only 0.5%. However, the industry still contributes approximately 8.6% of food and beverage exports, while accounting for only 2.2% of sector shipments.

- The major Canadian distillers are mature and financially strong, although recent acquisitions combined with high inventories due to declining demand have depleted some of these companies' financial resources. Profits and retained earnings declined substantially in the 1981-1983 period, while the industry's overall debt/equity ratio doubled from .59 in 1981 to 1.2 in 1983, peaking at almost 1.5 in 1982.

- The volume of distilled spirits consumed has been declining significantly in recent years, although population trends would indicate that it should be growing at a moderate pace. Consumer tastes have shifted away from "dark" spirits (whiskey, dark rum, etc.), but this alone cannot fully explain lower trends in consumption. Retail prices for Canadian whiskey have risen 45% since

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April 1981, mainly due to increases in federal and provincial taxes, drastically reducing domestic demand and pricing many premium quality brands out of the market. From 1981 to the end of 1984, the volume of industry shipments declined by 18%. This is one of the factors contributing to capacity utilization of less than 50% and a weakened contribution by the industry to the national economy.

2. STRENGTHS AND WEAKNESSES

a) Structural

- Canadian distillers have a solid world-wide reputation for quality and are very competitive in our major export market, the United States. Both Seagram and Hiram Walker have world scale distilling plants in both countries, with excellent economies of scale.

- Production facilities range in size from plants employing 4 people or fewer to plants employing up to 1,000. That there are substantial economies of scale in production is evidenced by the fact that the 8 plants employing more than 200 people account for 64% of industry shipments.

- Vertical and horizontal integration is not a significant factor in the industry. However, the large distilling companies have made an effort to diversify their holdings in recent years, and some of the smaller distillers are slowly following in the same footsteps. Some of this diversification has been into another segment of the alcoholic beverage area - wine.

- Many of the distilleries have diversified their interests to differing extents. For example, Seagram has a major investment in E.I. du Pont de Nemours & Co. of the United States in addition to wine interests; Hiram Walker has major investments in the oil and gas industry. Other smaller distilleries have followed a similar course; for example, Potter Distilleries Limited now has a wine subsidiary, Beaupré Wines (Canada) Ltd.

b) International Trade Related Factors

- Canadian tariff duties applied to distilled spirits range from 31.3¢/gallon proof for whiskey to $1.38/gallon proof for rum. Some distilled spirits not produced in Canada, such as tequila, may enter duty free. U.S. tariffs on distilled spirits range from 39¢/gallon proof for Scotch and Irish whiskeys to $3.40/gallon proof for some brandies. Appropriate excise duties are also applied in both countries. These tariffs do not appear to have hindered the trade of distilled products between the two countries.

- The distribution systems maintained by the provincial governments often limit the number of brand listings available to U.S. distillers, thereby restricting access to the Canadian market. The U.S. distilling industry is very vocal in its complaints about its limited opportunity to compete, claiming that the regulations and restrictions imposed by the provincial distribution systems act as a non-tariff barrier to trade. However, similar state-run monopolies exist in 18 states, called control market areas, in which the sale of Canadian bottled whiskey has declined relative to the sale of Canadian whiskey bottled in the U.S., implying that U.S. brands may have some advantage over Canadian brands in these states that does not occur in freer U.S. markets. The elimination of these U.S. market barriers could improve the outlook for the Canadian industry somewhat. It is unknown what effect increasing the number of U.S. brand listings in Canadian markets would have on domestic distillers.

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- Conditions in the U.S. distilling market bear some resemblance to those in Canada. The industry is being faced with decreasing demand, while dark liquors lose market share to white goods (vodka, gin, white rum, etc.) and to specialty liquors such as brandy, cordials and sweet pre-mixed drinks.

- Canadian distillers have generally not been successful in exporting Canadian whiskey to countries other than the United States. However, both Japan and Europe offer significant export market opportunities, should some major obstacles be removed. In Japan, tariff rates on imported Canadian whiskey are prohibitively high, thereby favouring Japanese blenders of imported bulk Scotch whiskey. In Europe, tariff rates do not present as serious a problem as the lack of EEC recognition of Canadian whiskey as a product of unique origin, as has been accorded Scotch whiskey, cognac or bourbon.

- In 1983, the total U.S. consumption of distilled spirits was 157 million cases, a 5.5% decline since 1979. Surprisingly, consumption of imported Canadian whiskey increased slightly over the period, faring much better than U.S. whiskeys and other imports such as Scotch. The resilience of Canadian whiskey was mainly due to the increased imports of "bulk Canadian" whiskey to be bottled in the U.S. This has resulted in an extended variety of brands and price levels providing consumers with a wider range of choice, especially in the lower-priced end of the market. In 1983, the less expensive, so-called "bulk-brands" accounted for over 64% of Canadian whiskey sales in the U.S.

c) Technological Factors

- The Canadian distilling industry is as sophisticated technologically as its major competitors. Technology development in the industry currently stresses modernization of plants to achieve lower cost production as well as product development. Packaging is a concern since usage of glass bottles is very expensive; there has been some consideration of usage of PET (plastic) bottles but the general feeling seems to be that image concerns and the associated cost of new bottling lines would delay any early acceptance of this technology.

d) Other Factors

The distilling industry is very sensitive to high and fluctuating interest rates. For example, whiskey must age for a minimum of three years before being packaged and sold and therefore must be carried as inventory. This ties up a distilling company's working capital, making it more vulnerable to changes in the capital markets.

3. FEDERAL AND PROVINCIAL PROGRAMS AND POLICIES

The major constraining factor on distilling sector growth and viability, as viewed by the industry, is the high level of government taxation on their products. The total impact of federal and provincial taxes and mark-ups on the end price of distilled spirits is extremely large. The industry estimates that over 80% of the retail price of spirits in provincial liquor board outlets is accounted for by mark-ups and taxes. By comparison, all taxes in the U.S. account for less than 50% of the retail price of distilled spirits, although retail mark-ups are subsequently added by private retailers.

4. EVOLVING ENVIRONMENT

The key to understanding the future outlook for the alcoholic beverages industries is found in the shifting importance of various demographic age groups. The aging of the "baby boom" generation will have a strong effect on overall consumer preferences. The distilled beverages industry could experience some modest growth [illegible] to spirits and away

.../4

from brewery products. In particular, rising affluence among "baby boomers" could trigger a resurgence in the dark spirits market, especially for upscale, premium-priced products.

Product innovation in the distilling industry is concentrating on developing new, sweet tasting products to appeal to younger drinkers. Much of the emphasis has been on cream based liqueurs in an attempt to copy the recent success of Bailey's Irish Cream.

There are strong indications that the next 5-10 years will also see an increasing health-consciousness among North American consumers. Low calorie and low alcohol beverages may benefit from these trends at the expense of other products. Current concerns regarding drinking and driving have prompted several U.S. states to raise their legal drinking age and in Canada have caused tougher restrictions including the introduction of stiffer penalties for impaired driving in the Criminal Code. If these trends become widespread, a considerable number of potential spirits consumers could be removed from the market.

North American demand for distilled spirits has been declining for several years, leaving Canadian plants vastly underutilized. While there may be potential for modest growth later in the decade, as a maturing population switches away from brewery products, it is doubtful that the industry's major companies will make substantial new investments in production capacity. Nonetheless, profits in the industry should remain reasonably strong and this income will likely be streamed toward new investment opportunities. For example, Seagram has invested heavily in U.S. and European wine production and is a major owner of DuPont, the chemical manufacturer; while Hiram Walker has become a major participant in the Canadian energy sector through Hiram Walker Resources.

5. COMPETITIVENESS ASSESSMENT

The key to competitiveness in the distilling sector is brand acceptance, availability and recognition, and in these areas the Canadian distilling industry is highly competitive internationally and has a world-wide reputation for quality. Seagram and Hiram Walker have world scale distilling plants with excellent economies of scale, and are very strong in the important U.S. market.

The volume of distilled spirits consumed in the North American market has been declining significantly in recent years. Shifts in consumer tastes have also caused a decline in the consumption of dark spirits, such as Canadian whiskey, in international markets. Nonetheless, the Canadian distilling industry is adapting quite readily and should remain competitive in the key U.S. market.

The industry could become more competitive through a rationalization of some production facilities to improve capacity utilization rates and efforts to exploit export markets, not only in the U.S. where Canadian products are already well established, but also in offshore markets such as Japan, Europe and Latin America.

The major Canadian distilling companies are well aware of market trends and have sufficient financial and market strength to exploit opportunities as they arise. The key difficulty facing the sector appears to be the very limited potential for new opportunities in the distilling business for the rest of the decade. As a result, both Seagram and Hiram Walker are extensively diversifying their business interests into chemicals, energy, real estate and wine.

PREPARED BY: FOOD AND CONSUMER PRODUCTS BRANCH, DRIE

ADM

DATE: 3.3.86

DISTILLERY SECTOR

PRINCIPAL STATISTICS	1980	1981	1982	1983	1984
Establishments	33	33	33	32	32
Employment	5509	5528	5282	5000	4,800
Shipments ($000,000's)	679	782	781	763	786
Exports ($000,000's)	313	349	345	355	388
Domestic Shipments ($000,000's)	366	433	436	408	398
Imports ($000,000's)	125	140	151	132	165
Canadian Market ($000,000's)	492	573	593	540	563
Exports - % of Shipments	46.0	44.6	44.2	46.5	49.4
Imports -% of Domestic Market	25.5	24.4	26.4	24.4	29.3

REGIONAL DISTRIBUTION	ATLANTIC	QUEBEC	ONTARIO	WEST
Establishments - % of total	6	27	42	24
Employment - % of total	2	28	55	16
Shipments - % of total	2	23	58	17

FOREIGN TRADE		U.S.	EEC	ASIA	OTHERS
Imports - % of total	1981	9	72		19
	1982	8	73		19
	1983	9	69		22
	1984	7	73		20

		U.S.	EEC	ASIA	OTHERS
Exports - % of total	1981	96	1	1	2
	1982	96	1.5	1	1.5
	1983	97	1	1	1
	1984	96	1.5	1	1.5

MAJOR FIRMS*	LOCATION	OWNERSHIP
Joseph E. Seagram and Sons Ltd.	All regions	Canadian
Hiram Walker and Sons Ltd.	Ont., B.C.	Canadian
Gilbey Canada Inc.	Ontario	U.K.
Corby Distilleries Ltd.	Ontario	Canadian

*Note: Estimates do not include foreign operations of the firms identified.

(E): Estimate

Feb. 20, 1986

DRAFT

COMPETITIVENESS PROFILE

Name of Sector: WINERY SECTOR

1. Structure and Performance

Structure

- The Canadian winery sector (SIC 1141) produces a wide variety of red and white table and sparkling wines, and several new "wine cocktail" products. The wine industry is a vital customer for grape growers in Ontario and British Columbia, although approximately one half of the wine deemed to be domestically produced is made from grapes, juice or concentrate imported from the U.S., or is imported in bulk and merely bottled in Canada.

- There were 33 winery establishments in Canada in 1984, with operations concentrated in Ontario and British Columbia. The Canadian wine industry has five major firms, and a number of smaller producers. The two publicly-owned companies are Andres Wines Limited and T.G. Bright and Co. Limited. In addition, there are three other majors owned by companies involved in the food and beverage industry: namely Rideout Wines Limited (Chateau-Gai, Casabello) owned by John Labatt Limited; Jordan and Ste-Michelle Cellars Ltd., owned by Carling O'Keefe; and Calona Wines Ltd., owned by Nabisco Brands (Canada) Ltd. These five companies account for some 85% of wine produced in Canada, showing a high degree of sector concentration.

- Costs of production are high in Canada due to the shortness of the growing season, lack of appropriate land for grape growing and overall climate factors.

Performance:

- In 1984, the Canadian winery industry had total shipments of $226 million, of which exports were $1 million. Canada imported $226 million worth of wine in that year, primarily from the EEC (84%) and the United States (5%). The Canadian market consumes approximately 2 million hectolitres of wine annually, with slightly more than half of this volume supplied by imports. From 1980 to 1984, the value of Canadian wine shipments increased 33%, although industry employment here remained fairly steady at around 1300.

- Canadian wines are finding increasing acceptance in the domestic market following a major shift in emphasis from sweet, sparkling "party" wines to higher quality table wines based on European and Californian style grapes and methods. Nonetheless, the low-quality image attached to the industry has proven very difficult to overcome. As a result provincial governments, particularly Ontario and British Columbia, seek to protect the industry by raising the prices of imported wines, especially those in the low price range that would be in direct competition with domestic products.

- Profits in the wine industry are generally lower than the food and beverage industry average due to small scale and changing products and processes. Investment in the industry by parent corporations over the past several years had been strong until the recent upsurge in imports from EEC producer countries. Nonetheless, the industry may be able to capture some import substitution opportunities provided quality continues to improve.

- The Canadian-owned Seagrams company is a major marketer of wines in the U.S., ranking number two behind Gallo with a 11.2% share of the U.S. market, after purchasing The Wine Spectrum from Coca Cola Ltd. The U.S. market is highly concentrated, with the top four firms producing over 51% of U.S. wine. By far the largest is Gallo with a 27.7% market share, followed by Seagrams (11.2%), Heublein (6.5%) and Villet Banf (6.0%).

2. Strengths and Weaknesses

a) Structural

- The Canadian wine industry is currently neither price nor quality competitive with European and U.S. wines. The industry is centered in Ontario and British Columbia, where grape producers are dependent upon the vintners for markets. Currently the domestic supply of high quality grapes is insufficient to keep pace with vintners' demands.

- As much as 50% of wine listed as domestically produced is merely bottled in Canada, or is made from imported grapes or concentrates. Because of the recent development of the industry in Canada, most Canadian wineries are not yet of sufficient scale to be cost competitive with the enormous wine-making facilities of California and Europe.

- The Canadian wine industry has shifted in recent years away from sweet sparkling wines to higher quality table wines based on European and Californian varietal grapes. However, the supply of high quality domestic grapes is erratic and twice as expensive as grapes imported from competing areas. This problem is exacerbated by the agricultural policies of the B.C. and Ontario governments that restrict the access of wineries in their provinces to imported grapes through marketing board supply management policies.

b) International Trade Related Factors

- The Canadian and U.S. tariff rates on wine are as follows:

	Canada	U.S.
Still wines	20¢/gallon	37.5¢ - 62.5¢/gallon
Sparkling wines	$4.00/doz. bottles	$1.19/gallon

- It can be seen that U.S. wine producers have much higher tariff protection than Canadian vintners, but this is more than compensated for by the provincial government practices of setting retail prices for imported wines higher than for competing domestic brands. In this way the provincial governments protect indigenous producers from both U.S. and European competition. The Canadian wine industry is not export-oriented, and sees its major opportunity for growth resting in import substitution.

- Currently there is an international wine glut, caused primarily by EEC subsidies to grape producers that have resulted in increased production with no increase in domestic demand, and falling world prices as these wine surpluses are dumped in other markets. In addition, several years of bumper harvests in California's grape producing regions have compounded the world-wide oversupply.

- The major threat to the Canadian wine industry is this competition from low-priced wines imported from countries with large wine surpluses. The quality and competitiveness of Canadian wines is steadily improving, but the industry still requires some protection to compete successfully with subsidized producers elsewhere. As well, EEC and U.S. vintners have cost advantages due to larger scale operations, secure grape supplies and pricing advantages due to reputation and brand recognition.

- The U.S. wine industry currently has a 100 million gallon surplus from the record 1982 grape harvest in California, and is being hurt by the strong U.S. dollar and the importation of government-subsidized wines from Europe. This is a major problem because U.S. wine drinkers are more price-sensitive than brand-loyal with price wars pushing the cost of 4 litres of wine to as low as $4. U.S. wine makers have filed a petition to the International Trade Commission charging EEC wine makers with

illegally selling wine in the U.S. at prices below their production costs.

- Wine industry analysts are predicting 3% to 4% growth in the U.S. wine consumption this year. However, with only 7% of the population consuming nearly two-thirds of all table wine sold, the potential for future growth is substantial. The wine industry in the U.S. is attempting to launch a co-operative campaign among vintners to promote wine consumption among non-drinkers.

c) Technological Factors

- Research is currently being devoted to developing improved vinifera and hybrid grape varieties for planting in Canada. Some research on flavour modification is also underway. More innovation is also being applied to packaging techniques, such as aseptic packaging and the "bag in a box" method. New wine-based beverages have also been developed to make use of surplus, lower quality wine. (e.g. "Canada Cooler")

- Wine-making is becoming increasingly industrialized, with capital intensive processes and large economies of scale. The adoption of larger scale operating plants would make Canadian wineries more cost competitive with international competitors but would require a stronger agricultural base. However, investment is slowly growing in line with increasing production, improved quality and marginally increasing profits.

d) Other Factors

- Recent exchange rates have improved the industry's competitiveness vis-à-vis U.S. competitors, but the strong Canadian dollar relative to European currencies exacerbated the problem of subsidized production in the EEC. Increasing imports of French and Italian wine have made Canadian vintners more conservative in their plans for expansion.

3. Federal and Provincial Programs and Policies

In recent years, the industry has received federal government assistance under IRDP, EDP and IRAP for establishment, expansion/modernization and for innovation in both products and processes. Proportionately, program assistance has been highly innovation-oriented ($1.2 million versus $2.5 million for other purposes). However, programs have only a minor influence on the industry relative to that exerted by government regulation and provincial distribution systems for alcoholic beverages.

The wine industry is closely regulated with influence from both levels of government. Federal government involvement covers such areas as excise tax assessment and regulation, labelling, competition aspects and advertising on radio and television. Metric Commission standardization and conversion requirements have also now been met.

Provincial government involvement in the industry covers media advertising regulations, grape marketing boards and liquor control boards. The Wine Content Act and grape marketing boards deal with the importation of grapes, requirements on the percentage of provincially-grown grapes to be used, and the importation of concentrates or wine for blending purposes. The liquor control boards determine listing policies, price mark-ups and shelf space, all of which directly affect retail availability and prices to consumers, as well as the distribution of wines and, indirectly, the return to the wineries.

4. Evolving Environment

On the basis of changing demographic patterns and consumer trends, the prospects for increased wine sales in Canada appear excellent. The growth of the table wine market indicates an increased willingness among consumers to drink wine with meals on a fairly regular basis, thereby expanding the consumer base considerably.

The industry requires a great deal more development if it is to compete with European and Californian vintners in the longer term. There are currently large surpluses of European wines, partially due to EEC agricultural policy, which, combined with California surpluses, will continue to put downward pressure on prices. Profits in the industry probably will not rise substantially in the next few years because of the price depressing effect of the current world glut in wine production. Although the quality of Canadian wine is improving, domestic producers will continue to face a pricing problem in coming years. Nonetheless, Canadian wine makers will need to make substantial investments in the coming years to improve production processes, increase efficiencies of scale to lower costs and to improve quality.

5. Competitiveness Assessment

The Canadian wine industry is at an early stage of development and is not price/quality competitive with European and U.S. wine industries. Nonetheless, Canadian wines are finding increasing acceptance in the domestic market following a major shift in emphasis from sweet, sparkling "party" wines to higher quality table wines based on European and Californian style grapes and methods, although the image that Canadian wines are of inferior quality is still difficult to overcome.

Over the past decade, Canadian vintners have been able to capture approximately 50% of the Canadian wine market; however, this is primarily due to provincial government regulations concerning the availability and pricing of imported wines. As well, much of this "domestic" wine is imported in bulk and only bottled in Canada, or is made from imported grapes, juice or concentrate. Agricultural and land use policies in the major grape-growing provinces have the effect of increasing the cost of domestic grapes, while limiting the access of wineries in those provinces to imported grapes.

While the basic problems would remain, the industry could improve its situation through:

1) increased production of high quality vinifera grapes for sale at a lower price, especially in British Columbia where the grape marketing board and land use policies combine to raise grape prices to about double the price of imported grapes;

2) effective expansion of the domestic market through lessening the restrictions on interprovincial trade in domestic wine and through active marketing compaigns by domestic producers; and

3) increased production scale to capitalize on improving plant efficiencies through larger grape harvests, or perhaps through increased grape imports.

PREPARED BY: FOOD AND CONSUMER PRODUCTS BRANCH, DRIE

ADM

DATE: 3.3.86.

WINERY SECTOR

PRINCIPAL STATISTICS	1980	1981	1982	1983	1984
Establishments	32	32	33	33	33
Employment	1313	1385	1298	1300	1350
Shipments ($000,000's)	170	191	218	230	226
Exports ($000,000's)	1	1	1	1	1
Domestic Shipments ($000,000's)	169	190	217	229	225
Imports ($000,000's)	166	169	189	164	226
Canadian Market ($000,000's)	335	359	406	393	451
Exports - % of Shipments	0.5	0.5	0.5	0.6	0.4
Imports - % of Domestic Market	49.6	47.0	46.6	41.7	50.1

REGIONAL DISTRIBUTION	ATLANTIC	QUEBEC	ONTARIO	WEST
Establishments - % of total	9	27	30	33
Employment - % of total	3	14	50	33
Shipments - % of total	3	16	46	35

FOREIGN TRADE		U.S.	EEC	ASIA	OTHERS
Imports - % of total	1981	9	75		16
	1982	8	79		13
	1983	7	87		6
	1984	5	84		15

		U.S.	EEC	ASIA	OTHERS
Exports - % of total	1981	70	25		5
	1982	72	8		20
	1983	67	9	2	22
	1984	65	17	2	16

MAJOR FIRMS*

	LOCATION	OWNERSHIP
Andres Wines Ltds.	All regions	Canadian
T.G. Brights and Co. Ltd.	Que., Ont.	Canadian
Rideout Wines Ltd.	Atl., Ont., Prairies	Canadian
Jordon & Ste-Michelle Cellars Ltd.	Ont., B.C., Prairies	U.K.
Calona Wines Ltd.	B.C.	U.S.

Date: Feb. 20, 1986

DRAFT - PROJET

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

COMPETITIVENESS PROFILE

BOOK, WRITING AND COATED PAPER
(Fine Papers)

1. Structure and Performance

a) Structure

The products of this industry, also referred to as "fine papers", are generally characterized by their high content of chemical wood pulp, although one group, light weight coated (LWC), can contain up to 49 percent groundwood pulp. The two major grades are: the commodity papers (e.g. copying paper, computer and form paper, book and printing paper); and the higher value, lower volume products (e.g. writing, cup and food container stock). Uncoated groundwood printing and tissue papers are not included in this sector.

The Canadian fine paper industry has a capacity of 1.3 million tonnes representing about 6-8 percent of total world capacity. Shipments for 1985 were over $1.1 billion or approximately 8 percent of all Canadian pulp and paper sales. Total employment is 7,100 persons.

There are eight companies producing fine paper at fifteen mills in Canada and all are Canadian owned. There are 5 plants producing more than 100,000 tonnes per year, 5 plants producing between 50,000 and 100,000 tonnes and 5 plants producing less than 50,000 tonnes per year. The mills are located in Ontario, Quebec and British Columbia. Ontario and Quebec mills together produce over 90 percent of all fine papers.

Several paper mills are fully integrated (having a pulp manufacturing section within the mill) but others are only partially integrated or non-integrated in which case pulp has to be purchased from other sources, either from within the same company or on the open market.

The world fine paper industry is a very protected industry, characterized by domestic orientation behind high tariff walls. The post-war GATT negotiations have aided in reducing these barriers but tariffs remain significant in many markets including the EEC, Canada and Japan.

Up to the late 1970s, most of the fine paper domestic demand in Canada was filled by the local industry. Since then, with further tariff reduction in the Tokyo Round, some rationalization and specialization in fewer grades have occurred and both imports and exports have increased. Imports now account for 30 percent of Canadian requirement and, at the same time, exports have risen to 27 percent of total Canadian shipments. Most of this trade is with the U.S. The major growth in export has been in the wood-free (100 percent chemical pulp) business comunications papers where U.S. tariffs are very low or zero.

Domtar is the largest producer and has the largest share of both the domestic and export markets. The other fine paper companies are about equal in capacity to one another but are not consistently active in exports.

Major competitors for Canadian mills in export markets have been the United States, Scandinavia, Japan, the United Kingdom and Brazil, depending on grades.

The North American fine paper industry generally recognizes the need to rationalize to meet a more competitive world trade environment by either upgrading existing plant and machinery, or closing inefficient units. So far in Canada, no mills have shut down but several machines have been retired and the balance are being updated. Two new Canadian fine paper machines were installed during 1983-84 and four more machines (in three mills) will be in production by the end of the decade. In the U.S., it seems that a higher percentage of old machines are being replaced by state-of-the-art equipment than in Canada.

b) Performance

For many years growth in the Canadian fine paper industry focused on the needs of the domestic market. As GNP grew, the industry expanded accordingly without concern with respect to imports, given the high tariffs in place.

During the 1968 to 1982 period, additional capacity in Canada was achieved by minor mechanical improvement of existing machines. Since then, major investments have commenced. Two new machines are already in production. When four new machines come on stream between 1986 and 1990, Canadian capacity will have increased by over 60 percent. The older mills, if they are able to adjust, will specialize in the higher value, low volume grades. The new mills will produce the commodity grades.

Investments in the fine paper industry since 1983 amount to $0.5 billion. Another $1.3 billion will be spent before 1990 and other proposed modernization projects could raise the total to over $2 billion.

2. Strengths and Weaknesses

a) Structural

The fast growing commodity grades (of fine paper) must be manufactured on wide, high speed machines to be profitable. The writing and related grades can be produced on older, slower machines. The Canadian industry has started in recent years to adjust to the growth in demand of commodity grades. The older mills will need to modernize their equipment and integrate backward with pulp production. It is no longer cost effective to build non-integrated mills. All new ones must include a pulp mill and be located in a sustained yield forest area. Canada still has such locations.

Economies of scale are a very important factor in fine paper production costs. The U.S. industry, built to service domestic demand 10-12 times the size of the Canadian market can take advantage of these economies of scale through grade rationalization. Before the recent investments commenced, all the Canadian fine paper industry lagged behind its foreign competitors in terms of the age of the plant and speed and size of machines. When completed, the new investments will place much of the Canadian industry on a comparable basis. However, older mills will continue to be at a disadvantage and will need further adjustments to find a profitable niche for their higher value products.

Labour rates and social benefits were in recent years higher in Canada than in the U.S. although the last labour settlements in Canada appear to have modified this situation.

Transportation costs are not critical in this sector because of the relatively high value of the fine paper, but they favour the American mills, which are normally located close to large population centres. However, many of the Canadian mills are situated some 500 to 700 kilometres from the U.S. markets and can compete in these markets.

The main strengths of the Canadian fine paper industry are: reliable, pure water sources; accessible wood and pulp supplies; inexpensive energy and fairly stable labour conditions.

U.S. producers have a marketing advantage in their own market because of their close relationship or even ownership of the paper merchants. The purchase of several U.S. merchants by Canadian fine paper manufacturers will help reduce this advantage.

b) Trade Related Factors

Since 1979 the U.S. has eliminated tariffs on wood-free printing papers leaving only tariffs ranging from 2.4 to 4.0 percent on writing papers and light-weight coated papers. On January 1, 1987, Canada will have reduced its tariffs in the same range of grades from 12.5 to 6.5 percent, the Japanese from 10.0 to 5.8 percent but the EEC only from 12.0 to 9.0 percent. Combined with free entry for the Scandinavians, it makes the EEC a very difficult market for North American exporters.

Non-tariff barriers (NTB) have been a continuing problem for the Canadian industry. Many U.S. state governments have procurement practices favouring local paper mills, and South American countries have special "administration charges" for imported goods. Of particular concern to the industry is the pending customs tariff nomenclature developed by the Customs Cooperation Council (CCC) in which technical change to an existing paper grade could result in its reclassification into a higher duty category although the end use is unchanged. This would increase other countries' protection for their domestic paper industry.

c) Technological Factors

The same fine paper manufacturing technology is available throughout the world. This technology, however, has evolved rapidly in the last 20 years, making the new or modernized plants much more productive than plants only a decade old.

The technological status of the industry can be measured by the relative level of investment in recent years. From 1968 to 1982 the fine paper industry capacity increases were through relatively inexpensive mechanical modifications and not by installation of large new machines. This 14 year period was very difficult for the industry with a Canadian dollar close to parity with the U.S. dollar, several long strikes and rapidly decreasing tariff rates as the U.S. industry was modernizing and becoming more cost competitive. Since 1983 this situation has completely reversed with almost $2 billion to be spent on new machines and plant modernization by 1990. To date, one quarter of this has been spent.

Before the advent of xerographics, PC computers and no-carbon-required (NCR) multi-forms, the business papers sector of the fine paper industry was relatively stable. There has been a drastic change over the past decade, with a large increase in demand for both wood-free grades (using high percentages of chemical pulp) and coated publication papers. The new printing processes required better quality papers with better sheet uniformity, better surface quality, etc. All mills must meet these requirements if they are to survive. While many mills have now made the necessary adjustments, conversion has yet to be completed in mills with less adequate financial resources.

d) Other Factors

Currency fluctuations have a major influence on the competitiveness of the fine paper industry in general and on commodity grades in particular such as wood-free business papers. Exchange rates favourable to Canadians will help commodity grade exports to the U.S. as the profits on these grades are marginal. Exchange rates are not as critical a factor to producers of special low volume, high value papers, selling quality and after-sales service, who usually work with much higher margins.

3. Federal and Provincial Programs and Policies

The fine paper industry has benefited from both federal and provincial programs including the Pulp and Paper Modernization Program, IRDP and federal-provincial industrial agreements under the umbrella of the multisectored ERDA. As well, various federal and provincial research programs have been utilized by the industry either in-house or indirectly through the Pulp and Paper Research Institute (PPRIC)

4. Evolving Environment

With the advent of computers and other forms of electronic data collectors, it had been suggested that the "paperless society" would be with us by 1990. The reverse now seems to be the case with predictions from several leading econometric consulting groups that printing and writing paper demand in North America will grow 4 to 5.5 percent per year through to the year 2000. Coated paper will show the sharpest growth during this period. This high rate will be caused by the healthy economic situation and the continuing desire to use quality paper in advertising. Further upgrading in paper quality over time is anticipated.

5. Competitiveness Assessment

Over the past decade, the Canadian fine paper industry has lagged behind the U.S. in new investment in fast, high capacity paper machines. As a result, the Canadian industry in general has not been competitive in the high volume, price sensitive, commodity sector of the market. However, the industry is taking impressive actions to position itself to compete in these markets. This is evident by the approximately $2 billion in capital expenditures announced and underway in recent years.

The industry includes some small, old, non-integrated mills that cannot compete on the international market. These plants would require upgrading and with rationalization and elimination of unprofitable grades, they could become competitive in the higher value, low volume, less price sensitive segments of the market.

Parallel to upgrading the physical plant, at least three Canadian fine paper companies have purchased paper merchants in high demand areas of the eastern U.S. Such merchants are essential to making permanent inroads in that market.

Prepared by: Resource Processing Industries Branch
DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

Assistant Deputy Minister
Consumer Goods, Services and Resource Processing

Date: JUL 24 1986

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

FACT SHEET

NAME OF SECTOR: Book, Writing & Coated Papers (Fine Papers) **SIC(s) COVERED:** 2719

1. PRINCIPAL STATISTICS

	1982	1983	1984	1985
Establishments	15	15	15	15
Employment	7100	7100	7100	7100
Shipments ($ millions)	854	900	1043	1100
Gross Domestic Product* (Constant 1971-$ millions)	NA	NA	NA	NA
Investment ($ millions)	NA	NA	NA	NA
Profits After Tax ($ millions) (% of sales or revenue)	NA	NA	NA	NA

* With one exception, all fine paper companies are divisions of much larger corporations; therefore, financial data per division are difficult to isolate.

2. TRADE STATISTICS

	1982	1983	1984	1985
Export ($ millions)	174	175	266	300
Domestic Shipments ($ millions)	680	725	777	800
Imports ($ millions)	191	242	351	346
Canadian Market ($ millions)	871	967	1128	1146
Exports as % of Shipments	20	19	25	27
Imports as % of Domestic Market	22	25	31	30
Canadian Share of International Trade FAO Statistics (may contain groundwood paper data)	NA	8	8	8

Source of imports (top 4) %	U.S.	E.E.C.	ASIA	OTHERS
1982	95	2	3	
1983	95	2	3	
1984	74	24	2	

Destination of exports (top 4)	U.S.	E.E.C.	ASIA	OTHERS
1982	85	6	9	
1983	92	1	7	
1984	88	1	11	

3. REGIONAL DISTRIBUTION - Average over the last 3 years

	Atlantic	Québec	Ontario	Prairies	B.C.
Establishments - % of total	Nil	43	50	Nil	7
Employment - % of total	Nil	41	57	Nil	2
Shipments - % of total	Nil	35	53	Nil	12

4. MAJOR FIRMS (1984 data)

Name	Ownership	Location of Major Plants
Domtar Fine Papers	Que. Govt. 45% Public 55%	Que. Ont.
Kruger Inc.	Kruger family 100%	Que.
E.B. Eddy Forest Products	Geo. Weston 100%	U.S., Que., Ont.

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Name	Ownership	Location of Major Plants
Abitibi-Price Inc.	Gulf Canada 90% Public 10%	Ont.
Rolland Inc.	Family 57% Public 43%	Que.
Great Lakes Forest Products	Cdn. Pacific 54% Public 46%	Ont.
Island Paper Mills	MacMillan Bloedel 50% Fraser 50%	B.C.
Fraser	Noranda 100%	U.S., B.C., Ont.
New Mills		
Repap-Miramichi Pulp and Paper Inc.	Repap Enterprises 100% (Start-up mid 1986)	N.B.
Weyerhaeuser Canada Ltd.	Weyerhaeuser Co. U.S. (100%) (Start-up 1989)	Sask.

DRAFT - PROJET

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

April 21, 1986

COMPETITIVENESS PROFILE

Aluminum Smelting

1. Structure and Performance

a) Structure:

This industry sector produces aluminum metal, usually in ingot form, by the electrolysis of alumina (aluminum oxide). Apart from the manufacture of ingots, many smelters now also produce continuous cast billets. Aluminum is used principally in the construction, transportation equipment and packaging industries. The aluminum semi-fabricating sector is covered in a separate Competitiveness Profile on the Non-Ferrous Semi-Fabricating Industry.

The aluminum smelting sector in Canada consists of two established companies, Alcan and Canadian Reynolds, with a third company, l'Aluminerie de Bécancour, about to start production. Employment in the sector in 1984 was 11,500; shipments, $2 billion. Alcan is by far the largest producer, with five smelters in Quebec and one in B.C., with a total capacity of 1,075,000 tonnes. Reynolds has a smelter in Baie Comeau, Quebec, with recently expanded capacity of 272,000 tonnes. L'Aluminerie de Bécancour will have an initial capacity of 115,000 tonnes which will be doubled by the middle of 1987.

Approximately 75 to 80 per cent of the Canadian production of aluminum is exported. The U.S. is the major importer taking 65 to 70 per cent of the total, followed by Asian countries with 20 to 30 per cent. Canadian exports to Europe are generally insignificant, because of European self-sufficiency and tariffs. Imports of primary aluminum ingots into Canada amount to 10 to 25 per cent of domestic consumption and are mostly from the U.S. Such imports arise for a variety of reasons which vary year by year, but which are a reflection of competitive market conditions.

Alcan exports Canadian-produced ingots to its own semi-fabricating plants, for instance in the U.S., as well as to general markets abroad. Practically all of the ingots exported from Canadian Reynolds go to Reynolds' plants in the U.S. for further fabrication. It is expected that most of the ingots from l'Aluminerie de Bécancour will be exported to the U.S. and Japan for conversion in these countries.

Alcan is integrated backwards into production of alumina and mining of the basic ore, bauxite. Most of the alumina production (and all of the bauxite mining) is carried on outside of Canada. Both Reynolds and l'Aluminerie de Bécancour import their alumina requirements from their parent companies.

Alcan ownership is widely held by the public, with approximately 50 per cent Canadian ownership. Canadian Reynolds is a fully owned subsidiary of Reynolds Metals Inc. of the U.S.A. L'Aluminerie de Bécancour is owned 50.1 per cent by Péchiney, 24.95 per cent by Alumax (American/Japanese) and 24.95 per cent by the Quebec government.

In 1985, western world primary aluminum capacity amounted to 14.33 million tonnes distributed among 126 smelters:

Area	Number of Smelters	Capacity million tonnes	Per Cent of World Capacity
Canada	7	1.35	9.4
U.S.A.	32	4.67	32.6
W. Europe	45	3.59	25.1
Asia	21	1.80	12.6
Africa	4	.62	4.3
S. America	11	1.20	8.3
Oceania	6	1.10	7.7
TOTAL	126	14.33	100.0

.../2

About 49 per cent of total capacity is owned by six privately-owned multinational companies (Alcan, Alcoa, Kaiser, Reynolds, Alumax and Alusuisse) which operate on a world-wide basis and are, for the most part, integrated backwards to raw materials and forward to finished products. About 25 per cent of western world capacity is now government-owned, either on a full or partial basis. Of this capacity, 60 per cent is owned by European governments in France, Germany, Norway, Italy and Spain. In recent years, there has been an increase in government smelter ownership (apart from the increase resulting from nationalization of Péchiney in France) owing to new smelter construction in developing countries. The former dominance of the six integrated producers is on the decline and their characteristics are changing. Specifically, there is a trend amongst these companies away from self-sufficiency in either the raw material, alumina, or aluminum ingot, towards purchase of a percentage of their requirements on the free market. This trend is in response to excess world capacity generated by non-integrated producers of bauxite, alumina and ingots and the resulting low spot prices for these commodities.

With minor exceptions, government (fully or partially-owned) smelters operate under the same financial incentives and constraints as those operated by private enterprise. Nevertheless, the presence of many large non-integrated producers has put ingot prices under downward pressure and contributed to the increasing importance of prices established at the London Metals Exchange (LME).

b) Performance:

Canadian smelter capacity over the past decade has increased by about 20 per cent, from 1.1 million tonnes to about 1.35 million tonnes in 1985 and now represents about 9.4 per cent of installed western world capacity. Output over this period has been relatively flat, generally in the range of 1.0 to 1.1 million tonnes annually. However, the value of shipments and of exports, measured in current dollars, has shown a steady increase.

Employment by the smelting industry was about 14,600 in 1974 but declined by 20 per cent to 11,500 by 1984 as a result of persistent efforts by the industry to improve productivity.

The financial performance of the Canadian smelters of Alcan and Reynolds are not reported separately from their semi-fabricating operations. The remarks below therefore apply to total corporate activities. The past four years have not been favourable for the aluminum industry; in 1982, Alcan's Canadian profits dropped to an eighth of those of the previous year and, while profits recovered in 1983 and 1984, a loss was registered in 1985. Canadian Reynolds was in a loss position from 1980 to 1982 and showed a modest profit in 1983.

Overall international operations of both Alcan and Reynolds Metals Inc. fared worse than those in Canada. In 1982 Alcan reported a loss of U.S. $58 million while in the following year Reynolds (U.S.A.) reported a loss of U.S. $99 million. Both companies were profitable in 1984. Shipments were up by 20 per cent in 1985 but, due to depressed prices and large write-downs, Alcan reported a loss of U.S. $180 million while Reynolds (U.S.A.) incurred a loss of U.S. $292 million.

2. Strengths and Weaknesses

a) Structural:

To produce aluminum metal, bauxite is first refined into alumina, then to aluminum. A quantity of 4.7 tonnes of bauxite yields two tonnes of alumina which in turn yields one tonne of aluminum. The other major input into aluminum production is electric power for electrolysis. Depending on efficiency of the installation, from 13,500 to 16,500 kwh is required per tonne of aluminum. The costs of alumina and energy

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can vary quite widely, but may typically be of about equal magnitude and together amount to 50 to 60 per cent of total aluminum production costs. The availability of low cost energy is generally regarded as the single most important factor in the siting of new aluminum smelters.

Originally, refining of bauxite into alumina and aluminum smelting were sited at the marketplace. Refining operations are now, however, established near the bauxite source so as to reduce material transportation costs. With the oil crisis of 1973, and the subsequent escalation of energy prices, new smelter projects are being based primarily on the availability of low cost energy, generally hydro, flare gas or coal. Many older smelters, using high cost electricity from fossil or nuclear energy (in the U.S., Japan and Europe) have either been shut down or have significantly curtailed production.

The energy crisis, which resulted in closure of many smelters in developed countries has considerably improved Canada's position. Even during the severe 1982 recession, Canadian producers were able to continue to operate at above 90 per cent of capacity while the industry average was about 75 per cent.

Western world smelting capacity in 1986 may decline from the figures noted for 1985, because of additional smelter closures in the U.S. and Japan. Current estimates for primary production in 1986 are for 12 million tonnes representing operations at about 90 per cent of capacity. It is expected that in 1986 consumption will somewhat exceed production resulting in some draw-down of producers' inventories and firming of prices. Smelter shutdowns have primarily affected the U.S. and Japan, and these countries will in the future increasingly rely on imports. These are both major customers of Canada and it therefore seems likely that demand for Canadian aluminum will strengthen in 1986 and that capacity utilization will exceed 90 per cent.

Canada's major producer, Alcan, expanded its smelting capacity in Canada because it was able, and continues, to generate its own low cost hydro power. Assisted by a world-wide sophisticated distribution network, it became the western world's leading exporter of aluminum ingot. Alcan, however, lacked forward integration to the same degree as other major producers, and was subject to large fluctuations in aluminum ingot demand and prices. In recent years, a strategy was therefore adopted of acquiring fabricating facilities abroad, with the result that at present only 40 per cent of Alcan's world volume output is still in the form of ingots. One such acquisition was Arco's aluminum interests in the U.S. While the main advantage of forward integration is the assurance of an in-house market for ingots, the company also profits from the improved price margins which generally apply to semi-fabricated aluminum products.

Reynolds' Baie Comeau plant is one of the parent company's lower cost smelters and the plant is therefore assured of high capacity operation into the future.

Reynolds and l'Aluminerie de Bécancour rely on long term agreements with Hydro-Quebec for their electricity supply. Their contracts provide energy towards the low end of the world's cost spectrum for electricity and provide protection against undue cost increases over a long time frame. Quebec has been able to provide favourable rates because it has had substantial excess hydro power.

While smelters in countries such as Australia, Brazil and Venezuela also have very low energy costs, Canada has the unique advantage of close proximity to the U.S. This factor, in combination with moderate energy costs and the availability of large blocks of energy, makes it a most desirable location.

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b) Trade Related Factors:

Canadian smelters are well placed regarding sales to the U.S. market where tariffs on ingots will shortly be entirely removed. Japanese tariffs on ingot will be eliminated January 1, 1988. Most of Japan's plants are already shut down because of high energy costs and Japan will rely heavily on imports from foreign smelters. Given Japanese interests (via Alumax) in L'Aluminerie de Bécancour, Canadian ingot exports to Japan are expected to increase.

There is little prospect for any significant drop in the European Community tariff on ingot, which will level out at 7 per cent in 1987. Europe is essentially self-sufficient from the viewpoint of aluminum supplies. Most of the individual European countries operate state-owned smelters; Norway, which is a signatory of the European Free Trade Agreement, with cheap hydro energy and very large production capacity, generally supplies any deficits that may exist in Europe. Moreover, Alcan operates wholly or partially-owned smelters in the U.K., Germany, the Netherlands and Spain. Except for some minor ingot exports to Germany resulting from Alcan's involvement in that country, there are no significant sales of Canadian aluminum to Europe.

c) Technological Factors:

Both Alcan and Reynolds have purchased state-of-the-art reduction technology for their latest expansions. L'Aluminerie de Bécancour benefits from the most recent Péchiney technology. Alcan has announced that it will use its own design for new large electrolytic cells in the proposed Laterrière, Quebec plant (now postponed). Most of the current technological developments are aimed at improving energy efficiency and productivity.

3. Federal and Provincial Programs and Policies

Canadian aluminum companies have not made use of federal government programs. However, provincial government policies relating to water rights and taxes and, in the case of Reynolds and l'Aluminerie de Bécancour, power rates, are important. In general, the provincial government's role has been to foster particular investment by, for example, offering competitive, long term, stable power rates.

4. Evolving Environment

Aluminum is becoming a mature metal. World-wide annual growth in aluminum demand will not likely approach the rates of the sixties and seventies but should continue at a more modest rate, perhaps of the order of 2 per cent. To some extent, the decline may be attributed to the growing importance of scrap recycling.

Over the next decade, it is expected that western world aluminum smelting capacity will rise by about 2 million tonnes, keeping pace with increased consumption. Average operating rates may approach 95 per cent during some periods. Today's sharp decline in some energy costs could result in the re-opening of some smelters in the U.S. At the same time, if lower energy costs stimulate economic activity, demand for aluminum could be strengthened.

Canada is likely to continue to represent an attractive location for aluminum smelting and may well attract more than a pro-rata share of new smelter investment by multinational aluminum producers. This is demonstrated by expressions of interest from Alusuisse for a smelter in Quebec as well as by Kaiser Aluminum. While Alcan has placed some projects on hold, it is likely that at least one might proceed within the next decade.

Further restructuring of the world's aluminum industry will largely depend on the future of energy costs. New smelters will be built in countries with low energy costs. In the developed world, these are Australia, Canada and, to a lesser extent, Norway. Australia is expected to overtake

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Canada by 1990 in the output of primary aluminum. In the developing world, the most attractive countries are those with both access to low cost energy and bauxite, such as Brazil, Venezuela and Indonesia. The key to smelter projects in developing countries in the past has been the development of the countries' hydro resources based largely on financing by the World Bank. With greater insistence by this institution on fiscal responsibility, energy costs in developing countries are expected to rise significantly in the future, and may reduce their attractiveness as smelter locations. Oil price declines to the levels reached by March 1986 are not expected to alter these basic trends.

While new uses for aluminum are being developed, some markets are being lost to plastics and composite materials. In the U.S., the growth of aluminum demand for packaging may be peaking. Its packaging industry accounts for about 30 per cent of total aluminum demand, with more than 80 per cent of this demand being accounted for by beverage cans. The latter are now recycled to the extent of about 50 per cent. Scrap recovery in the U.S. has developed into an increasingly important factor in the aluminum industry, and secondary aluminum now satisfies more than 25 per cent of total demand for this metal in the U.S. Clearly, as scrap recovery increases, primary aluminum growth declines.

New tougher aluminum-lithium alloys are expanding the use of aluminum in aeronautics and aerospace applications. Growing usage of aluminum in automotive applications is also expected for reasons of weight savings. However, with the decline in petroleum prices, growth may be slower than previously anticipated.

Following the lead of Alcoa, most of the major North American aluminum producers are strengthening their downstream integration and are venturing into non-aluminum businesses. Alcan, apart from its strategy of forward integration, is expanding into new fields such as aerospace, automotive, rail, packaging, electronics and communications through the acquisition of companies with expertise in these fields. Reynolds Metals Inc., on the other hand, a company already partially diversified into flexible packaging and aluminum building products in the U.S., is placing primary emphasis on following up its U.S. success with the aluminum beverage can by seeking to popularize it around the world. Expansion in use of this can in Canada may be expected.

5. Competitiveness Assessment

With a secure hydro power base and proximity to the prime U.S. market, Canadian aluminum producers are expected to remain competitive internationally. Because aluminum is a widely traded commodity, swings in exchange rates can have significant effects on profitability and competitiveness of the Canadian industry.

The proposed rationalization of Alcan's production facilities in Quebec should, over the longer run, further improve the Canadian industry's competitiveness.

Prepared by: Resource Processing Industries Branch
DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

Assistant Deputy Minister
Consumer Goods, Services and Resource Processing

Date: 29.4.86

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

April 21, 1986

FACT SHEET

NAME OF SECTOR: Aluminum Smelting **SIC(s) COVERED:** 2951 *

1. PRINCIPAL STATISTICS

	1971	1980	1981	1982	1983	1984	1985
Establishments	6	7	7	7	7	7	8
Employment*	N/A	N/A	14600	14100	13600	11500	N/A
Shipments ($ millions) *	509	1867	2021	1509	1803	2284	2010
(volume, '000 tonne)	1002	1068	1116	1065	1091	1231	1108
Gross Domestic Product ** (Constant 1971-$ millions)	507	568	567.8	488.3	540.5	606.7	N/A
Investment ($ millions)	300	869	862	1069	745	1114	1235
Profits After Tax ($ millions)***	N/A	393	264	30	133	183	(56)

* Estimated.
** Relates to total SIC 295 category (Smelting and Refining of Non-Ferrous Metals), not specifically aluminum.
*** Relates to total Canadian operations of Alcan and Reynolds for 1980-1983; for Alcan only, for 1984 and 1985.

2. TRADE STATISTICS

	1971	1980	1981	1982	1983	1984	1985
Export ($ millions)	425	1408	1315	1270	1530	1548	1636
Domestic Shipments ($ millions)	84	459	706	239	273	736	374
Imports ($ millions)	10	19	28	41	55	85	110
Canadian Market ($ millions)	94	478	734	280	328	821	484
Exports as % of Shipments	83	75	65	84	85	68	81
Imports as % of Domestic Market	11	4	4	15	17	10	23
Canadian Share of International Export Market %	N/A	18.6	17.4	19.5	17.6	17.6	N/A

Source of Imports - Percent	U.S.	E.E.C.	ASIA	OTHERS
1981	71.0	22.5	0	6.5
1982	85.5	10.2	0	4.3
1983	69.5	23.2	0	7.3
1984	59.0	31.5	0	9.5

Destination of Exports - Percent	U.S.	E.E.C.	ASIA	OTHERS
1981	70.8	.3	21.9	7.0
1982	51.9	1.4	42.9	3.8
1983	65.0	2.1	31.7	1.2
1984	75.3	3.0	19.9	1.8

3. REGIONAL DISTRIBUTION - Average over the last 3 years

	Atlantic	Québec	Ontario	Prairies	B.C.
Establishments - % of total	0	85.7	0	0	14.3
Employment - % of total	0	85.3	0	0	14.7
Shipments - % of total	0	78.3	0	0	21.7

4. MAJOR FIRMS

Name	Ownership	Main Plants
1. Alcan Smelters and Chemicals Ltd.	Canadian	Jonquière, Québec Alma, Québec Grande Baie, Québec Shawinigan, Québec Beauharnois, Québec Kitimat, B.C.
2. Canadian Reynolds Metals Co. Ltd.	American	Baie Comeau, Québec
3. Aluminerie de Bécancour Inc. (ABI)	50.1% French 24.95% U.S./Japan 24.95% Canadian	Bécancour, Québec (expected operation May 1986)

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COMPETITIVENESS PROFILE

AUTO PARTS

1. Structure and Performance

Structure:

The automotive parts sector is covered under SIC 325. The sector has an annual output of over $10 billion, 80 per cent of which is exported, mainly to the United States. The balance plus imports supports the Canadian vehicle market which is the seventh largest in the world. The vehicle assembly and auto parts industry is a key linkage sector which consumes around one-sixth of Canada's iron and steel production, rubber products, and batteries. More than 14 per cent of processed aluminum, 13 per cent of processed copper and 8 per cent of glass and paint go into the assembly and parts industry.

The sector employs around 60,000 people. About 45 per cent of production is accounted for by the in-house operations of the vehicle manufacturers, 41 per cent by foreign-owned independents, and the remaining 13 per cent by several hundred small and medium-sized Canadian-owned, independent parts producers. The sector is traditionally divided into original equipment and aftermarket producers. The latter grouping accounts for about 15 per cent of total production and employs about 10,000 people. About 80 per cent of original equipment producers are located in Ontario, 10 per cent in Quebec, and the rest largely in Western Canada. Aftermarket producers tend to be more regionally dispersed and often serve local markets.

In terms of Canada-U.S. trade, Canada has suffered a chronic deficit in parts for essentially three reasons. First our relative reliance on assembly within a rationalized structure results in major imports of parts for those assembly plants; second, there has been relative underinvestment in Canada in in-house facilities by the assemblers; and third, the aftermarket sector is small and inefficient, despite a significant tariff and is subject to major import competition and relatively poor export performance. It should also be noted that most of the parts imported are re-exported in finished vehicles.

Canadian parts suppliers face the same international competitiveness factors as the vehicle assemblers. Japanese and European parts makers are increasing sales in the North American market by direct sales and by investing in facilities in the U.S. and Canada. Parts makers from low cost producing countries such as Mexico, Brazil, Spain and Korea are also successfully penetrating the Canadian market. At the same time, the Canadian assemblers are increasing their offshore sourcing, in their efforts to reduce costs.

Performance:

Preliminary Statistics Canada data indicate that parts production in Canada increased for the fifth consecutive year during 1985 to reach an estimated $11.3 billion. This constituted an 11 per cent increase over 1984 production levels. These parts production increases over the past several years have been due to the higher vehicle production levels attained by the U.S. and Canadian assembly industries, the high value of the U.S. dollar versus the Canadian and continuing productivity improvements in the industry. Financial statistics on the autoparts sector as a whole are not available although it appears that profitability and other financial indicators have improved from the recession levels of 1980-81. Overall capital investment in the Canadian automative parts sector in 1985 is estimated to reach $322 million - up from $181 million in 1984.

2. Strengths and Weaknesses

Structural:

The independent parts producers in Canada have closely geared their production to the needs of the major North American vehicle manufacturers which until recently have largely sourced their parts needs from firms in North America. They are reliant to a great extent on sourcing contracts on a "make to drawing" basis and on access to the centralized purchasing structure of the car manufacturers. The branch plant parts producers tend to be second sources for identical products currently being produced elsewhere in the corporation. Those independent and multi-national parts firms that design and develop components have until recently benefited from, and perhaps become overly dependent on, the relative stability of automotive technology, particularly in North America.

This situation is changing, and in the future success will depend increasingly on product development capability. Major assemblers are moving to consolidate their supply base by single-sourcing. Longer term commitments are offered to those companies that adapt to the "target costing" parts design concept. Future success for suppliers will require increased capital investment in technology, computer assisted manufacturing, flexible production processes and quality control to meet the market demands for sophisticated product design, high quality, low cost, and "just-in-time" delivery. While many companies are adjusting to this new environment, small Canadian-owned firms in particular will be hard pressed to adapt to new market requirements that demand sophisticated managerial, entrepreneurship, technical and financial skills. The leading Canadian parts firms have healthy balance sheets and can invest in R&D. However, a large number of the smaller parts firms have limited financial resources to dedicate to R&D.

Recent and future design developments that will require more complex, higher priced replacement components, and a sharp increase in the use of electrical and electronic equipment will significantly increase the global automotive aftermarket in the 1990's. Canadian firms specializing in the aftermarket will have difficulty taking advantage of these opportunities because of stiff competition from major OE producers and the relatively low production of technologically sophisticated aftermarket parts in Canada. These firms will have to increase their technological capabilities either through increased investment in R&D or joint ventures and technology exchange agreements with leading international parts producers.

Offsetting some of these structural weaknesses are opportunities for Canadian parts makers to supply existing assembly plants and new ones coming on stream on a "just in time" inventory basis. The stronger Canadian OE parts manufacturers in the Southwestern Ontario belt have good prospects of competing with U.S. parts companies with respect to the "just-in-time" delivery factor. There are growth prospects for high technology automotive components, particularly in the electronics area, and parts such as body stampings and seat assemblies which are expensive to transport. For this reason, investment promotion efforts are focussing on areas such as modular assemblies, electronics, air conditioner systems and transmissions.

Trade Related Factors:

Original Equipment (OE) parts can be imported duty-free into Canada from anywhere in the world under the Auto Pact by the APTA producers. Unless they eventually achieve Auto Pact status, the Japanese and Korean companies with projected Canadian assembly facilities will pay the tariff on imported/OE parts (Honda, Toyota, Hyundai). Parts imported outside the Auto Pact are mostly aftermarket parts subject to a 9.9 per cent tariff in 1986, declining to 9.2 per cent in 1987 and remaining at that level unless changed by the next MTN round. A limited number of AM parts are exceptions to this tariff and have lower duty rates ranging from zero in certain cases up to 9.2 per cent. Since after-market parts are excluded from the Auto Pact, this sub-sector has not experienced the same degree of rationalization as the OE parts sector.

A number of countries. such as Mexico, Korea, etc. have fairly sophisticated automotive industries and are beginning to export significant quantities of parts to North America. At the same time their markets are largely closed to Canadian products due to domestic content regimes, other NTB's and high tariffs.

Effective May 24, 1985, the Customs Tariff was amended to replace the free General Preferential Tariff rate on motor vehicle parts from developing countries to two-thirds of the Most-Favoured-Nation (MFN) rate (i.e. seven per cent). As of January 1, 1987, automobiles and other motor vehicles from developing countries will also be subject to two-thirds of the MFN rate, which will be six per cent at that time as the result of reductions in rates stemming from the Tokyo Round Multinational Trade Negotiations.

Technological Factors:

Factors determining competitive success in the North American environment have shifted significantly in the last decade. The assemblers now demand more R&D and development work from their parts suppliers, just-in-time delivery and higher quality at lower cost. Today, improved product quality, the pursuit of productivity through new manufacturing systems and technological innovation are the principal competitive factors in the auto parts industry.

The requirement for technological advance is being felt by the parts sector. Radical changes intended to improve productivity are underway. These have taken a number of forms including the institution of just-in-time production to eliminate most inventory, the reorganization of work practices to minimize downtime and automation to improve quality and reduce the labour content of production. Other initiatives which parts companies must invest in are statistical process control and CAD/CAM systems.

The offshore manufacturers establishing new assembly plants in Canada require different and often more advanced product and process technologies from their parts suppliers. Canadian parts manufacturers will have to continue investing in new technologies on their own and through joint ventures and technology exchanges with European and Japanese parts producers. This will be particularly important to overcome the financial constraints of a significant number of smaller parts companies.

3. Federal and Provincial Programs and Policies

The fundamental policy instrument that affects OE parts is the Auto Pact. In addition, the government has encouraged the industry to capitalize on areas of strength by identifying and exploiting export and import replacement opportunities. Financial assistance is available in less developed regions of the country for automotive plant location under the Industrial and Regional Development Program. The Federal Government has provided assistance to AM parts producers under the PEMD program.

The Ontario Government has in place a fund, administered under the BILD Program, to support modernization projects in the parts sector. Some $21 million of this fund has been committed to date and additional funds will likely be added to the initial $30 million budget in the near future.

4. Evolving Environment

The Big Three North American automakers have committed themselves to drastic changes in technology, product design, and management. These changes will alter substantially the relationship between vehicle manufacturers and component suppliers. The changes will mean more outside sourcing, longer contracts but less multiple sourcing, higher quality and reliability requirements, more stringent inventory control and centralized purchasing for "make to drawing" suppliers. In addition, "draw and make" suppliers will be faced with shorter engineering lead time and, therefore, higher risk and development cost. It is difficult to compare the cost of

labour on Canadian versus U.S. parts plants due to the large variance in size and union/non-union situations. In the case of the parts sector, it appears that Canada has a labor cost advantage, given a Canadian dollar in the range of 70 to 80 cents vis-a-vis the U.S. dollar. On the other hand, Canadian auto parts producers will be facing increasingly stiff competition from low cost countries such as Spain, Brazil, Mexico, and Korea which have taken impressive steps to encourage their automotive sectors and are beginning to broaden their product range and increase their penetration of the Canadian and American markets.

The trend to just-in-time delivery should provide more opportunities for Canadian parts producers to supply existing and new Canadian assembly plants. Recent major investments in new or modernized assembly facilities by General Motors, American Motors, Honda, Toyota and Hyundai will stimulate parts production. However, Canadian parts manufacturers must also bear in mind the market uncertainties and opportunities associated with possible surplus capacity in North America and increasing production from new assembly plants by offshore manufacturers. In effect, the parts makers should be focussing their efforts in products which will be in demand from the more modern assembly plants most likely to survive any capacity reductions.

Canadian parts manufacturers will have to pursue opportunities with the new offshore assemblers establishing plants in Canada and adopt their process technologies accordingly. This will be essential in the slow growth environment projected in the vehicle market through the 1990s and the increasing percentage of North American production coming from offshore manufacturers investing in new assembly plants. In many cases, Canadian parts manufacturers will have to form joint ventures with domestic or offshore parts companies in order to pool resources.

The investment challenge for the Canadian parts sector is twofold. First, domestic parts producers must modernize and develop leading edge technology and product capabilities either on their own or through joint ventures or technology exchanges with foreign and domestic companies. Second, parts suppliers must continue to pursue opportunities associated with new assembly facilities in Canada (e.g. AMC/Renault, Honda, Toyota, Hyundai), and pursue leading international high technology parts makers in general. In all cases, increased parts investment must be market driven concentrating in product and technology areas as demanded by North American assemblers. The key element in increasing productivity and competitiveness in the autoparts sector will be investment, either through internal resources or through joint ventures, technology exchanges and other forms of cooperation with leading foreign and domestic parts companies.

In terms of specific products, investment is required in areas of high technology with good long term market potential which are complementary to existing capabilities. In order to serve the assemblers' new more stringent design and delivery requirements, existing and new parts producers will have to improve their technology and design capabilities in product areas of high demand. Promising areas for parts investment include: modular assemblies, electronics, air conditioner systems and transmissions.

The recent decision by the Canadian U.A.W. to sever relations with the U.S. union could have an effect on the sourcing patterns of U.S. vehicle manufacturers as they attempt to alleviate the risk of dependence on Canadian sources which could halt U.S. production in the event of a Canadian strike.

5. Competitive Assessment

The Canadian parts sector has been almost totally dependent on the North American assemblers for business. Overall parts demand from these assemblers will likely decline as they are losing market share, increasing offshore sourcing and may be forced to shed significant excess capacity by the early 1990's. The North American assemblers are also demanding increased R&D, design and technological capabilities from their parts suppliers, areas where the Canadian parts sector is weak with the exception of a limited number of strong companies.

In terms of production volume, the majority of Asian assembly investment has gone to the U.S. as has virtually all Japanese components investment to date. The initial objective of the Japanese assemblers in the U.S. is to achieve 50 per cent U.S. parts content. Canadian parts companies have not been successful selling to Japanese assembly plants in the U.S. They face stiff competition in terms of location and technology from new Japanese parts plants in the U.S. and established American parts companies which are closer to the new U.S. assembly plants. In comparison to the U.S., the new Asian assembly investments in Canada are much smaller. Therefore, the costs of entry are higher for Canadian parts manufacturers as they must incur similar new product development costs but initially sell smaller quantities to the Canadian assembly plants as a proving ground for future sales in the U.S.

The advantages of "just-in-time" delivery for Central Canadian parts suppliers will also diminish in importance to the extent that new Japanese assembly plants are in the "sun-belt" states and U.S. assemblers gradually shift their plants in this direction (e.g. GM Saturn and Nissan plants in Tennessee).

In general, under a status-quo scenario in terms of technology, capital, R&D and design capabilities, the competitive position of the Canadian parts sector is likely to decline to a certain extent. There are a number of areas which will have to be addressed by the Canadian parts industry in order to maintain or improve its competitiveness in light of developments listed above.

For example, the competitiveness of the in-house parts facilities of the Big Four will have to be maintained by ensuring the introduction of new products and the continuing improvement in process technology. Otherwise it is likely that production from these plants will decline as the Big Four rationalize parts production and increase outsourcing.

In the case of the small aftermarket and original equipment parts producers, product specialization and/or market diversification will be required. Many companies cannot maintain a high degree of on-going investment and will either go out of business or merge. To overcome this, participation of foreign automotive parts producers in the Canadian OE industry through direct investment or joint ventures will present opportunities for domestic suppliers to acquire new product and process technology. Some success already has been achieved in this area which is one way of overcoming the constraint of limited financial resources of a significant number of smaller parts companies.

There are at least a dozen larger Canadian owned parts companies and MNE's in Canada which have adapted, are increasing technological capabilities and have increased their market share. It is anticipated that these companies will continue to prosper and grow.

To summarize, the Canadian industry will need to significantly increase its participation in the nascent internationalization of the auto parts sector if it is not to be left out of the technically advanced rapidly changing and highly competitive industry of the future. Otherwise, there is a danger of being relegated largely to low value, less sophisticated componentry geared to "just-in-time" requirements. More attention will need to be paid to maintaining investment and technology improvement at in-house parts facilities; increasing technology transfer and joint ventures involving smaller parts firms; and increasing direct foreign investment in high technology areas.

Prepared by: Automotive, Marine and Rail Date: February, 1986

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FACT SHEET

NAME OF SECTOR: AUTOMOTIVE PARTS **SIC(s) COVERED*:** 325

1. PRINCIPAL STATISTICS

	1980	1981	1982	1983	1984	1985****
*Establishments	950	1,000	1,100	1,200	N/A	N/A
***Employment (000)	47.3	51.9	47.4	55.2	56.9	60.2
**Shipments ($ millions)	4,034.2	4,879.3	5,059.7	7,673.9	10,231	11,347.8
***Gross Domestic Product (1971 dollars)	674.7	742.8	743.8	1,022.8	1,305.8	N/A
***Investment ($ millions)	781.0	666.0	189.0	141.0	181.0	N/A
Profits after tax	N/A	N/A	N/A	N/A	N/A	N/A
**Exports ($ millions)	3,825.0	4,707.0	5,306.0	7,310.0	10,567	10,360
**Imports ($ millions)	7,955.0	9,572.0	10,055.0	11,971.0	16,774	16,080
Canadian Market ($ millions)	8,164.2	9,744.3	9608.7	11,528.0	16,408	-
Exports - % of shipments	94.8	96.4	108.8	95.3	103.3	108.6
Imports - % of domestic market	97.4	98.2	95.5	74.0	102.2	-

*DRIE Estimates **Automotive Task Force Report ***Statistics Canada

****1985 Statistics - Shipments preliminary 12 months, Exports & Imports 10 months only.

2. REGIONAL DISTRIBUTION - Average over the last 3 years

	Atlantic	Québec	Ontario	Prairies	B.C.
Establishments - % of total	2	10	80	3	5
*Employment - % of total	1	5	89	2	3
*Shipments - % of total	2	10	80	3	5

*DRIE estimate

3. MAJOR FIRMS

Name	Ownership	Location of Major Plants
1. Magna	Canadian	Toronto
2. Allied Canada (Bendix)	U.S.	Collingwood, London
3. TRW	U.S.	St. Catharines
4. Hayes-Dana	U.S.	St. Catharines
5. BUDD	U.S.	Kitchener
6. Waterville Cellular	Canadian	Waterville, Que.
7. A.G. Simpson	Canadian	Scarborough
8. CAE Industries	Canadian	St. Catharines
9. TRIDON International	Canadian	Burlington

4. FEDERAL AND PROVINCIAL GOVERNMENT PROGRAMS

Program	Type	Amount	Purpose
IRDP	R&D and Capital		
DIPP	Defence		
BILD (Ont.)	Repayable Loan	$30 million	Update facilities

5. MAJOR REPORTS AVAILABLE

Name	Type of Report	Year
An Automotive Strategy for Canada	Federal Task Force	1983
1983 Report on Cdn. Auto Industry	Federal	1984
1984 Report on Cdn. Auto Industry	Federal	1985
Directory of Cdn. Parts Manufacturers	Federal	1985

* Use the 1980 SIC classification.

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

DRAFT

COMPETITIVENESS PROFILE

MOTOR VEHICLES

1. Structure and Performance

Structure:

The motor vehicle sector includes establishments engaged in the assembly of cars and trucks. The industry, identified as SIC 323 - Motor Vehicle Manufacturers - includes passenger cars, station wagons, mini-vans, vans, pick-up trucks, and heavy duty trucks as the major products assembled in Canada. The car and light truck manufacturers are foreign-owned and concentrated in Ontario and Quebec. GM and Ford account for 97 per cent of car production, while GM, Ford and Chrysler (the Big Three) account for 98 per cent of truck production by value. (The Chrysler mini-van is included in the truck category.) In addition, there are five small manufacturers involved in the production of heavy duty trucks, with plants in British Columbia, Ontario and Quebec. Four are foreign-owned.

The automotive sector, including both vehicle assemblers and parts manufacturers, is the largest manufacturing sector in Canada, accounting for nearly 15 per cent of manufacturing shipments, 60 per cent of all manufactured exports and 7 per cent of manufacturing employment. Assembly accounts for $26 billion of the $37 billion in shipments by the Canadian industry. Employment in vehicle assembly in 1985 was 50,300. Canada is the sixth largest assembler of cars and trucks in the world.

Downstream marketing of finished vehicles is controlled through related distributors and retail dealers. A number of upstream industries deliver a significant share of their output to the automotive sector. They include iron and steel manufacturers, iron foundries, wire products, metal fabricators, rubber and plastic fabricators, textiles, aluminum rolling and extruding, glass and chemical producers.

All but a small fraction of Canada-U.S. automotive trade is governed by the terms of the Auto Pact. Under its terms, Canadian vehicle manufacturers are allowed to import vehicles and original equipment (OE) parts duty-free by meeting the following conditions:

a) The value of vehicles produced in Canada must meet or exceed a specified percentage of the manufacturer's annual corporate sales in Canada. The value of production must be at least 95 to 100 per cent of the value of corporate sales in Canada for cars, and at least 75 to 100 per cent for trucks.

b) Assemblers must achieve at least the nominal dollar amount of Canadian value-added (CVA) in assembly activity reached in 1964.

In addition to the foregoing, assemblers agreed to increase CVA in vehicle assembly and/or parts production by 60 per cent of the annual growth of the value of Canadian retail sales of cars, and by 50 per cent of the growth in retail sales of trucks. This undertaking is outlined in individual corporate Letters of Undertaking.

The industry has exceeded these requirements by a substantial margin for the most part. Over the past ten years the average ratio for cars was 143 per cent and for trucks was 130 per cent, while the growth CVA averaged 72 per cent in the same period. However, there have been a few cases where companies have failed to meet either their legal ratio requirements or their CVA undertakings.

Vehicles and OE parts manufactured in Canada receive duty-free entry to the U.S. provided they have at least 50 per cent North American content. Automakers established in Canada after 1964 are eligible to receive Auto Pact status under special Orders-in-Council upon meeting a specified production to sales ratio and CVA level. The new investors - Toyota, Honda and Hyundai - have all indicated publicly that they plan to achieve Auto Pact status.

The high level of integration as a result of the Auto Pact has stimulated extensive trade in both parts and vehicles ($55 billion in 1985). Some 85 per cent of Canadian vehicle production is exported to the U.S. and all vehicle shipments between Canada and the U.S. have been covered under the terms of the Auto Pact. As a result, Canadian production levels depend critically on total North American car and truck sales, and in particular on the North American demand for those models produced in Canada. In 1985, Canada accounted for 11.6 per cent of North American passenger car production, and 19.9 per cent of truck production.

Performance:

In the 1979-1983 period, major changes were made in the product and production process in most of the Canadian car assembly facilities. Investment by the Big Three in assembly facilities in Canada averaged approximately $270 million annually in the 1980's, about triple the average annual expenditures for the previous five years. The planning and the actual expenditures came at a time when the industry was facing severe financial losses due to a major decline in the market coupled with increasingly stiff competition from offshore producers, mainly the Japanese. Production dropped to 1.23 million units in the recession of 1982 compared to the previous high of 1.82 million vehicles in 1978 and rebounded to a record level of 1.93 million units in 1985.

During the recession of 1980-82, the North American industry lowered its breakeven point in terms of units produced by 25 per cent and, as the recovery continued, profits reached record levels following substantial losses in the early years of the decade. This recovery is largely in response to a quickly rebounding U.S. market and, within that market, the high demand for the larger cars that Canada has traditionally produced and for the Chrysler mini-van. A key element that contributed to the improvement in this sector was the negotiation by Canada and the U.S. of Voluntary Export Restraints (VER's) on automotive exports from Japan, in effect since 1981, that checked their penetration of the North American market.

During the recovery, the Canadian industry fared comparatively better than its U.S. counterpart. For example, Canadian employment in all segments of the automotive industry stood at a record high of 132,000 workers in 1985, up substantially from the recessionary low of 99,000 and exceeding the previous peak in 1979 of 125,000. In comparison, only 200,000 of the 300,000 jobs lost in the U.S. have been recovered.

Canadian automobile sales increased 16 per cent from 971,000 units in 1984 to more than 1,130,000 units in 1985. However, off-shore import penetration was up nearly five percentage points to 29.3 per cent, although the Japanese market share remained constant at just under 18 per cent as a result of the export understanding with the Japanese Government. Imports of Korean cars increased to 7.7 per cent of the market and Hyundai became the largest imported marque by a wide margin. Sales of commercial vehicles also increased, rising 28 per cent from 312,000 units in 1984 to nearly 400,000 in 1985. The import share of the Canadian truck market (mainly Japanese light pickups) was down slightly to 13.2 per cent.

In terms of value, Canadian shipments of cars and trucks reached $26 billion in 1985, while imports and exports increased to $13.9 billion and $22.1 billion respectively. The trade surplus with the U.S. for motor vehicles for 1985 was $10.9 billion, up about 10 per cent over the 1984 level. Although the balance of trade for vehicles has traditionally been positive, its strength in recent years has been great enough to offset the chronic parts deficit so that Canada has run large automotive surpluses over the past four years with the U.S. On the other hand, the annual Canadian deficit in motor vehicles trade with Japan is rapidly increasing and now stands at $1.7 billion. The Canadian vehicle trade deficit with Europe reached $1.0 billion in 1985.

2. Strengths and Weaknesses

a) Structural

The Auto Pact has significantly influenced the structure of the Canadian motor vehicle industry. The Big Three's operations are integrated across North America, allowing Canadian parts and assembly plants to specialize in more limited product lines to exploit economies of scale. Although the firms have been able to benefit from this rationalization in the North American context, they have become less competitive against foreign suppliers.

The recovery of the Canadian and U.S. industry masks a continuing fundamental structural weakness, namely a production cost gap vis-à-vis Japan that is still estimated at up to $1,500 per vehicle for both small and medium sized cars. The Japanese car also continues to be noted as a high quality product. The massive investments in recent years by American companies should help in narrowing this cost gap and improve product quality. However, Japanese companies have remained very profitable throughout the last four years and have also invested to reduce their costs and improve their products. In addition, other low-cost competitors from Korea, Mexico, Brazil and Taiwan are entering the market, further increasing import pressures.

The recent appreciation of the yen against the U.S. and Canadian dollars is expected to continue well into 1986, although analysts believe that the current rate of 180 yen to the U.S. dollar will be sustained for a period of time. The 30 per cent change in the value of the yen over the past year has narrowed the production cost gap by as much as $500 per car.

Canadian assembly facilities for cars and light trucks compare favourably with American plants with respect to workplace organization, production costs, productivity and technology. The current Canadian hourly labour cost advantage in assembly plants is about $7 (U.S.).

In Canada and much of the U.S., the industry is highly unionized and the workers have historically been represented by a single international union, the United Auto Workers (U.A.W.). In 1985, the Canadian U.A.W. became independent and is adopting a different approach from its U.S. counterpart on such issues as job flexibility and profit-related pay, both of which are central to the assemblers' efforts to match Japanese competition.

It is too early to tell what effect this split will have on the ability of Canadian plants to compete. The first test of the impact of the U.A.W. split was successfully passed in the third quarter of 1985 when the Canadian union was able to settle a short strike a few days before the American settlement with Chrysler. The next test will come when the industry renews its labour contracts in the latter part of 1987.

In the heavy duty truck sub-sector which accounts for two per cent of truck shipments, the same degree of rationalization has not taken place as in car assembly. The five plants are smaller-scale. Vertical integration is low and most of the components are imported from the United States. The downturn in the economy and deregulation in the United States in the early 1980's severely depressed demand for heavy duty trucks. Excess capacity still exists in the Canadian sector.

b) Trade Related Factors

From March 1981 through to March 1985, Japan restrained exports of automobiles to Canada under a formal arrangement. For fiscal year 1985/86, a less formal "understanding" was arrived at in which it was understood that Japanese exports would be about 18 per cent of the Canadian market (about 200,000 cars).

The Japanese Government adopted a formal agreement with the U.S. Government in 1981 as well. After March 1985, the U.S. authorities did not seek any formal extension nor any other arrangement to limit Japanese exports to the U.S., although the Japanese Government unilaterally imposed export restraints for fiscal year 1985/86 as a "transitional, temporary, and exceptional step towards free trade". The Japanese increased the level of exports in 1985 by 24 per cent to 2.3 million units or approximately 21 per cent of the U.S. market. About 40 per cent of the increase was dedicated to captive imports sold through the Big Three under their brand names. This unilateral restraint is being continued in fiscal year 1986/87 at the same level. As a result, pressure for unilateral action by the U.S. on autos has lessened, and broader measures are not considered likely.

Imports from Korea are at high levels and still growing. These imports from Korea and other new entrants have remained unrestrained, an issue of extreme sensitivity to both the Japanese and the domestic industries.

With regard to tariffs, vehicles which do not fall under the Auto Pact enter Canada at 9.9 per cent duty rate, declining to 9.2 per cent on January 1, 1987 under the General Agreement on Tariffs and Trade. Vehicles from developing countries (e.g. Korea) currently enter Canada duty-free under the General Preferential Tariff, but this will increase to six per cent on January 1, 1987 as a result of provisions in the May, 1985 budget.

c) Technological Factors

Virtually no R&D is done in Canada, although Canadian plants enjoy access to the technology of their parents. Changes intended to improve productivity are underway. These include just-in-time production to eliminate most inventory, re-organization of work practices to minimize downtime, and automation to improve quality and productivity. The assemblers are also requiring more R&D work be undertaken by their major parts suppliers.

With respect to technology improvements, several Canadian operations have been upgraded over the past few years. However, major management decisions with respect to investment and plant improvements in Canada are made by the U.S. parents. These decisions may not always be based entirely on economic factors.

Consumer preferences changed and North American demand moved rapidly from the typical North American large car to imported sub-compacts following the oil price shocks in the 1970's. The imported vehicles, in addition to meeting the fuel efficiency needs of consumers, were of better quality and lower cost than comparable North American vehicles. In addition, the Japanese are moving to a three to four year cycle for major model changes, (compared to five to seven years in North America and up to 10 years in Europe), allowing for quicker introduction of new technology and quicker reaction to changing consumer preferences.

In light truck assembly, the Big Three plants producing vans and pick-up trucks are on a par technologically with plants in the U.S. However, at least four of the five Canadian operations producing heavy trucks are substantially behind technologically.

3. Federal Programs and Policies

The main Canadian automotive policy is the 1965 Canada-U.S. Automotive Products Trade Agreement (Auto Pact) which permits qualified Canadian vehicle manufacturers to import original equipment parts and vehicles duty-free from the U.S. and other countries. The government also uses duty remission to encourage non-Auto Pact vehicle manufacturers to source parts and manufacture vehicles in Canada.

The main Canadian trade policy affecting this industry is the series of one year agreements and understandings with the Japanese Government which have restrainted exports of Japanese automobiles since 1981.

4. Evolving Environment

The evolving environment is described on a total North American basis, as the Canadian industry is fully integrated with the American industry and highly dependent on actions taken in the U.S. by the major players.

Market growth in each of the major automotive countries will be slow, compounding the adjustment difficulties experienced by the major world producers. The North American automobile market is expected to grow by only 1 to 2 per cent per year for the rest of the decade. Assuming that existing trade policies in Canada and the U.S. do not change dramatically, automobile imports from all sources into North America are expected to grow from about 2.7 million in 1984 to about 3.9 million units in 1990, or 30 per cent of the total market. The Big Three plan to import up to half of the 1.2 million extra units in an attempt to satisfy their own small car requirements from the production of captive Asian exporters.

In response to the competitive challenge, American firms are continuing to make massive capital investments to introduce new product lines, improve manufacturing quality, and substantially reduce manufacturing costs. These capital expenditures averaged $550 million annually in Canada for the 1980's, while averaging $4.9 billion annually in the U.S. for the same period. This pace will continue through the last half of the decade as AMC is spending $760 million on a state-of-the-art assembly project, and GM is spending over $1.2 billion to retool, modernize and expand existing facilities and add new ones in Canada. Another $2 billion will be spent by GM to begin production of the GM-10 car (a new intermediate) in its Oshawa plants. Chrysler and Ford will also spend significant amounts to upgrade and modernize aspects of their Canadian facilities.

Another major response is in the form of a number of joint ventures in North America between the U.S. and Japanese car companies. General Motors and Toyota in California (NUMMI), Chrysler and Mitsubishi in Illinois, and Ford and Mazda in Michigan are specific joint ventures in assembly facilities which, along with the proposed GM-Suzuki project in Canada, will allow American firms to gain experience in Japanese production and management techniques.

At the same time, the Big Three are accelerating the proportion of automotive parts sourced outside Canada and the United States, and the level is expected to reach 10 per cent in terms of value by 1988 as they pursue lower production costs overseas in order to remain competitive.

Since 1982, the Japanese have invested heavily in assembly facilities in North America in order to circumvent the restraint program and to minimize the potential damage from any future trade limitations arising from the general protectionist environment. Toyota, Nissan, Mitsubishi, Honda and Mazda have either invested or announced assembly plants valued at $3.5 billion in the U.S., while Honda and Toyota plan to invest $500 million in Canada. The proposed GM-Suzuki project would add a further $600 million in direct investment in Canada. In addition, Hyundai is investing $300 million in an assembly plant in Quebec after only two years in the Canadian market. In total, these projects by Japanese and Korean automakers will result in new capacity in North America of 1.7 million units annually. Canada is gaining somewhat more than a proportionate share of the new capacity (480 thousand units) which, until recently, had been largely going to the U.S. Without such investment in Canada, Japanese companies could have imported vehicles from their new U.S. plants and increased market share without contributing to the Canadian economy.

The import pressure, combined with slow market growth and substantial incremental Asian assembly investment in North America, will result in an extremely competitive market situation toward the end of the 1980s. As the Japanese have been able to retain a cost advantage in their North American plants as well, it is expected that the traditional Canadian and American manufacturers will suffer a substantial decline in market and production levels, resulting in over-capacity and employment losses.

This over-capacity will place the equivalent of up to ten full-size North American assembly facilities in serious jeopardy and cause a substantial drop in shipments from the North American parts manufacturers. The U.S. Department of Commerce estimates that job losses of up to 150,000 workers could occur in the American vehicle assembly and supplier industries. It is expected that only 18,000 new jobs will be created at the new Japanese assembly plants in the U.S. because of lower North American value added and different work practices.

It is estimated that 15,000 jobs would be lost overall in Canada, of which 6,000 would be from the vehicle assembly sector. This would be offset in part by the addition of 2,900 jobs in the new Asian assembly plants (6,000 if the GM-Suzuki project proceeds).

The 1986 Report of the Automotive Industries Human Resource Task Force is in agreement with the above analysis. Three different scenarios were analyzed to provide estimates of possible Canadian production and employment changes in the combined Canadian assembly and parts industry. It estimates losses of 40,000 jobs under an "import flood" scenario and 10,000 jobs under a general continuation of existing policies, with a forecast increase of 20,000 jobs under a protectionist scenario.

5. Competitiveness Assessment

Despite their major investments, North American producers still have a long way to go before gaining the capability to manufacture a competitive, low cost car. The Big Three's requirements for such cars are being increasingly met by captive imports and production from joint ventures.

Canada and the U.S. remain vulnerable to competitive pressures to some degree in all aspects of the market, especially at the low end from Japanese and emerging low-cost offshore producers such as Korea, and at the high end from Europe. Increasing pressure is coming to bear on the intermediate cost segment of the market that has been the traditional strength of the North American producers as the Japanese move upmarket with new and more expensive models. Canada's car production is currently largely geared to midsize and large cars and mini-vans. It is somewhat shielded from the competitive pressure in the low end of the car market. However, certain assembly plants in Canada could be vulnerable when pitted against plants in the U.S.

The Canadian plants of the U.S. based heavy truck manufacturers are less efficient and productive than their sister plants in the U.S. and other truck plants around the world. The five Canadian Class 8 truck plants were established when tariffs were high and they have continued to be operated due to the duty benefits received from operating under the Auto Pact.

Prepared by: Automotive, Marine & Rail Branch
Department of Regional Industrial Expansion

Date: 11 April 1986

J M Bougie

ADM

FACT SHEET

NAME OF SECTOR: MOTOR VEHICLES **SIC(s) COVERED:** 323 (1980 basis)

1. PRINCIPAL STATISTICS

	1980	1981	1982	1983	1984	1985
Establishments	21	21	21	21	21	--
Employment	43,900	44,267	42,168	44,400	49,500	50,300
Shipments ($ millions)	10,071	11,402	12,343	15,590	22,474	26,012
Gross Domestic Product (Constant 1971 $ millions)	1,397	1,339	1,261	1,528	1,884	--
Investment ($ millions)	136	273	203	463	273	--
Profits after tax (4 major assemblers)	(217)	(168)	(184)	946	1,609	1,051

2. TRADE STATISTICS

Exports ($ millions)	7,304	8,943	11,556	13,691	19,311	22,111
Domestic Shipments ($ millions)	2,767	2,919	1,659	2,516	--	--
Imports ($ millions)	5,764	6,656	5,161	7,641	10,300	13,916
Canadian Market ($ millions)	11,379	11,918	9,824	12,196	15,680	--
Exports - % of shipments	72.5	78.4	93.6	87.8	85.9	85.0
Imports - % of domestic market	50.7	55.8	52.5	62.7	65.7	--

Source of Imports (1985)

U.S	78.7%
Japan	12.3%
FRG	3.3%
Korea	1.8%

Destination of Exports (1985)

U.S.	98.8%
All Others	1.2%

3. REGIONAL DISTRIBUTION - Average over the last 3 years

	Atlantic	Québec	Ontario	Prairies	B.C.
Establishments - % of total	4.8	23.8	52.4	4.8	14.3
*Employment - % of total	.8	8.8	88.7	.7	1
*Shipments - % of total	1.0	10.4	86.6	.8	1.2

*DRIE estimate

4. MAJOR FIRMS

Name	Ownership	Location of Major Plant
1. General Motors of Canada Ltd.	U.S.	Oshawa
2. Ford Motor Company of Canada Ltd.	U.S.	Oakville
3. Chrysler Canada	U.S.	Windsor
4. American Motors (Canada) Inc.	U.S./France	Brampton

DRAFT

COMPETITIVENESS PROFILE

AUTOMOTIVE TIRES AND TUBES

1. Structure and Performance

Structure:

Automotive tires and tubes (not including bicycle tires and tubes) are covered under SIC Code 1511. Canadian retail sales in 1984 totalled approximately $2 billion. Imports in that year were $552 million and exports were $622 million, yielding net exports of $70 million.

This sector is comprised of eight companies producing over 20 million tires per year in 13 plants. One additional plant is dedicated to tube production. Employment is just over 14,000, with 26 per cent in Nova Scotia, 21 per cent in Quebec, 52 per cent in Ontario, and one per cent in Alberta. With the exception of the two smallest producers, United and Trent, the industry is foreign-owned. Michelin and Trent Rubber plants are non-union while the balance are represented by either the United Rubber Workers or the Confederation of National Trade Unions or independently affiliated unions.

The tire industry in Canada developed under the protection of a substantial tariff barrier (17.5 per cent in 1979, declining to 10.2 per cent in 1987). While the tariff was instrumental in the establishment of the industry decades ago, by encouraging producers to meet Canadian needs with Canadian made products, it has also resulted in reduced economies of scale and productivity. This is a critical weakness in an industry which is rapidly internationalizing, and where economies of scale are necessary to compete on a global basis. For example, a typical Canadian plant produces 13,500 passenger and truck tires per day, as contrasted to an American plant, which produces 49,500 similar tires per day. Canadian plants are generally small when compared to world scale plants.

Performance:

The tire industry operates in a mature, no growth market. With a rapidly intensifying shakeout in progress (Uniroyal and Goodrich have just announced they plan to merge their tire divisions), all producers are trying to maintain or improve market share. Therefore, the industry is very price competitive, and not particularly profitable. Industry average return on total assets (ROTA) has been in the vicinity of 3 to 5 per cent for the past 20 years. Corporate return on Canadian sales was less than 1 per cent in 1983 and only 1.24 per cent in 1984. In the U.S., the seven public tire companies (Goodyear, Firestone, General, Uniroyal, Goodrich, Cooper, and Armstrong) reported a 1983 aggregate profit of $609.5 million on sales of $21.9 billion or 2.78 per cent return on sales (ROS). For those with the installed plant capacity and a solid game plan, 1985 was a strong year with profits considerably improved. Others, however, found 1985 a difficult year. As in the automotive industry, large capital investments have been necessary over the past few years, causing the weaker companies to withdraw or become specialized in certain segments of the market. With the exception of $400 million investment made by Michelin, investment in Canada has been minimal.

The performance of the Canadian tire industry has followed recent trends of the car makers. From a high of 24 million tires (of all types) sold in Canada in 1977, the market fell to just over 17 million tires in 1981. Tire plants in Calgary (Firestone), Whitby (Firestone, formerly Dunlop), and Toronto (Seiberling/Goodyear) closed and others experienced serious difficulties. Due to the recession, production of original equipment

tires fell dramatically, as did truck and off-road tire production. Replacement passenger car tire production held up, however, as consumers tried to keep personal vehicles on the road longer. With the rebound of the car makers (and the economy) all sectors have picked up with the exception of the off-road mining and forestry sectors. Canadian production was over 24 million tires in 1983 and totalled almost 27 million in 1984.

2. Industry Strengths and Weaknesses

Structural:

Canadian tire firms enjoy the advantage of good quality labour and lower wage costs than in the U.S., due in part to exchange rates. Industry spokesmen have stated that the wage rate advantage will remain as long as the Canadian dollar remains at $0.85 U.S. or lower. The branch plant structure, however, leaves little autonomy in decision making, a pattern accentuated by computer communications with the parent plant. The Canadian plants tend to be smaller, older, and less vertically integrated than their American counterparts. They receive lower levels of investment and have less advanced technology. While oriented to world markets, they often specialize in product lines of declining popularity. The marked exception, Michelin, enjoys high productivity, economies of scale, and capital investment equal to U.S. levels.

The North American tire industry dwarfs the Canadian sector. In 1983, 17 per cent (32,722,500 tires) of the total U.S. domestic market was supplied by imports. In the same year, the entire Canadian industry manufactured just over 24,000,00 tires, or only 73 per cent of the U.S. import market alone. Globally, there is a overcapacity in most types of tire production and four tire plants closed in the U.S.A. in 1985.

Trade Related Factors:

While North America receives a considerable volume of imports from Japan, Korea, and Europe, about 80 per cent of tires used in North America are made in North America because of different standards and sizes. Nonetheless, because the strong U.S. and Canadian dollars attract imports from lower value currency countries, competition to satisfy this market from all the major world tire plants is strong and the import share of the market continues to grow. The strength of the Canadian dollar more than offsets the disadvantage of the current 10.8 per cent tariff on tires for those who import tires into Canada from other than U.S. plants. Notwithstanding the recent appreciation of the Yen in 1985, this continues to give considerable advantage to Japanese and European producers.

Because of its desire to maintain its closely guarded rubber to metal bonding processes (trade secrets), Michelin also installed a complete wire making facility which uses Canadian steel rod and copper as raw materials. All of the others purchase their belt and body wire from either their U.S. parent or on the open market from Bekeart of Belgium, Tokyo Rope of Japan, or National Standard of the U.S.

Tire manufacturers which use tire cord, steel (tire) wire (7.9 per cent), or mixed rubber masterbatch (10.8 per cent) are required to pay duty on imports of these items, under made in Canada provisions. A negligible tariff is levied on artifical rubber, while carbon black is not protected by tariff. Carbon black producers depend upon the tariff on tires to protect them from significant imports.

Technological Factors:

The tire industry in North America has passed through considerable technological change over the past 20 years as automotive standards shift from bias, to bias-belted, to radial, to low-profile, high mileage

radial tires. These changes required a massive amount of capital investment at a time of slim profit margins. In constant dollars, the cost of tires to consumers is as low as it ever has been and yet the quality is much better. The industry is very consumer price sensitive.

Worldwide, technology is evolving rapidly. Automated transfer lines, robotics, computer aided design, and computer assisted manufacturing are being implemented. A shakeout is in progress and industry observers speculate that within 10 years only three full-line producers will continue to exist; Bridgestone (Japanese), Michelin (French), and Goodyear (United States). The others are expected to either niche into selected market segments or disappear as significant tire makers.

In the longer term, for certain Canadian plants, it will soon prove uneconomic to make additional large investments (true of older tire plants throughout the world) and there will be plant closings. Bridgestone Tire of Japan is becoming more and more of a significant factor in the Canadian market scene. There are no Bridgestone manufacturing operations in Canada.

Historically, new tire manufacturing technologies have been introduced in the United States and, later, as the resulting product became accepted in Canada, the manufacturing technology was moved to Canada. Consequently, the machinery installed tended to be modified second or third hand machinery which U.S. plants had grown out of, and which was then adapted for Canadian use.

The clear exception to the preceeding is the Michelin tire complex in Nova Scotia. Michelin installed new state-of-the-art technology on a scale commensurate with its North American market share. Since the initial installations some 14 years ago, there have been several upgradings of these facilities.

3. Federal and Provincial Programs and Policies

Other than Transport Canada Safety Standards and Provincial Safety Regulations government policies do not have a direct impact on the industry. Tires are not included in the Canada/U.S. Auto Pact except indirectly if they are mounted on finished vehicles, and are currently protected by a 10.8 per cent tariff.

4. Evolving Environment

The lack of recent investment in Canada reflects the shortage of funds available for investment due to the poor financial performance of the industry in North America, and the even poorer financial performance of the Canadian subsidiaries. It is also a measure of the difficulty experienced by Canadian subsidiaries in gaining access to the corporate capital pool. Return on sales has been minimal both in Canada and the United States due to fierce competition resulting from a flat market growth as tire life is extended, and increased import and transplant competition from Sam Yang, Aurora, Bridgestone, Toyo and Sumitomo. Funds which have become available for investment have been concentrated in the Southern United States, largely to take advantage of low interest municipal bond financing and right to work laws. One major company has spent $2 billion (U.S.) since 1980 in this area and almost nothing in Canada. Given low rates of return necessary investment in the Canadian tire industry is unlikely to take place as a result of private sector initiative alone.

However, without new investment, the Canadian industry faces an uncertain future. Imports by other than North American based producers, primarily from Japan and Korea, have moved steadily from six per cent of market share in 1982 to nine per cent in 1984. Vulnerability to imports, both from American parent companies and abroad, will increase as trade liberalization proceeds, either through bilateral negotiations with the United States, or reductions in the multilateral tariff rate in the next GATT round.

The Government of Canada, as represented by the Minister of RIE has just entered into a Memorandum of Understanding (MOU) with the Rubber Association of Canada on behalf of all the tire and tube manufacturers in Canada. The MOU is intended to serve as an umbrella document by which the industry and the government can address these structural and technological problems.

5. **Competitiveness Assessment**

Unless restructuring takes place in a competitive market, the longer term prospects for the Canadian tire industry are at best uncertain. With the exception of Michelin, the industry is only marginally competitive in a North American free trade context.

Prepared by: Automotive, Marine and Rail Date: February 1986

DG/ADM

FEB 28 1986

ANNEX A

FACT SHEET

NAME OF SECTOR: TIRE AND TUBE MANUFACTURING SIC(s) COVERED: 1511

1. PRINCIPAL STATISTICS

	1981	1982	1983	1984
Establishments	14	13	14	14
Employment	14,486	14,025	13,772	14,078
Shipments[1] ($ millions)	1,656	1,681	1,815	2,126
Gross Domestic Product (Current dollars)				
Investment ($ millions)	----------546.26[2]-------			
Operating Profit	51.2	3.1	(2.8)	26.4

Trade Statistics

	1981	1982	1983	1984
Exports ($ millions)	331	432	437	622
Domestic Shipments ($ millions)	1,656	1,681	1,815	2,126
Imports ($ millions)	352	262	353	552
Canadian Market ($ millions)	1,677	1,511	1,731	2,056
Exports - % of shipments	20.0	25.7	24	29.3
Imports - % of domestic market	21.0	17.3	20.3	26.8

2. REGIONAL DISTRIBUTION - Average over the last 3 years

	Atlantic	Québec	Ontario	Prairies	B.C.
Establishments - % of total	21.0	14.0	58.0	7.0	0%
Employment - % of total	26.0	21.0	52.0	1.0	0%
Shipments - % of total	22.5		72.5	5.0	0%

3. MAJOR FIRMS

Name	Ownership	Location of Major Plants
1. Goodyear Canada Inc.	American	Ontario, Quebec
2. Michelin Canada Ltd.	French	Nova Scotia
3. Firestone Canada Inc.	American	Ontario, Quebec
4. Uniroyal Canada Inc.	American	Ontario
5. B.F. Goodrich Inc.	American	Ontario
6. The General Tire and Rubber Company of Canada Ltd.	American	Ontario
7. The United Tire and Rubber Company Ltd.	Canadian	Ontario
8. Trent Rubber Services (1978) Ltd.	Canadian	Ontario

4. FEDERAL AND PROVINCIAL GOVERNMENT PROGRAMS

Program	Type	Amount	Purpose
ILAP, IRDP RDIA			Modernization, Expansion

1 Based on industry supplied data.

2 The $400 million third Michelin Canada plant constitutes the majority of this investment.

T-PROJET

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

COMPETITIVENESS PROFILE

BOOK, WRITING AND COATED PAPER
(Fine Papers)

1. Structure and Performance

a) Structure

The products of this industry, also referred to as "fine papers", are generally characterized by their high content of chemical wood pulp, although one group, light weight coated (LWC), can contain up to 49 percent groundwood pulp. The two major grades are: the commodity papers (e.g. copying paper, computer and form paper, book and printing paper); and the higher value, lower volume products (e.g. writing, cup and food container stock). Uncoated groundwood printing and tissue papers are not included in this sector.

The Canadian fine paper industry has a capacity of 1.3 million tonnes representing about 6-8 percent of total world capacity. Shipments for 1985 were over $1.1 billion or approximately 8 percent of all Canadian pulp and paper sales. Total employment is 7,100 persons.

There are eight companies producing fine paper at fifteen mills in Canada and all are Canadian owned. There are 5 plants producing more than 100,000 tonnes per year, 5 plants producing between 50,000 and 100,000 tonnes and 5 plants producing less than 50,000 tonnes per year. The mills are located in Ontario, Quebec and British Columbia. Ontario and Quebec mills together produce over 90 percent of all fine papers.

Several paper mills are fully integrated (having a pulp manufacturing section within the mill) but others are only partially integrated or non-integrated in which case pulp has to be purchased from other sources, either from within the same company or on the open market.

The world fine paper industry is a very protected industry, characterized by domestic orientation behind high tariff walls. The post-war GATT negotiations have aided in reducing these barriers but tariffs remain significant in many markets including the EEC, Canada and Japan.

Up to the late 1970s, most of the fine paper domestic demand in Canada was filled by the local industry. Since then, with further tariff reduction in the Tokyo Round, some rationalization and specialization in fewer grades have occurred and both imports and exports have increased. Imports now account for 30 percent of Canadian requirement and, at the same time, exports have risen to 27 percent of total Canadian shipments. Most of this trade is with the U.S. The major growth in export has been in the wood-free (100 percent chemical pulp) business comunications papers where U.S. tariffs are very low or zero.

Domtar is the largest producer and has the largest share of both the domestic and export markets. The other fine paper companies are about equal in capacity to one another but are not consistently active in exports.

Major competitors for Canadian mills in export markets have been the United States, Scandinavia, Japan, the United Kingdom and Brazil, depending on grades.

The North American fine paper industry generally recognizes the need to rationalize to meet a more competitive world trade environment by either upgrading existing plant and machinery, or closing inefficient units. So far in Canada, no mills have shut down but several machines have been retired and the balance are being updated. Two new Canadian fine paper machines were installed during 1983-84 and four more machines (in three mills) will be in production by the end of the decade. In the U.S., it seems that a higher percentage of old machines are being replaced by state-of-the-art equipment than in Canada.

b) Performance

For many years growth in the Canadian fine paper industry focused on the needs of the domestic market. As GNP grew, the industry expanded accordingly without concern with respect to imports, given the high tariffs in place.

During the 1968 to 1982 period, additional capacity in Canada was achieved by minor mechanical improvement of existing machines. Since then, major investments have commenced. Two new machines are already in production. When four new machines come on stream between 1986 and 1990, Canadian capacity will have increased by over 60 percent. The older mills, if they are able to adjust, will specialize in the higher value, low volume grades. The new mills will produce the commodity grades.

Investments in the fine paper industry since 1983 amount to $0.5 billion. Another $1.3 billion will be spent before 1990 and other proposed modernization projects could raise the total to over $2 billion.

2. Strengths and Weaknesses

a) Structural

The fast growing commodity grades (of fine paper) must be manufactured on wide, high speed machines to be profitable. The writing and related grades can be produced on older, slower machines. The Canadian industry has started in recent years to adjust to the growth in demand of commodity grades. The older mills will need to modernize their equipment and integrate backward with pulp production. It is no longer cost effective to build non-integrated mills. All new ones must include a pulp mill and be located in a sustained yield forest area. Canada still has such locations.

Economies of scale are a very important factor in fine paper production costs. The U.S. industry, built to service domestic demand 10-12 times the size of the Canadian market can take advantage of these economies of scale through grade rationalization. Before the recent investments commenced, all the Canadian fine paper industry lagged behind its foreign competitors in terms of the age of the plant and speed and size of machines. When completed, the new investments will place much of the Canadian industry on a comparable basis. However, older mills will continue to be at a disadvantage and will need further adjustments to find a profitable niche for their higher value products.

Labour rates and social benefits were in recent years higher in Canada than in the U.S. although the last labour settlements in Canada appear to have modified this situation.

Transportation costs are not critical in this sector because of the relatively high value of the fine paper, but they favour the American mills, which are normally located close to large population centres. However, many of the Canadian mills are situated some 500 to 700 kilometres from the U.S. markets and can compete in these markets.

The main strengths of the Canadian fine paper industry are: reliable, pure water sources; accessible wood and pulp supplies; inexpensive energy and fairly stable labour conditions.

U.S. producers have a marketing advantage in their own market because of their close relationship or even ownership of the paper merchants. The purchase of several U.S. merchants by Canadian fine paper manufacturers will help reduce this advantage.

b) Trade Related Factors

Since 1979 the U.S. has eliminated tariffs on wood-free printing papers leaving only tariffs ranging from 2.4 to 4.0 percent on writing papers and light-weight coated papers. On January 1, 1987, Canada will have reduced its tariffs in the same range of grades from 12.5 to 6.5 percent, the Japanese from 10.0 to 5.8 percent but the EEC only from 12.0 to 9.0 percent. Combined with free entry for the Scandinavians, it makes the EEC a very difficult market for North American exporters.

Non-tariff barriers (NTB) have been a continuing problem for the Canadian industry. Many U.S. state governments have procurement practices favouring local paper mills, and South American countries have special "administration charges" for imported goods. Of particular concern to the industry is the pending customs tariff nomenclature developed by the Customs Cooperation Council (CCC) in which technical change to an existing paper grade could result in its reclassification into a higher duty category although the end use is unchanged. This would increase other countries' protection for their domestic paper industry.

c) Technological Factors

The same fine paper manufacturing technology is available throughout the world. This technology, however, has evolved rapidly in the last 20 years, making the new or modernized plants much more productive than plants only a decade old.

The technological status of the industry can be measured by the relative level of investment in recent years. From 1968 to 1982 the fine paper industry capacity increases were through relatively inexpensive mechanical modifications and not by installation of large new machines. This 14 year period was very difficult for the industry with a Canadian dollar close to parity with the U.S. dollar, several long strikes and rapidly decreasing tariff rates as the U.S. industry was modernizing and becoming more cost competitive. Since 1983 this situation has completely reversed with almost $2 billion to be spent on new machines and plant modernization by 1990. To date, one quarter of this has been spent.

Before the advent of xerographics, PC computers and no-carbon-required (NCR) multi-forms, the business papers sector of the fine paper industry was relatively stable. There has been a drastic change over the past decade, with a large increase in demand for both wood-free grades (using high percentages of chemical pulp) and coated publication papers. The new printing processes required better quality papers with better sheet uniformity, better surface quality, etc. All mills must meet these requirements if they are to survive. While many mills have now made the necessary adjustments, conversion has yet to be completed in mills with less adequate financial resources.

d) Other Factors

Currency fluctuations have a major influence on the competitiveness of the fine paper industry in general and on commodity grades in particular such as wood-free business papers. Exchange rates favourable to Canadians will help commodity grade exports to the U.S. as the profits on these grades are marginal. Exchange rates are not as critical a factor to producers of special low volume, high value papers, selling quality and after-sales service, who usually work with much higher margins.

3. Federal and Provincial Programs and Policies

The fine paper industry has benefited from both federal and provincial programs including the Pulp and Paper Modernization Program, IRDP and federal-provincial industrial agreements under the umbrella of the multisectored ERDA. As well, various federal and provincial research programs have been utilized by the industry either in-house or indirectly through the Pulp and Paper Research Institute (PPRIC)

4. Evolving Environment

With the advent of computers and other forms of electronic data collectors, it had been suggested that the "paperless society" would be with us by 1990. The reverse now seems to be the case with predictions from several leading econometric consulting groups that printing and writing paper demand in North America will grow 4 to 5.5 percent per year through to the year 2000. Coated paper will show the sharpest growth during this period. This high rate will be caused by the healthy economic situation and the continuing desire to use quality paper in advertising. Further upgrading in paper quality over time is anticipated.

5. Competitiveness Assessment

Over the past decade, the Canadian fine paper industry has lagged behind the U.S. in new investment in fast, high capacity paper machines. As a result, the Canadian industry in general has not been competitive in the high volume, price sensitive, commodity sector of the market. However, the industry is taking impressive actions to position itself to compete in these markets. This is evident by the approximately $2 billion in capital expenditures announced and underway in recent years.

The industry includes some small, old, non-integrated mills that cannot compete on the international market. These plants would require upgrading and with rationalization and elimination of unprofitable grades, they could become competitive in the higher value, low volume, less price sensitive segments of the market.

Parallel to upgrading the physical plant, at least three Canadian fine paper companies have purchased paper merchants in high demand areas of the eastern U.S. Such merchants are essential to making permanent inroads in that market.

Prepared by: Resource Processing Industries Branch
DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

Assistant Deputy Minister
Consumer Goods, Services and Resource Processing

Date: JUL 24 1986

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

NAME OF SECTOR: Book, Writing & Coated Papers (Fine Papers) SIC(s) COVERED: 2719

1. PRINCIPAL STATISTICS

	1982	1983	1984	1985
Establishments	15	15	15	15
Employment	7100	7100	7100	7100
Shipments ($ millions)	854	900	1043	1100
Gross Domestic Product* (Constant 1971-$ millions)	NA	NA	NA	NA
Investment ($ millions)	NA	NA	NA	NA
Profits After Tax ($ millions) (% of sales or revenue)	NA	NA	NA	NA

* With one exception, all fine paper companies are divisions of much larger corporations; therefore, financial data per division are difficult to isolate.

2. TRADE STATISTICS

	1982	1983	1984	1985
Export ($ millions)	174	175	266	300
Domestic Shipments ($ millions)	680	725	777	800
Imports ($ millions)	191	242	351	346
Canadian Market ($ millions)	871	967	1128	1146
Exports as % of Shipments	20	19	25	27
Imports as % of Domestic Market	22	25	31	30
Canadian Share of International Trade FAO Statistics (may contain groundwood paper data)	NA	8	8	8

Source of imports (top 4) %	U.S.	E.E.C.	ASIA	OTHERS
1982	95	2	3	
1983	95	2	3	
1984	74	24	2	

Destination of exports (top 4)	U.S.	E.E.C.	ASIA	OTHERS
1982	85	6	9	
1983	92	1	7	
1984	88	1	11	

3. REGIONAL DISTRIBUTION - Average over the last 3 years

	Atlantic	Québec	Ontario	Prairies	B.C.
Establishments - % of total	Nil	43	50	Nil	7
Employment - % of total	Nil	41	57	Nil	2
Shipments - % of total	Nil	35	53	Nil	12

4. MAJOR FIRMS (1984 data)

Name	Ownership	Location of Major Plants
Domtar Fine Papers	Que. Govt. 45% Public 55%	Que. Ont.
Kruger Inc.	Kruger family 100%	Que.
E.B. Eddy Forest Products	Geo. Weston 100%	U.S., Que., Ont.

...2

Name	Ownership	Location of Major Plants
Abitibi-Price Inc.	Gulf Canada 90% Public 10%	Ont.
Rolland Inc.	Family 57% Public 43%	Que.
Great Lakes Forest Products	Cdn. Pacific 54% Public 46%	Ont.
Island Paper Mills	MacMillan Bloedel 50% Fraser 50%	B.C.
Fraser	Noranda 100%	U.S., B.C., Ont.
New Mills		
Repap-Miramichi Pulp and Paper Inc.	Repap Enterprises 100% (Start-up mid 1986)	N.B.
Weyerhaeuser Canada Ltd.	Weyerhaeuser Co. U.S. (100%) (Start-up 1989)	Sask.

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DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

COMPETITIVENESS PROFILE

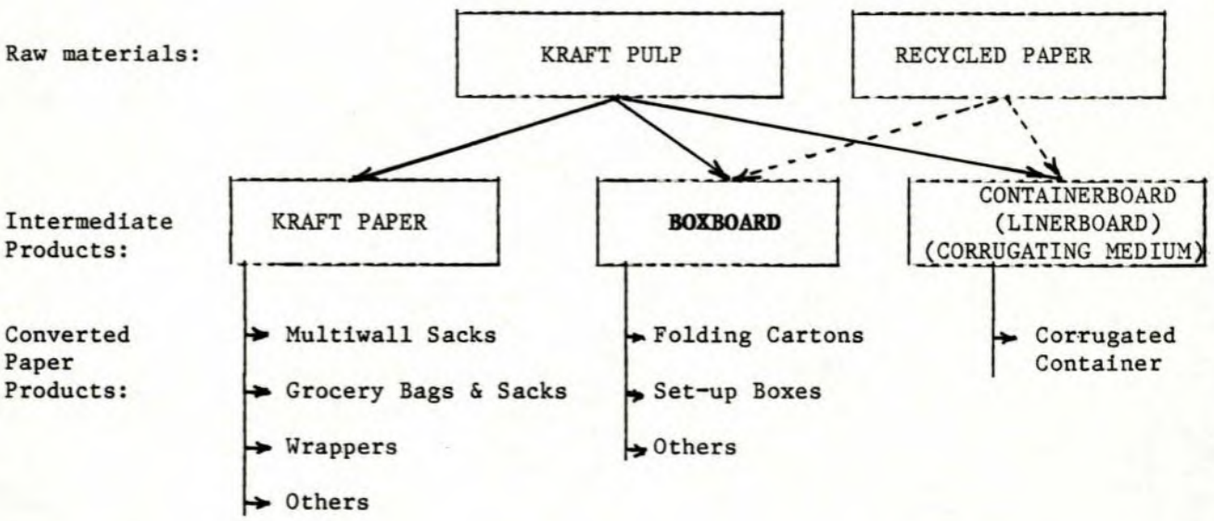
BOXBOARD

1. Structure and Performance

a) Structure

Boxboard is a general term designating the paperboard intermediate product used for fabricating folding cartons and set-up boxes. It is made of virgin fiber, recycled paper or a combination of the two and may be plain, lined or clay coated. Its relationship with other materials and products of the packaging sector is as follows:

PAPER BASED PACKAGING



Canadian shipments of boxboard in 1985 are estimated at about $450 million. Only 8 percent were exported, almost exclusively to the U.S. It is a bulky product of relatively low value which is not normally sold to offshore markets by Canadian or other producers. It is mostly sold within 600 kilometers of the production plant to carton and box makers which also have to be situated near their customers. The Canadian production of boxboard represents 5 percent of the world and 10 percent of the North American total shipments.

The sector consists of 16 mills, wholly or partially engaged in the production of boxboard grades. There are 5 large plants each producing 70,000 to 125,000 tonnes per year, 8 intermediate ones (25,000 to 50,000 tonnes) and 3 small ones (5,000 to 15,000 tonnes). Production capacity is distributed as follows: Ontario 51 percent; Quebec 33 percent; B.C. 11 percent; N.B. 4 percent; and N.S. 1 percent. Direct mill employment in 1984 was estimated at 2,600 persons, and was distributed in approximately the same ratio as capacity.

Just over 80 percent of the production capacity is Canadian-owned with the balance being held by U.S. interests. Some 45 percent of total capacity is integrated forward into box making, with slightly better than 30 percent of total capacity being integrated within one corporate group. The mills producing boxboard from virgin fibers have integrated kraft pulping facilities using wood as raw material. The other producers, accounting for 90% of the sector capacity, purchase the recycled paper on the open market.

A wide range of boxboard grades are produced. The "commodity" grades (i.e. cheaper recycled products) are not imported in significant amounts but their prices are often influenced by the threats of imports. In the high quality grades (e.g. coated bleached board used in milk cartons) imports are taking an increasing share of the Canadian market.

b) Performance

Growth in demand for boxboard has been negligible in recent years. Its main customer, the folding carton industry, is mature and is even losing a share of its market to other materials, mostly plastics.

Since 1982, there has been a modest growth in Canadian boxboard capacity, as a result of producers attempting to increase mill efficiency through minor modernization expenditures. These small annual increments in capacity have led to an overcapacity, especially in folding boxboard where it has become quite pronounced. In spite of this overcapacity, Canada is increasingly becoming a net importer of U.S. made boxboard because of the lower price or better quality.

Imports of boxboard on a tonnage basis have slowly increased between 1975 and 1984 at an average rate of close to 1 percent per year. Exports, by contrast, have been variable and show no evidence that Canadian mills have attained an established position in any market, including the U.S., despite having duty-free access to the U.S. for a number of years.

The excess capacity and the competitive threat of lower-cost, American-based producers have constrained domestic prices for boxboard. This has resulted in poor profit margins for Canadian producers.

2. Strengths and Weaknesses

a) Structural

Economies of scale and specialization in a limited number of products are the main factors affecting the comparative costs of producing boxboard. Canada has no world-scale boxboard mill. The relatively small size of each regional boxboard market coupled with the need to provide a wide range of products, has prevented this industry from developing into a few large production units.

By contrast, the U.S. market is large. Many U.S. producers can take advantage of economies of scale and they have the opportunity to specialize in a few grades of boxboard. U.S. labour rates are also lower than Canadian ones, and, coupled with improved labour productivity through long production runs and minimum machine changeovers, the U.S. labour unit cost is substantially lower than in Canada.

Canadian boxboard plants are generally older and less cost-effective than the U.S. competitors.

Both Canadian and U.S. mills compete for U.S. recycled fibre. The cost of this raw material accounts for 35 to 40 percent of the variable production cost. Canadian mills import approximately 45 to 55 percent of their recycled fibre requirements from the U.S. because Canada's low population density has prevented the establishment of sufficient economic waste paper collection systems. Canadian boxboard producers' access to the American secondary fibre supply is through U.S. "exporters" whose prices to Canadian customers are generally higher than the U.S. "domestic" price by approximately 45 to 50 percent including the transportation charges.

b) Trade Related Factors

On January 1, 1987, Canadian duty on solid bleached boxboard (a virgin fibre product, used for instance in milk cartons) will be 6.5 percent. All other boxboard will enter Canada at 9.2 percent duty. The tariffs on the same two grades would be 2.5 and 6.4 percent in Japan and 6.0 and 9.0 percent in the EEC. All boxboard entering the U.S. has enjoyed duty-free access for some years.

With respect to boxboard grades, there are no NTB between Canada and the U.S., and Canada and other countries.

c) **Technological Factors**

The same boxboard manufacturing technology is available throughout the world. This technology is evolving continuously making new or modernized plants more productive than older ones.

d) **Other Factors**

Exchange rates have been an important factor in maintaining competitiveness of Canadian mills in the domestic market but they have not been sufficient to bring Canadian mills into a competitive position in the U.S. market.

3. Federal/Provincial Programs and Policies

There are no federal or provincial program specifically targetted to this sector.

4. Evolving Environment

Real demand growth for boxboard in Canada and the U.S. is expected to be marginal (i.e. averaging about 1 percent per year), over the long term. Boxboard's main outlet, the folding carton industry is mature and is even losing a share of its market to other packaging materials.

In Canada, the small but steady development of excess capacity will likely keep downward pressure on boxboard prices, to the detriment of mill margins, cash flow and capital formation for re-investment.

U.S. producers are expected to add almost 1 million tonnes of capacity (14% of existing capacity) as a result of machine improvements and machine additions that began in 1984 and are scheduled for completion by the end of this decade. It seems unlikely that this capacity growth will be fully absorbed by the U.S. market for some time and this could put additional price reducing pressure on the Canadian market.

5. Competitiveness Assessment

Despite the benefit of favourable exchange rates and high tariffs, Canadian boxboard mills are losing an increasing share of the domestic market. They have been unable to establish and maintain an effective penetration of the large U.S. market despite duty-free access. Transportation costs for this low value, bulky product make offshore markets inaccessible.

Canadian mills are older, on average, than the U.S. mills and their productivity is lower. This productivity gap is increasing as the U.S. boxboard industry is investing in new machines and in modernization of existing ones. The industry is thus expected to remain uncompetitive in the long term unless significant modernization and rationalization take place.

Prepared by: Resource Processing Industries Branch
DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

Assistant Deputy Minister
Consumer Goods, Services and Resource Processing

Date: JUL 24 1986

July 1986

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

FACT SHEET

NAME OF SECTOR: Boxboard **SIC(s) COVERED: 2713 (1980)**

1. PRINCIPAL STATISTICS

	1973	1980	1981	1982	1983	1984	Estimate 1985
Establishments	16	16	16	16	16	16	16
Employment	2800	2500	2600	2300	2600	2600(e)	2600(e)
Shipments ($ millions)	198	305	357	332	422	464(e)	452(e)
(volume tonne '000	-	672	698	614	712	738	703
Gross Domestic Product (Constant 1971-$ millions)	Not available -- confidentiality requirement in sub-groups						
Investment ($ millions)							
Profits After Tax ($ millions) (% of income)							

2. TRADE STATISTICS

	1971	1980	1981	1982	1983	1984	1985
Export ($ millions)	4	13	15	14	24	40	32(e)
Domestic Shipments ($ millions)	194	292	342	318	398	424(e)	420(e)
Imports ($ millions)	11	12	21	40	48	70	84
Canadian Market ($ millions)	205	304	363	358	446	494(e)	504(e)
Exports as % of Shipments	2	4	6	4	6	9(e)	7(e)
Imports as % of Domestic Market	5	4	6	11	11	14(e)	17(e)
Canadian Share of International Market	less than 2 per cent						

Source of imports (top 4)	U.S.	E.E.C.	ASIA	OTHERS
1981	100	-	-	-
1982	99	-	-	1
1983	99	-	-	1
1984	100	Neg.	-	Neg.

Destination of exports (top 4)	U.S.	E.E.C.	ASIA	OTHERS
1981	99	-	-	1
1982	99	-	-	1
1983	99	-	-	1
1984	93	Neg.	Neg.	7

3. REGIONAL DISTRIBUTION - Average over the last 3 years

	Atlantic	Québec	Ontario	Prairies	B.C.
Establishments - % of total	12	44	38	-	6
Employment - % of total	6	34	49	-	10
Shipments - % of total	not available				

4. MAJOR FIRMS

Name	Ownership	Location of Major Plants	Concentration (% of domestic market)
Belkin Inc.	Canadian	B.C.; Ont; Que.	Not published information.
Beaver Wood Fibre Ltd.	American	Ont.	
C.I.P. Inc.	Canadian	Que.	
Cascades Paper	Canadian	Que.	

Note: (e) denotes estimate
Neg. denotes negligible

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COMPETITIVENESS PROFILE
CANADIAN FREIGHT FORWARDING (CORRIGENDUM)

PLEASE SUBSTITUTE FOR PREVIOUS DOCUMENT

October, 1986

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DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

COMPETITIVENESS PROFILE

CANADIAN FREIGHT FORWARDING INDUSTRY

Freight forwarders arrange transportation and traffic services (packaging, storage, handling, export credits, insurance, documentation and customs clearance) for the delivery of a shipper's goods from the shipper to the consignee. The forwarder is paid a fee for acting as the shipper's agent to make these arrangements. By acting on behalf of several small shippers, forwarders often can obtain lower transportation rates from air, ocean, highway or rail carriers than shippers contracting with carriers on their own behalf.

Freight forwarding by its nature is an international activity where companies must compete with each other in world markets. The shipper's choice of a forwarding or transportation company depends upon the availability, efficiency and reliability of services offered in the international marketplace. In addition to competing with carriers, Canadian forwarders must compete for the control of Canadian export cargoes with forwarders in other countries. When Canadian exporters leave transportation arrangements in the hands of the consignee (eg. Canadian F.O.B. factory sales), Canadian forwarders cannot compete for this business unless they have an office or agent in the country of the consignee.

This analysis examines factors that affect the competitiveness of the Canadian freight forwarding industry to obtain a share of world traffic. The major competitors within the industry can be grouped as Canadian-owned freight forwarding companies controlled by Canadian nationals and large multinational freight forwarding companies operating in Canada. None of the multinational companies are owned by Canadian interests.

1. Structure and Performance

1.1 Structure

The freight forwarding industry in Canada consists of 430 companies which employ 9600 people in 1200 offices and 160 cities across Canada. The structure of the Canadian freight forwarding industry is the same as that found in other countries. Two-thirds of Canadian companies are small businesses with just one office. These single office companies account for only 14% of industry sales. Fifteen companies with a large number of offices across Canada receive 60% of industry revenues. Although the sector is dominated by a few large companies, all of the industry operates through small offices staffed by an average of 6 to 13 people. The size of a company is measured by the number of offices it maintains rather than any large concentration of staff in one location. Ninety per cent of Canadian offices are found in Quebec, Ontario and British Columbia. The major urban centres of activity are Montreal, Toronto and Vancouver.

Forwarding companies in the sector provide a full or partial range of freight forwarding services, as well as, some trucking and/or traffic services. There is a trend among large companies to provide a full range of services. The small single office firms compete for niches in the market with specialized freight forwarding services for the shipment of goods based on their knowledge of a client's requirements, a mode of transportation, a commodity, and/or a geographic market. Customs brokerage is a major service activity of the industry. This service for clearing goods through customs authorities is available from 62% of the companies in the sector. One third of the industry, mostly small single office businesses, specialize exclusively in this service. The greatest proportion of customs transactions, however, are handled by large companies offering a full range of freight forwarding services.

Industry revenues from freight forwarding and customs brokerage services are estimated to be $1 billion per year. Industry sales are derived primarily from international forwarding (55%), customs brokerage (30%), and some domestic forwarding (15%). Domestic forwarding primarily involves the transfer of goods entering Canada into rail or highway modes for inland distribution.

There is a substantial foreign presence in the sector. European, United States, Australian and Japanese multinationals control 40% of the Canadian forwarding market through the ownership of 11% of the total number of companies in Canada. While European multinationals are very active in the international ocean freight forwarding market, American controlled firms are mainly involved in airfreight forwarding. These multinational firms provide Canadian shippers with access to efficient physical distribution systems for the movement of Canadian trade. There are no comparable Canadian-owned companies that have the same extensive international network of offices as the multinationals. Canadian-owned companies are active primarily in the customs brokerage segment of the forwarding market. While one half of the top fifteen companies in the industry are Canadian-owned, their position in the Canadian market is based on revenues from customs brokerage services which do not rely on the use of foreign offices and international distribution networks.

The Canadian industry is experiencing a period of major adjustment. The 1981-1983 economic recession forced forwarders and carriers to seek additional sources of revenue from the introduction of new services. Many Canadian forwarders began to offer services as transportation brokers(1) where they assumed total responsibility for the safe delivery of their client's goods. This departure from the forwarder's traditional role as a shipper's agent introduced new liabilities for the industry. Instead of simply acting as an agent for arranging transportation, forwarders offering transportation brokerage services became principals in transportation contracts with the same liabilities as carriers. The recession also encouraged carriers to market forwarding functions as part of their strategies for serving customers with a total package of door-to-door distribution services. As a result, it became difficult to distinguish between competing services of forwarders, transportation brokers and common carriers. These developments along with numerous mergers, acquisitions and some bankruptcies among forwarders and carriers enforced the trend towards a concentration of ownership in the forwarding industry.

1.2 Performance

The level of Canadian freight forwarding activity between 1973 and 1984 corresponded directly with the demand for transportation. The forwarding market grew at an annual rate of 8.2% between 1973 and 1980(2) as a result of favourable economic conditions. This period of growth ended in 1981 with the abrupt decline in shipping activity which lasted until mid 1984. At the same time, however, there was a shift among North American shippers towards the greater use of international highway and air carriers. Because freight forwarding consolidation services are often used for cargoes shipped in these modes, the proportion of international shipments handled by freight forwarders rose and cushioned the overall decline in shipping activity to some degree. This change in shipping practices is attributed to competition among carriers arising from the deregulation of United States carriers, and the introduction of just-in-time distribution concepts that are used to reduce inventory

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(1) Transportation Broker: A company that has a contract to control transportation equipment but does not own it.

(2) Average annual percentage change in revenues measured in constant 1973 dollars.

carrying costs. Since the fall of 1984, there has been a significant recovery in shipping activity. The general improvement in the economy has returned levels of sales activity and profitability in the freight forwarding industry to those experienced in the pre-1980 period.

2. Strengths and Weaknesses

a) Structural

Two key factors affecting the ability of companies to compete as world scale forwarders are the size of their international network of offices and agents, and their volume of international business. Canada's international freight forwarding network consists of 500 foreign offices and 4,200 agency agreements with forwarders in other countries. Multinational companies operating in Canada maintain 90% of the 500 foreign offices. Canadian-owned forwarding companies rely primarily on foreign agents to handle their shipments.

The scale of operations of the Canadian-owned freight forwarding segment is too small to provide the volume of traffic required to compete as world scale forwarders. Their current dependence upon shipments from Canadian trade alone is insufficient to support the operations of a world scale company. Large multinational companies use their total volume of international traffic that originates in several countries to negotiate low transportation rates with carriers. Canadian-owned companies trying to become world scale competitors must, therefore, capture a larger share of the world's international traffic. In order to do this, they need to control cargoes originating outside of Canada that are destined for Canada, as well as other countries.

Very few Canadian-owned companies have the necessary financial resources to establish new foreign offices. Consequently, they depend on the use of agency agreements with companies in foreign countries to act on their behalf for the receipt and distribution of shipments. Unfortunately, agency arrangements often break down after a critical volume of traffic is established. At this point, it becomes economical for one party to open an office in the other's country. In the majority of cases, breach of agreements favour the foreign forwarder because there are greater volumes of finished goods suitable for freight forwarder consolidations entering Canada than leaving it. This instability in agency agreements impedes the ability of Canadian forwarders to maintain or expand their distribution networks.

b) Trade Related Factors

Traditional Canadian forwarding markets are between Canada and the United States (25%), Europe (41%), the Far East or Australia (21%). The familiarity of Canadian exporters with the United States market, along with the ease of arranging transportation within North America reduces the need to use freight forwarders. These conditions account for the low proportion of freight forwarding revenues derived from Canada's trade with the United States which represents 70% of all Canadian exports. Current industry activity is focussed on increased trade with Pacific Rim countries and business opportunities arising from the United States deregulation of its transportation industry. About 13% of Canadian trade is with developing countries where forwarders are primarily involved with aid or turnkey project work.

Transportation deregulation in the United States has opened new markets for Canadian forwarders. United States ocean, rail and highway carriers are now allowed to offer contract rates and volume discounts to shippers and transportation brokers. A Canadian government discussion paper, "Freedom to Move", recommends that Canadian railways should be permitted to offer similar contract rates. The introduction of contract rates and the elimination of tariff filing requirements in the United States is placing forwarders with high cargo volumes in an excellent competitive position to negotiate low transportation rates with carriers on behalf of both large and

small shippers. Should similar deregulation initiatives be introduced in Canada, the competitive position of forwarders vis-à-vis Canadian carriers may improve.

The close proximity of Canada to United States ports allows Canadian forwarders to route goods through the United States where they can obtain discounted ocean rates which are lower than rates available in Canada. This cost advantage has encouraged American and Japanese forwarding companies and/or transportation brokers based in the United States to enter the Canadian market as a way to build-up traffic volumes for shipments hubbed out of United States transportation centres. Unless Canadian transportation deregulation initiatives promote greater competitiveness with United States carriers, it is anticipated that Canadian forwarders will face more competition from forwarding companies operating out of United States distribution points.

Freight forwarders have encountered foreign laws aimed at capturing a larger share of the international transportation market. Some developing countries have introduced legislation that limits competition in favour of national companies. Their laws require the use of transportation, forwarding and insurance companies owned by their citizens for the shipment of cargo under the control of these nations. No similar non-tariff barriers exist for Canadian forwarders operating in the United States, Europe or Australia.

c) Technological Factors

The freight forwarding industry depends on the efficient processing and communication of information. Approximately 6% of its operating costs are associated with information processing. The Canadian-owned industry relies mainly on the use of manual documentation procedures and knowledgeable staff rather than new technologies. Increasing paperwork and communication requirements, however, are forcing companies to examine benefits available from the application of computer technology. Computer communications capabilities are becoming essential for forwarders to efficiently conduct business transactions with shippers, carriers, and government departments.

The application of computer technology in Canada and other countries is presently restricted to large multinational forwarders and a few large Canadian-owned customs brokers due to high software development costs. This cost impediment places the introduction of new systems beyond the reach of small and medium size Canadian-owned companies. On the other hand, most world scale multinational companies have computer automation and communication systems in place. Their high volume of business permits them to more easily absorb development costs than Canadian-owned companies with lower gross sales.

d) Other Factors

A company's ability to take advantage of market opportunities depends on the availability of funding. Sufficient lines of credit or cash flow reserves must be maintained to pre-pay the cost of a client's transportation, traffic services, duties and taxes. Access to funds at attractive interest rates can be critical, particularly in respect to financial guarantees required for performance bonding and long term cash outlays in project work where a forwarder assumes full responsibility for the timely delivery of goods. The small size of the average Canadian-owned company limits the industry's access to adequate funding. As a result, Canadian-owned companies are less competitive in bidding for project work than well-funded foreign competitors operating in Canada and abroad. These financial restrictions affect the ability of the industry to expand into new markets.

The availability of well trained staff is another critical factor in the success or failure of a forwarding business. There is a shortage of skilled people in Canada to meet the needs of the industry. Canadian training programs are inadequate when compared to the well

established apprenticeship schemes of Europe. It is commonplace for companies operating in Canada to recruit managers and staff from the European apprenticeship training system. The limited access of Canadian-owned companies to well established training programs and qualified staff is a competitive disadvantage.

3. Federal and Provincial Programs and Policies

There is very little government involvement in the Canadian forwarding industry. Unlike forwarders in other countries, such as the United States where forwarders are licensed as indirect transportation carriers, the Canadian industry is relatively free from any direct or indirect government controls. Revenue Canada, Customs and Excise regulations are used to license customs brokers, bond freight consolidators, and grant sufferance or bonded warehousing rights. The industry is affected by the customs clearance procedures and government administrative policies. The trend towards the use of simpler customs entry procedures for higher values of imports is expected to reduce the volume of small shipments handled by custom brokers. This loss of business to carriers, couriers and parcel delivery firms has motivated forwarders specializing in customs brokerage to provide a broader range of forwarding services.

4. Evolving Environment

The size of the Canadian transportation market is not expected to grow significantly in the future. A transportation freight forecast(1) estimates a 1.1% growth per year until 1995 in Canada's international traffic. Consequently, competition among forwarders and carriers will intensify as companies seek to increase their current market shares in existing traffic routes. As the trend towards larger companies with integrated services and high capital investments in computer systems continues, there will be a reduction in the number of companies in the industry. There will be fewer small companies and a further concentration of business among the large companies.

United States Transportation deregulation is providing new business opportunities for forwarders. The elimination of tariff filing requirements and the introduction of contract rates are making it worthwhile for shippers to use forwarders that have negotiated low transportation rates with carriers in that country. Further benefits may accrue to the forwarding industry, if similar regulatory changes are introduced in Canada. Their ability to control cargoes as transportation brokers will allow forwarders to capture a greater share of the transportation market. This new competitive position may bring about proposals from some interest groups to regulate forwarders or transportation brokers. Such action could limit the role of Canadian forwarders to promote competition among carriers.

Multinationals moving into the Canadian market from the United States, along with new door-to-door multimodal services created between rail and ocean carriers will produce greater competition for Canadian-owned forwarding companies. The presence of United States based forwarders may lead to the further diversion of Canadian shipments through United States transportation centres unless Canadian carriers are able to offer more competitive transportation rates.

5. Competitiveness Assessment

Canadian shippers have access to competitive transportation rates from the freight forwarding companies operating in Canada. They are well served by the well-established international distribution networks of multinational companies. These companies generate sufficient volumes of cargo from their world scale operations for them to effectively negotiate economical transportation rates with carriers serving Canada. The freight forwarding industry is expected to continue to play a very important role in the new deregulated transportation environment for promoting competition among carriers.

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(1) Freight and passenger forecast-TP 2957 Transport Canada - 1985.

Canadian-owned freight forwarding companies are very competitive in providing customs brokerage and domestic forwarding services which do not depend upon the use of foreign offices. Canadian-owned forwarding companies providing international logistics services are not competitive with multinational freight forwarding companies operating in the Canadian market. Their limited scale of operations and weak international distribution networks inhibit their ability to compete effectively. A few Canadian companies have taken steps to become more competitive through the opening of new offices in the United Kingdom and the Far East. Others have bought interests in United States and European forwarding companies to expand their distribution capabilities.

The competitive position and performance of the Canadian-owned freight forwarding segment of the industry may improve, if it is able to:

a) expand its international distribution networks;

b) increase the traffic volumes of the large companies;

c) improve the quality of existing services and the professional training of its Canadian employees; and

d) pursue the aggressive marketing of its forwarding services.

Prepared by: Service Industries Branch
DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

Assistant Deputy Minister
Consumer Goods, Services and Resource Processing

Date: JUN JUIN 6 1986

FACT SHEET

FREIGHT FORWARDING INDUSTRY

SIC #4592

1. PRINCIPAL STATISTICS

	1973	1976	1980	1984
Establishments	--	--	500*	430
Offices in Canada	--	--	--	1,194
Employment	--	--	--	9,600
Percent International Traffic	84.7%	88.7%	91.5%	--
Percent Domestic Traffic	15.3%	11.3%	8.5%	--
Percent Import Traffic	--	60.0%	--	60%
Percent Export Traffic	--	40.0%	--	40%
Value of Shipments $(millions)	--	--	--	6,000*
Net Revenues $(millions)	276	471	908	1,000*
Net Revenues in 1973 constant $(millions)	276	336	462	--
Pretax Profits - $(millions)	9	29	31	--
Pretax Profits in 1973 constant $(millions)	9	18	15	--

2. REGIONAL DISTRIBUTION

	Atlantic	Quebec	Ontario	Prairies	B.C.
Establishments - % Total	4%	26%	41%	16%	13%
Employment - % Total	4%	26%	48%	13%	9%
Shipments - % Total	--	--	--	--	--

3. FOREIGN TRADE

ORIGIN/DESTINATION OF TRAFFIC HANDLED BY FORWARDERS

	U.S.A.	E.E.C.	ASIA	OTHERS	TOTAL
Exports % of total 1980 *	3.4%	47.0%	32.0%	17.6%	100%
1982 *	16.1%	40.8%	18.7%	24.4%	100%
Imports % of total 1980 *	25.6%	41.4%	21.9%	11.1%	100%
1982 *	27.8%	41.7%	25.3%	5.2%	100%

4. MAJOR FIRMS

Name	Ownership	Location of Major Plants
Affiliated Customs Brokers Ltd.	Canada	
Kuehne & Nagel International Ltd.	West Germany	(offices
Livingston International Inc.	Canada	(across
Panalpina Inc.	Switzerland	(Canada
Peace Bridge Brokerage Ltd.	Canada	
Schenker of Canada Ltd.	West Germany	

Notes:

* = Estimate
- = Not available

While 1984 data is shown above, specific data used in the competitive analysis is based on recent information obtained directly from industry and other sources.

DRAFT - PROJET

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

COMPETITIVENESS PROFILE

Name of Sector: CANE AND BEET SUGAR PROCESSORS

1. STRUCTURE AND PERFORMANCE

Structure:

The Canadian sugar processing industry (SIC 1082) can be divided into two primary operations: cane sugar refineries and beet sugar processors. Cane sugar refineries account for some 90 percent of Canadian production and process imported raw cane sugar to produce various types of granulated and liquid sugar. Beet sugar plants process locally-grown sugar beets to produce sugar as well as two major co-products, pulp and molasses and account for about 10 percent of sector activity.

The sugar refining process is essentially one of removing water from raw sugar through the use of centrifugal separators and heat dryers. Raw cane sugar is imported in a semi-processed form, only requiring further purification and refining. Sugar beets require slicing and some preliminary processing to derive the raw sugar, but the process is essentially the same following this stage as for raw cane sugar.

About two thirds of total domestic sugar production goes to industrial users. The most significant industrial market segments include soft drink manufacturers, flour and breakfast cereal manufacturers, the dairy product industry and miscellaneous food processors which include high sugar content products such as drink mixes, cake mixes, jams, and catsups.

The industry consists of seven major establishments, each employing between 100 and 400 people. Plants of this size are essential to achieve adequate economies of scale. The sugar processing industry is very capital intensive and highly concentrated; three major companies now produce nearly 100 percent of the sugar refined in Canada. The Canadian sugar refining industry is about 85 percent Canadian owned, with the only major foreign interest being a 50.4 per cent share of Redpath Industries Ltd. held by Tate and Lyle of the U.K.

Of the seven establishments currently operating in the sugar industry, five produce refined cane sugar and two produce refined beet sugar. The major cane and beet sugar processors in Canada are Lantic Sugar Ltd., Redpath Industries Ltd., and B.C. Sugar Ltd. Refineries producing cane sugar are located in Vancouver, Toronto, Oshawa, Montreal and Saint John, New Brunswick. B.C. Sugar Ltd. owns the two installations producing beet sugar, which are located in Taber, Alberta and Winnipeg, Manitoba.

The industry produces a homogeneous product that has high transportation costs relative to selling price; therefore, each sugar plant has a fairly well-defined market territory. Cane sugar refineries are generally located at ports close to major markets because raw sugar is transported most cheaply by ship, while the finished product requires high-cost transportation and handling but is low priced, bulky and has low value-added. The two beet sugar factories operating in western Canada have a certain competitive advantage in supplying the Western provinces since cane refineries in the port cities would incur significant freight costs in servicing interior markets. However, when world cane sugar prices are very low, as is the case currently, sugar beet growers have difficulty competing with imported raw sugar, making beet processing operations vulnerable to interruptions in sugar beet supply.

The international market for sugar is highly restricted, with government interventions having a major impact on the price of raw sugar. Between 80 and 85 percent of world trade in raw and refined sugar is handled through a series of bilateral trade agreements, trade preferences, quotas, domestic subsidies and price supports generally on an intergovernmental basis. Canada is one of the few countries that purchases raw sugar supplies on the open market.

The Canadian sugar refining industry is essentially domestically oriented, although significant levels of trade do exist. Exports in 1984 were $107 million, over 96 percent of which was shipped to the United States. Imports in 1984 were $34 million, 70 percent of which was imported from the United States. Export markets vary according to international supply conditions. For example, one-time sales to the USSR, Mexico, Chile and various Caribbean countries have supplemented our traditional export market in the U.S. in recent years.

As well as cane and beet sugar, the sweetener industry comprises a number of other products including corn sweeteners and low calorie sweeteners. These account for a growing share of the sweetener market and may erode the market share of the more conventional sweeteners in the future if the price of sugar stabilizes at a significantly higher price.

Performance:

Sugar refiners in 1984 had total shipments of $661 million, a 15 percent decrease from 1980. However, Canadian production volumes, including that produced for export, have remained remarkably stable at about one million metric tonnes of refined sugar per year for several decades. The variability in annual shipment values is, instead, due to volatile world sugar prices. Five to ten year periods of low world market prices have typically been interrupted by one or two years of price explosions with the latest occurring in 1980/81.

The trade surplus of $73 million in 1984 was unusually high, but Canadian producers have enjoyed a comfortable annual trade surplus of $35-$40 million in refined sugar since the mid-1970's. Canadian refiners have traditionally supplied approximately 95 percent of domestic demand, although import penetration has risen recently because of U.S. export support policies. Canadian exports had historically been about 7 percent of shipments, but have been nearly double this percentage since 1977. These exports are now greatly reduced due to the imposition of import quotas by the United States.

In 1984, total direct employment in the industry was 2,100, down from 2,338 in 1982. This total has declined from 3,205 in 1964 as a result of plant closures as well as the modernization and replacement of equipment in the industry.

The industry has shown fairly consistent profitability, despite the volatility of world sugar prices and the lack of any price support program, at about 1.3 cents per pound of sugar sold. A further sign of profitability has been the aggressive diversification activities of the sugar companies toward other areas seen to offer greater growth potential.

The Canadian Sugar Institute has estimated that the industry's production capacity is currently approximately 1,135,000 metric tonnes. In 1984, capacity utilization was nearly 95 percent due to strong export performance to the United States. Exports to the United States have declined since 1984, so utilization rates would also have declined somewhat.

2. STRENGTHS AND WEAKNESSES

a) Structural

The Canadian sugar industry is highly efficient. Despite its domestic orientation, the profitability of the industry is linked closely to its export competitiveness, which in turn is directly dependant on the price and availability of world sugar supplies, and the condition of export

markets. The availability of alternative sweeteners and supplies of sugar to industrial users in the domestic market has a restraining effect on profit margins, while exports to markets with price support regimes can be much more profitable.

Canadian sugar cane refiners buy their raw sugar on the free world sugar market with price movements accordingly. In general, free market prices are lower than the government to government agreements common to most countries; as a result Canada has enjoyed lower average refined sugar prices than most industrial nations and is one of the few countries with no domestic price support program.

In order to counter stagnant domestic consumption and excess production capacity, Canadian sugar companies have pursued export markets for several years. However, results have been mixed for a number of reasons. Competing foreign refineries are often supported by government subsidization of their exports during periods of surplus. As well, many prospective markets are protected by tariff as well as non-tariff barriers that greatly increase the delivered cost of imported refined sugar.

b) Trade Related Factors

Tariffs on refined sugar in Canada are set at $24.69 per tonne, or about 2.5¢ per kilogram. In the United States, the duty rate on refined sugar is much higher, about 6.6¢ (9.0¢ Canadian) per kilogram. However, non-tariff barriers are much more serious impediments to trade in this sector.

Sugar is one of the most widely traded agricultural commodities in the world with such major trading nations as the U.S.A., the U.S.S.R. and the European Community purchasing raw sugar from Third World countries as part of barter/foreign aid arrangements. Trade in sugar had an estimated annual value between 1980 and 1984 of some $13 billion, being surpassed in food products only by trade in wheat and flour, fresh and frozen meat and soybean products.

In order to protect its domestic sugar price support program from low-price sugar imports, the U.S. government has imposed over the years a variety of tariffs, fees and quotas. On May 5, 1982, the U.S. imposed a country by country quota on sugar imports. Canada has been allocated 1.1 percent of the annual quota. The actual amount that can be imported under the quota has declined from 30,000 tons to 17,000 tons as the U.S. market has become more self-sufficient. Following the imposition of this quota, the U.S. government also took steps to restrict the import of many sugar containing products, further damaging Canada's export performance.

In June 1983, the United States exempted from the sugar quota imports of raw sugar to be re-exported in refined form and on January 25, 1985, imports of raw sugar to be re-exported in sugar-containing products. The re-export programs allow U.S. exporters to utilize U.S. duty and import fee drawbacks ranging up to 6.88 cents per pound, and has resulted in a situation where U.S. exporters can deliver sugar in Canada at approximately 16¢/lb. versus the U.S. price of 35¢/lb. and the comparable Canadian price of 25¢/lb. This has resulted in imports of refined sugar from the U.S. increasing from 17,911 tonnes in 1983 to 90,647 tonnes in 1985.

c) Technological Factors

To achieve production economies of scale and to compensate for high capital investment costs, the size of operations in the industry needs to be very large, resulting in a limited number of plants using long-established mature technology. Canadian refining operations are as technologically sophisticated and efficient as those elsewhere in the world. Major technological improvements in packaging and the handling of bulk materials have also increased the efficiency and competitiveness of Canadian plants.

3. FEDERAL AND PROVINCIAL PROGRAMS AND POLICIES

Canada has no special support programs for sugar refiners. Although most other countries have price support programs for domestic sugar growers, Canada does not. The government has recently announced a cost-shared stabilization program for sugar beets. For the 1986 crop year, the costs of the stabilization program will be shared by the federal government and the sugar beet growers. In subsequent years, program costs will be shared among the federal government, the growers and the provincial governments of Alberta, Manitoba and Quebec.

In the past, an international body, the International Sugar Organization (ISO), existed to try to stabilize world sugar prices by extablishing export quotas and rules for holding and releasing reserve stocks among its members. Although Canada participates in the International Sugar Organization, this mechanism has not been successful in containing price fluctuations within the target range and the function of attempting to match supply and demand was phased out in 1984. A new agreement provides a forum for reviewing statistics for 1985 and 1986 and for examining the renegotiation or extension of the accord in 1986.

Domestic regulation includes regulations concerning product purity and safety or labelling administered by Health and Welfare Canada or Consumer and Corporate Affairs. Regulations also cover the import and export of various sweeteners.

4. EVOLVING ENVIRONMENT

The flat market for sugar and sugar-containing products coupled with more intense competition from other sweeteners mean that the sugar industry has limited long term potential. It is unlikely that overall demand will increase significantly, indeed, it is more likely that it will decline thereby increasing pressure on the Canadian industry to become more efficient in the future and to strive also to gain export markets where possible.

The domestic market for sugar is not growing. According to Statistics Canada, per capita use was the same in 1980 as it was in 1935, and has declined somewhat from the peak consumption years around 1970. There are a number of factors that explain the slow growth in the domestic sugar market. First, the proportion of children in the overall population is declining and this group is the major consumer of sugar and sugar-containing products. Sugar also has a low income elasticity of demand meaning that as income rises the demand for sugar stays much the same. Third, there is also increasing concern about health and nutrition. Finally, there has also been competition from corn sweeteners and such artificial sweeteners as aspartame for industrial usage.

If soft drink producers switch to the usage of high fructose corn syrup as a sweetener, as has happened in the United States, this major industrial user of sucrose will disappear. This will only occur, however, if HFCS is price competitive with sucrose for an extended period of time.

5. COMPETITIVENESS ASSESSMENT

The Canadian sugar processing industry has undergone significant rationalization in recent years, but fluctuating world prices and the wider availability of other sweeteners continue to apply pressure for greater efficiency and capacity reduction. The Canadian policy of securing raw sugar supplies cheaply on the open market gives the industry a substantial price advantage over our major international competitors. However, the complicated set of government-to-government arrangements that exists for sugar trading have restricted the freedom of international markets and limit export opportunities. Therefore,

although Canadian sugar refiners are generally as efficient as others in the world, exports have been severely curtailed, especially to the United States, because of protectionist measures in these markets.

Low international cane sugar prices make beet sugar production in many countries, including Canada, uncompetitive. As a result, there is pressure from Canadian sugar beet producers (and the corn sweetener industry) to establish a national sweetener policy and a price support program. The government has recently introduced a cost-shared stabilization program for sugar beet growers.

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Assistant Deputy Minister
Consumer Goods, Services and Resourcing Processing

Date: JUL 18 1986
JUIL

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

SUGAR PROCESSORS

PRINCIPAL STATISTICS	1980	1981	1982	1983	1984
Establishments	13	12	12	12	10
Employment	2570	2455	2338	2250	2150
Shipments ($ million)	770	859	688	642	661
Exports ($ million)	15	79	55	73	107
Domestic Shipments ($ million)	762	780	633	569	555
Imports ($ million)	32	34	23	29	34
Canadian Market ($ million)	794	815	656	597	589
Exports - % of Shipments	2.0	9.1	8.0	11.4	16.1
Imports -% of Domestic Market	4.0	4.1	3.4	4.8	5.8

REGIONAL DISTRIBUTION	ATLANTIC	QUEBEC	ONTARIO	WEST
Establishments - % of total	8	33	33	25
Employment - % of total	18	25	26	31
Shipments - % of total	18	25	26	31

FOREIGN TRADE		U.S.	EEC.	ASIA	OTHERS
Imports - % of total	1981	57	3	1	39
	1982	52	6	1	41
	1983	61	4	1	34
	1984	71	9	1	19
		U.S.	**EEC.**	**ASIA**	**OTHERS**
Exports - % of total	1981	5	0	0	95
	1982	57	0	0	43
	1983	93	0	0	7
	1984	96	0	0	4

MAJOR FIRMS

	LOCATION	OWNERSHIP
Redpath Sugars	Ontario	U.K/Canada
Lantic Sugar Limited	N.B., Ont.	Canadian
British Columbia Sugar Refining Co. Ltd.	B.C., Alta. Manitoba	Canadian
St. Lawrence Sugar (purchased by Atlantic Sugar Sept. '84)	Quebec	Canadian

DATE: May 1986

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

CONFIDENTIAL

COMPETITIVENESS PROFILE

CEMENT AND CONCRETE

1. STRUCTURE AND PERFORMANCE

a) Structure

The cement and concrete sector is comprised of three distinct and regionally oriented sub-sectors. The first, cement manufacturing, includes firms producing hydraulic cement. The second, concrete products, manufactures a wide-range of precast and prestressed products. The third, ready-mix concrete, involves the mixing and delivering of an intermediate product. Cement is the material that binds mineral aggregates, water and chemical admixtures to form concrete products.

All three sub-sectors are highly cyclical and seasonal businesses which depend on the level of construction activity. In 1984, the sector had shipments of $2.4 billion, exports of $179 million, imports of $26 million and employment of 20,000. Cement manufacturing accounted for 28 percent of the value of shipments in the sector, concrete products 28 percent and ready-mix concrete 44 percent.

The cement manufacturing sub-sector had shipments of $693 million in 1984. Exports amounted to $106 million or 15 percent of the value of cement shipments. Approximately 95 percent of our exports were to the U.S.A. Imports, which originated primarily from the U.S.A., supplied five percent of the Canadian market for cement worth $22 million. There were nine enterprises in 1984 employing 3,800 in 24 establishments. Most of the establishments employ between 100 and 200.

The top three cement companies account for 70 percent of production capacity. The two largest firms, Canada Cement Lafarge Ltd. and St. Lawrence Cement Inc., which are European-controlled, represent 54 percent of the sub-sector's production capacity. The third largest company, Genstar Cement Ltd., is Canadian-controlled and accounts for 16 percent of capacity. Canadian-controlled companies account in total for 40 percent of capacity.

Cement plants are frequently situated close to the source of raw materials (primarily limestone). There are exceptions, however, such as St. Lawrence Cement's plant in Mississauga, Ontario, which is situated in a major market area. Limestone and other materials are transported to Mississauga by ship from outlying areas.

Regionally, the cement manufacturing sub-sector is concentrated in Ontario and Quebec which have 38 percent and 27 percent respectively of Canadian production capacity. The Prairies have 21 percent of capacity, British Columbia nine percent and the Atlantic provinces five percent.

There is a high degree of vertical integration in the Canadian cement sub-sector, which is also highly capital intensive. The impact of vertical integration is particularly relevant at the regional level where the dominant cement firm is frequently also the leading ready-mix concrete manufacturer and/or the major concrete products producer.

The concrete products sub-sector shipped $672 million of products in 1984. Exports amounted to $73 million or 11 percent of the value of concrete product shipments. Imports accounted for only $4 million. Trade in this sub-sector is largely between Canada and the U.S.A. There were 429 establishments in 1983 employing 7,300.

There are a large number of companies in the concrete products sub-sector. Most of the companies are small independent manufacturers, but some are medium-to-large firms, many of which are controlled by the cement manufacturing sub-sector. A small, but significant number of the major companies in this sub-sector are foreign-controlled.

Concrete product plants are generally located near the market. Plants in this sub-sector are concentrated in Central Canada. In 1983, 43 percent of the concrete products establishments were in Ontario, 24 percent in Quebec, 14 percent in the Prairies, 12 percent in British Columbia and seven percent in the Atlantic provinces.

In 1984, the ready-mix concrete sub-sector had shipments of $1,078 million. There were 564 establishments in 1983 employing 8,400. The balance of this paper will not deal with this sub-sector, specifically, because international trade in ready-mix concrete is negligible.

Due to the low value-to-weight ratio, most cement and concrete products are sold within a five hundred kilometer radius of a given plant. Export shipments to more distant destinations, are made possible when low-cost water transportation is available or competition is sparse.

b) Performance

The Gross Domestic Product (GDP) for the cement manufacturing and concrete products sector (expressed in 1971 dollars) decreased slightly from $359 million in 1971 to $324 million in 1984. However, since 1983 the GDP for this sector has been increasing, reflecting the improvement in construction activity.

Exports, as a percentage of the value of shipments, in the cement manufacturing sub-sector have increased from 9.6 percent in 1973 to 15.3 percent in 1984. In comparison, the value of imports, as a percentage of the Canadian market, have risen from 1.8 percent in 1973 to 3.6 percent in 1984. In the concrete products sub-sector, exports, as a percentage of the value of shipments, rose from 6.8 percent in 1973 to 10.9 percent in 1984. The value of imports, as a percentage of the Canadian market, increase marginally from 0.2 percent in 1973 to 0.6 percent in 1984.

In the past decade the cement manufacturing sub-sector has substantially improved its productivity. This has been brought about by the introduction of larger and more efficient processing equipment and the reduction of energy and labour costs. In contrast, the concrete products sub-sector has been less successful in reducing costs.

The cement manufacturing sub-sector is financially healthy although profits are highly cyclical due to the close relationship of the other sub-sectors and construction activity. In the decade ending in 1983 the average net profit after tax on sales for the sub-sector was 9.2 percent compared to 2.4 percent for the manufacturing industry average. Cement manufacturers' debt-to-equity ratio has improved steadily as firms have repaid debt incurred to improve energy efficiency, increase capacity and acquire other companies.

The profitability in the concrete products sub-sector is substantially less than in the cement manufacturing sub-sector with a ten year average of 3.2 percent profit after tax on sales. Producers in this sub-sector have consistently maintained a high debt-to-equity ratio.

2. STRENGTHS AND WEAKNESSES

a) Structural Factors

The Canadian cement sub-sector is mainly domestically-oriented and represents only one percent of world production. However, since the 1960s Canadian exports have been an important factor contributing to the development of the domestic cement industry. Canadian cement manufacturers have built up a strong distribution network in the U.S.A., particularly in the eastern border states which lack sufficient local cement production capacity. Canadian and American cement manufacturers have world-scale plants and similar production costs. Therefore, the proximity to the border state markets is a key advantage for Canadian cement exporters.

The high degree of vertical integration in the Canadian cement sub-sector has also provided some competitive advantage in strengthening the financial base of Canadian firms. In general, vertical integration has been denied to the American industry by more stringent anti-trust legislation.

Strong foreign competition, fuelled by a world-surplus cement production capacity, makes it difficult for Canadian cement companies to compete in off-shore markets. Major cement exporters such as Spain, Greece and South Korea generally have lower production costs than Canada and usually have an advantage in shipping costs due to their closer proximity to overseas markets. On occasion, Canadian companies supply cement for projects sponsored by CIDA, which specify the use of Canadian cement.

To date, imports have not been a major threat to Canadian cement manufacturers. There is some concern, however, that off-shore cement exporters may be interested in developing markets in regions, such as Quebec or British Columbia which can be served by ocean vessels. The existing excess Canadian cement capacity situation along with the substantial cost of setting up a cement distribution organization and the high degree of vertical integration in Canada have, thus far, prevented this from happening.

Canadian concrete products manufacturers, particularly those manufacturing architectural and prestressed concrete products, have been very successful, through their entrepreneurial skills, in expanding their markets in the U.S.A. This has been done through competitive pricing, high quality products and comprehensive service. Architectural and prestressed concrete product manufacturers, unlike some of their American competition, provide a complete service including manufacturing, transportation and erection of their products on site.

b) Trade Related Factors

The Canadian and American MFN tariff on cement is zero, with the exception of some specialty cements which account for only a small proportion of trade. The Canadian tariff on concrete products in 1987 will be 8.0 percent while the American tariffs on concrete products will range from 4.9 to 21.0 percent with most Canadian exports at the lower end of the scale.

Canadian cement exporters are threatened by protectionist pressures in the United States directed toward the rising tide of imports. Eighteen American cement companies formed the American Cement Trade Alliance in 1985, with the stated purpose of lobbying for the passage and enforcement of protectionist legislation.

One of the non-tariff barriers (NTB) is the "Buy America" Act (1933) which provides a six percent preference to all American goods used in federally supported construction projects and applies to about four percent of American construction activity. Some states have similar legislation for state supported projects.

Another NTB was the Surface Transportation Assistance Act (STAA) which was a federal statute designed to assist highway construction. As originally passed in 1982 it prohibited the use of foreign cement and concrete products in projects receiving STAA funds. In practice, the Act tended to eliminate Canadian cement manufacturers from private projects as well, because contractors preferred to avoid storage complications and the associated costs in dealing with both American and Canadian cement firms. The Canadian industry was granted exemption from the Act in early 1984. There is currently legislation before Congress which would again eliminate Canadian cement and concrete products from federally-supported projects, and indirectly from many private projects.

The possibility of losing access to the American market is an important reason why some of the Canadian cement manufacturers have recently purchased American plants. Since the STAA legislation was first introduced three medium-size American cement plants have been bought by Canadian cement companies.

c) Technological Factors

The Canadian cement manufacturing sub-sector is modern and efficient by world standards. In comparison, the level of technology in the concrete products sub-sector varies widely. The larger companies usually have access to modern technology, but many of the small concrete product firms lack the financial resources to purchase new technology.

In recent years there has been a trend from the wet to the more energy efficient dry cement production process. Computer process control is also becoming a common practice in many of the cement plants. New technology, in this sub-sector, for the most part has been transferred from Europe and more recently Japan. Production technology is widely available and there are no obstacles to its continued importation. There is also design capability with several Canadian consulting engineering firms actively engaged in this business. New technology in the concrete products sub-sector is diverse and readily available in Canada, the United States or Europe.

The domestic cement manufacturing sub-sector has invested less than 0.5 percent of the value of shipments in research and development, but this level should increase with the recent establishment by Canada Cement Lafarge of a $4 million cement and concrete products research facility in Montreal. The center will be the focus of Lafarge's research and development for its operations throughout North America. In addition, the Canadian cement and concrete sub-sectors benefit from research and development conducted by the Portland Cement Association in the United States, which is funded by both the Canadian and American producers.

d) Other Factors

Historically, Canadian cement export volume to the U.S.A. has not been influenced significantly by exchange rate changes. However, should the value of the Canadian currency change significantly in comparison with its American counterpart it would alter the profitability of export shipments.

The concrete products sub-sector would definitely be more sensitive to changes in the Canadian/U.S. exchange rate. Orders are frequently for a specific project which are won or lost through a bidding process in which price is the most important factor.

The level of demand in both the cement and concrete products sub-sectors is dependent on construction activity. Changes in interest rates directly influence construction activity and would therefore, have an impact on these sub-sectors.

3. FEDERAL AND PROVINCIAL PROGRAMS AND POLICIES

Both the cement and concrete products sub-sectors have received a small amount of assistance through federal and provincial programs. Since IRDP assistance was initiated in mid-1983, approximately $2.9 million has been provided to about 30 companies.

4. EVOLVING ENVIRONMENT

The sector's prospects will be determined by the outlook for the construction industry. Forecasts for the sector predict moderate growth in the short-term and possibly a down-turn at the end of the decade. Some cement and concrete product markets in the eastern border states are expected to remain very strong. However, competition in the U.S. cement market could increase as new investment by foreign owners improves the competitive position of the American industry.

Properties of concrete products are continuing to improve in the areas of strength, durability, impermeability and corrosion resistance. However, concrete products face strong competition from alternative building materials including steel, aluminum, wood and plastics. Concrete products will probably maintain their market share, but substantial improvement in demand from new product applications is not foreseen.

5. COMPETITIVENESS ASSESSMENT

The domestic cement manufacturing sub-sector is competitive and is expected to remain so for the forseeable future in existing American markets where it is well entrenched. Canadian cement producers, however, currently are not able to compete successfully in off-shore markets where competition is keen and prices are extremely low. The threat of increased imports from low-cost cement producers in Europe and Asia remains.

The concrete products sub-sector has been successful in the American market and should maintain its competitive edge. Off-shore trade of concrete products is minimal.

Prepared by: Resource Processing Industries Branch
DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

Assistant Deputy Minister
Consumer Goods, Services and Resource Processing

MAY / MAI 15 1986

Date: _____

FACT SHEET

NAME OF SECTOR: Cement and Concrete **1980 SIC(s) COVERED:** 352, 354, 355

1. PRINCIPAL STATISTICS

	1971	1980	1981	1982	1983	1984	1985
Establishments	854	1,017	1,029	1,002	n/a	n/a	n/a
Employment ('000)	22.7	23.3	23.9	20.6	19.7	20.0	20.2(9 mos.)
Shipments ($ millions)	777	2,077	2,424	2,241	2,261	2,443	1,999 (")
(volume, e.g. tonne where applicable)							
Gross Domestic Product (Constant 1971-$ millions)	359	382	391	309	299	324	350 (")
Investment ($ millions)	109	336	353	306	190	194	204
Profits After Tax ($ millions)	n/a	181	149	151	75	n/a	n/a
(% of sales)	n/a	7.4	5.2	5.8	3.1	n/a	n/a

2. TRADE STATISTICS

	1971	1980	1981	1982	1983	1984	1985
Exports ($ millions)	26	119	119	131	132	179	n/a
Domestic Shipments ($ millions)	751	1,958	2,305	2,110	2,129	2,264	n/a
Imports ($ millions)	3	22	60	24	25	26	n/a
Canadian Market ($ millions)	754	1,980	2,365	2,134	2,154	2,290	n/a
Exports as % of Shipments	3.4	5.7	4.9	5.9	5.8	7.3	n/a
Imports as % of Domestic Market	0.4	1.1	2.6	1.1	1.1	1.1	n/a

Source of imports (top 4)		U.S.A.	E.E.C.	JAPAN	OTHERS
% of Total	1981	97.7	0.5	1.8	-
	1982	98.0	0.4	1.5	0.1
	1983	98.7	0.4	0.9	-
	1984	97.9	1.4	0.8	-

Destination of exports (top 4)		U.S.A.	E.E.C.	JAPAN	OTHERS
% of Total	1981	96.3	--	-	3.7
	1982	88.9	0.2	--	10.9
	1983	96.0	0.4	-	3.6
	1984	98.3	0.1	--	1.6

— Indicates small amount of Trade.

3. REGIONAL DISTRIBUTION - Average over the last 3 years

	Atlantic	Québec	Ontario	Prairies	B.C.
Establishments - % of total	x	x	x	x	x
Employment - % of total	x	x	33.1	x	x
Shipments - % of total	x	x	32.8	x	x

x Not available at this level, see individual SIC Fact Sheets.

4. MAJOR FIRMS

Name	Ownership	Location of Major Plants	Concentration (% of Domestic Cement Capacity)
Canada Cement Lafarge Ltd.	France	Canada-wide	32
St. Lawrence Cement Inc.	Switzerland	Quebec/Ontario	22
Genstar Cement Ltd.	Canada	Western Canada	16
St. Marys Cement Ltd.	Canada	Ontario	10
Lake Ontario Cement Ltd.	Canada	Ontario	9

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

COMPETITIVENESS PROFILE (REVISED)

CHEMICAL SPECIALTIES

(PLEASE SUBSTITUTE FOR PREVIOUS DOCUMENT)

DECEMBER 31, 1986

DRAFT - PROJET

Revised

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

COMPETITIVENESS PROFILE

CHEMICAL SPECIALTIES

1. STRUCTURE AND PERFORMANCE

Structure

The Chemical Specialties sector includes a number of subsectors.

Three of the major subsectors are (i) soaps, detergents and cleaning compounds, which serve the industrial, institutional and consumer markets, (ii) printing inks and iii) crop protection chemicals used by the agricultural industry and the consumer and industrial pest control markets. Together these three subsectors account for approximately 54 per cent of the value of shipments of the chemical specialties industry. The balance of the sector, though representing a substantial portion of the value of total shipments, is made up of a vast number of products such as polishes and waxes, water treatment chemicals, adhesives and cements, caulking and sealing compounds, oil and gas production chemicals, flame-retardants, leather, textile and paper chemicals, transportation chemicals, photographic film and chemicals, reagents, anti-oxidants, fuel & oil additives, heat-transfer media, and many others.

The sector comprises approximately 550 establishments distributed geographically as follows: Ontario - 52 per cent, Quebec - 27 per cent, West - 18 per cent and Maritimes - 3 per cent. Major subsectors have a geographical distribution similar to that of the industry and this distribution generally reflects market location.

The chemical specialties sector employs approximately 23,000 persons. Its shipments in 1985 were valued at $3.8 billion and exports at $337 million. The total Canadian market is $4.9 billion, of which $1.4 billion is imported.

The soaps, detergents and cleaning compounds subsector consists of 128 establishments, owned by approximately 80 firms. Shipments in 1985 were $1.4 billion, and employment was 8100. Multinationals account for over 90 per cent of the shipments.

The printing ink subsector consists of 59 establishments owned by approximately 30 companies with domestic shipments of $244 million in 1985. Only one of the major firms is Canadian-owned. This industry subsector employs 1830 persons.

The crop protection chemical subsector is made up of approximately 20 companies. The major firms are all subsidiaries of foreign-owned multinationals. This subsector employed approximately 1500 in 1985 and shipments totaled approximately $390 million. The major portion of this market in Canada, estimated at $800 million in 1985, is served by imports.

The sector's companies include some large foreign-owned multinationals and their affiliates, many of which serve the domestic market primarily, and have limited scope for export. Smaller corporations, because most of them are Canadian-owned, and are not constrained by parent subsidiary relationships, offer greater opportunities for increasing export activity. Canadian sales of major foreign-owned companies vary from $100 to $600 million while Canadian owned companies are small to medium-sized, with sales ranging from $1 million to $50 million. It is estimated that as much as 85 per cent of shipments originate from subsidiaries of foreign-owned firms.

Some rationalization occurs between a few multinational companies with plant locations in both the United States and Canada and though this does not as yet represent a significant portion of the trade value, there would seem to be significant potential for such rationalization. Most of the larger firms are vertically and horizontally integrated to varying degrees. Some are fully integrated from the production of a number of basic chemicals through to the packaging of a number of finished products for industrial and consumer markets, while others are more restricted in their activity. Smaller firms tend to concentrate on producing a limited number of products for fewer markets. Some of the companies in this industry sector not only manufacture chemical products but also perform services which utilize the chemical products that they make. An example would be a company manufacturing cleaning and maintenance chemicals, and also providing a janitorial service that utilizes these chemical products.

Performance

The value of shipments for soaps, detergents and cleaning compounds increased at a compounded real annual rate of 5.7 per cent between 1975 and 1985, while that for other chemical specialties increased at a real rate of 2.5 per cent during the same period. The growth trend for all manufacturing industries was 2.5 per cent per year in the 1974-84 period.

Exports of chemical specialties represented 8.8 per cent of total shipments in 1985. This ratio has remained fairly constant over the past 10 years. International trade in the products of some of the subsectors is limited by the fact that service is a high value component of the product. This is true for products such as printing inks, water treatment chemicals, oil and gas production chemicals and others. The United States is the destination of approximately 60 per cent of Canadian exports, and the EEC of 20 per cent.

Imports supply approximately 28 per cent of the total Canadian chemical specialties market, and this ratio has remained relatively unchanged over the ten-year period. Approximately 88 per cent of imports originate in the United States. Almost one-third of the imports is made up of crop protection chemicals, where almost all the active ingredients and approximately two-thirds of the formulated products are imported (total value of approximately 400 million).

2. STRENGTHS AND WEAKNESSES

a) Structural

(i) The soaps, detergents and cleaning compounds industry is in large part consumer-oriented. As much as 25 per cent of the selling price represents advertising costs. While not recession proof, this industry has remained comparatively healthy during periods of economic downturn.

The printing ink subsector serves the printing industry and is tied directly to the health of the printing industry.

Crop protection chemicals, while representing a very small percentage (2 - 3 per cent) of crop production costs, are said to account for as much as 25% of the yields. While they are considered an indispensable farming tool, factors impacting on the agricultural sector such as prices, weather, acreage changes etc., have a direct effect on the use of crop protection chemicals.

While a sector-wide Canada/United States cost comparison is not practical, companies in the chemical specialties industries in Canada often operate on a smaller scale than their counterparts in the United States and costs, such as raw material and transportation

costs are generally higher in Canada, while labour costs are comparable. Productivity is higher in the United States, particularly in those subsectors where comparatively much larger markets result in longer production runs. Canadian markets are generally smaller in $ value but geographically larger. This results in higher transportation and marketing costs, and also discourages imports in some of the subsectors.

For large, integrated companies such as the major producers of soap, detergents and cleaning compounds, cost disadvantages appear to be minimal, as these companies operate their plants on a scale similar to those in the United States.

In general terms, the sector participates only to a limited degree in foreign markets. Given the sector's share of the domestic markets, and the fact that it has traditionally been able to maintain this share, it appears that cost disadvantages related generally to smaller scale have not been critical to the ability of the Canadian chemical specialties industry to compete successfully at home against products originating in the United States. Import duties, the service requirement for some of these products, favourable exchange rates and labelling requirements offset the cost disadvantage. Similar factors (except for the exchange rate) inhibit the ability of many Canadian companies to export. While imports are significant ($1.4 billion or 28 per cent of the Canadian market), they can be accounted for in large part by crop protection chemicals, various highly specialized products and other products for which the level of demand is not sufficient to justify Canadian production.

b) Trade Related Factors

The Canadian tariff rate applicable to most of the products of this sector is approximately 12.5 per cent, in many cases higher than in the United States. For example, the United States tariff on printing inks is 1.8 per cent compared to 13.1 per cent for Canada while the tariff rates applied to detergents entering the United States vary from 1.3 per cent to 7.7 per cent compared to a Canadian rate of 12.8 per cent for regular detergents and 19.4% for automatic dishwashing detergents.

The Canadian tariff, which has been reduced over the years, was originally a major factor in the decisions of foreign companies to locate plants in Canada. A major exception to this is the crop protection chemicals subsector. These products enter Canada duty free, while most other industrialized countries apply tariffs. Consequently, much of Canada's requirements are imported and virtually no basic active-ingredient chemicals are manufactured in Canada. The United States tariff rates for these products vary from 6.8% to 13.5%, while EEC tariffs rates are 7.6%.

There are no major non-tariff barriers. The Pest Control Products Act has been described in some instances as a non-tariff barrier in that crop protection chemicals, not registered under the Act, are prohibited from entering Canada even though they may be identical to products already registered for use. While the registration process may be costly and time consuming, registration is not restricted to domestic manufacturers and most industrialized countries have similar legislation and regulations in place in order to insure safety in the manufacture and use of these products.

While the European Economic Community accounts for approximately 18% ($26 million) of the chemical specialties sector exports, this total is made up of a large number of products which when viewed individually, are not significant.

c) Technological Factors

The Canadian chemical specialties industry is not at a significant technological disadvantage, generally speaking, to the industry in the

United States. International firms make their technology readily available to their Canadian subsidiaries. The smaller Canadian and regional firms concentrate on specific markets and are able to develop products based on individual customer needs. In many of the subsectors, especially in the area of consumer products, the level of research and development is not the major factor. Marketing is the principal activity related to the commercial success of a new product. Environmental and health considerations may be a key motivation for new developments. For example, the need to reduce the use of solvent-based products in the printing industry has led to the development of infra-red and ultra-violet curable inks, and water-based inks. As another example, new developments are occurring in pest control methods where biological-control agents and genetic engineering are beginning to impact on the crop protection chemicals industry. The use of Bacilles Thuringiensis (BT) for the control of the spruce bud worm has caused a reduction in the use of chemicals. Where these types of controls are not yet practical or feasible, safer, less persistent chemicals are being developed in order to reduce the risks and to increase the benefits associated with the use of these products.

d) Other Factors

The favourable exchange rate has not had a major impact on the level of investment and trade balance of the chemical specialties industry. The dominance of the multinationals and the adverse effect of the exchange rate on the cost of imported raw material components would appear to have offset the exchange rate advantage.

3. FEDERAL AND PROVINCIAL PROGRAMS AND POLICIES

Government policy with respect to crop-protection chemicals, that, as farm inputs, they should be available at the lowest possible price, has been the chief influence on the high importation level of these products, whether imported as finished products or as active ingredients. Canadian manufacturers of crop protection chemicals have petitioned the government in the past, with limited success, to have the tariff harmonized in order to encourage the manufacture of active-ingredient chemicals in Canada. There are no federal government financial assistance programs that are specific to the chemical specialties subsector nor to any of its subsectors.

4. EVOLVING ENVIRONMENT

A study of the chemical specialties industry in the United States completed in 1984 by Strategic Analysis Inc., of Reading, Pennsylvania, projected that this industry as a whole would continue to grow faster than the gross national product through to 1990, i.e. 5 per cent per year compared to 3-4 per cent for the GNP. Some specialty chemicals are maturing, however, and may not maintain this growth. Projected low-growth markets include crop-protection chemicals at 3 per cent, specialty lubricants at 2 per cent, industrial/institutional cleaners at 3 per cent, metal-finishing chemicals at 3 per cent, biocides at 4 per cent, paper chemicals at 4 per cent, and printing inks at 3 per cent. Based on past performance, Canadian markets for these products are expected to show similar growth patterns.

The same study indicated higher than average growth rates for chemicals for the electronic industry - 13 per cent, photographic chemicals - 7 per cent and specialty surfactants - 6 per cent. These high growth markets represent approximately 20 per cent of the specialties market at the present time but are forecast to grow to 24 per cent by 1990. Some segments of specialty chemicals, though not showing major overall growth, should have high growth areas. For example, the household and garden portion of the crop-protection chemicals subsector will probably continue to show real growth of approximately 9 per cent per year. While the study also projected a 7 per cent rate of growth for oil field chemicals, this projection is no longer valid in view of the present depressed state of the oil and gas production industry.

By comparison with commodity-chemical manufacturing sectors, the chemical specialties sector is viewed as one offering profitable opportunities. The planned entry into this industry of firms whose strength is concentrated in the commodities is evidence that the chemical specialties sector will benefit from increased investment in the future.

An area of opportunity appears to be in oil and gas production where new enhanced-recovery techniques, using a number of chemical specialties, are being developed. Present technology is said to leave at least half of the known oil reserves in the ground. This would now appear to be a longer term opportunity given the present state of the user industry.

Environmental legislation at several levels of Government is also generating opportunities for specialties. The legislation dealing with industrial and municipal effluents, drinking water quality, and other issues is resulting in increased demand for products such as biocides and synthetic flocculants, e.g. polyacrylamide resins. Major sewage treatment plants, such as the one being constructed for the Montreal Urban Community, the pulp and paper industry, mining and oil production all require the use of these chemicals products. New or expanded facilities to meet the expected increase in demand for both dry and liquid polymers are being planned. The market for dry polymers is estimated at approximately $14 million, of which imports make up 100 per cent at the present time (early 1986); although this situation should begin to change in the next few years.

Wood preservatives appear to be another area of opportunity. Concerns over the presence of dioxins has resulted in withdrawal of approval of pentachlorophenol-based products for use on lumber directed to the residential market. Its replacement, chromated copper arsenate (CCA) is not manufactured in Canada. The value of the Canadian market is estimated at $14 million. CCA is composed of arsenic oxide, chromic oxide and copper oxide. These raw materials are available in Canada and therefore there seems to be an opportunity for this product to be made in Canada.

5. COMPETITIVENESS ASSESSMENT

With some exceptions, this industry sector does not compete internationally, and is in place primarily to serve the Canadian market. Because of the higher costs incurred in producing a given range of products for a much smaller market, Canadian firms are not cost competitive with their United States counterparts. Nevertheless, because of tariff barriers and the fact that this sector is dominated by subsidiaries of foreign firms, which, for the most past, are based in the United States, this industry has been able to maintain its share of the Canadian market. The crop protection chemical subsector does not conform to this assessment because of a long established tariff differential which allows these chemicals to enter Canada duty-free, while other industrialized countries, including the United States, impose significant tariffs. This has resulted in an increasing share of the Canadian market for these products being served by imports.

Prepared by: Resource Processing Industries Branch
DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

Original Signed By
R. H. McGEE
Original Signé Par

Assistant Deputy Minister
Consumer Goods, Services and Resource Processing

Date: December 31, 1986

FACT SHEET

NAME OF SECTOR: Chemical Specialties **SIC(s) COVERED:** 376 & 379 (1980 Basis)

1. PRINCIPAL STATISTICS

	1971	1980	1981	1982	1983	1984	Estimate 1985
Establishments	508	538	555	559	540	544(e)	-
Employment	21,610	24,001	25,545	24,462	22,940	22,938(e)	-
Shipments ($ millions)	691.8	2,536.9	3,018.8	3,021.9	3,355.3	3,539.6	3,843.2
Gross Domestic Product (Constant 1971-$ millions)	298.9	478.7	496.1	470.8	512.6	502.9	535.1
Investment ($ millions)	19.6	119.2	161.3	127.1	82.2	116.4	153.4
Profits After Tax ($ millions)	-	302.2	109.7	180.6	221.1	187.8	-

2. TRADE STATISTICS

	1971	1980	1981	1982	1983	1984	1985
Export ($ millions)	35.2	205.5	228.9	267.7	279.1	290.1	337.1
Domestic Shipments ($ millions)	656.2	2,331.4	2,709.9	2,754.2	3,076.2	3,249.5	3,506.1
Imports ($ millions)	194.9	926.2	1,008.1	1,042.6	1,163.8	1,394.7	1,390.9
Canadian Market ($ millions)	851.5	3,257.6	3,798.6	3,796.8	4,240.0	4,644.2	4,897.0
Exports as % of Shipments	5.1	8.1	7.6	8.9	8.3	8.2	8.8
Imports as % of Domestic Market	22.8	28.4	26.5	27.5	27.4	30.0	28.4
Canadian Share of International Market	-	-	-	-	-	-	-

Source of imports		U.S.	E.E.C.	ASIA	OTHERS
	1982	87.0	9.3	1.5	2.2
	1983	88.2	8.5	1.3	2.0
	1984	87.8	9.2	1.1	1.9
	1985	84.1	8.8	3.8	3.3

Destination of exports		U.S.	E.E.C.	ASIA	OTHERS
	1982	61.6	22.5	3.2	12.7
	1983	62.9	18.7	1.0	17.4
	1984	63.1	17.8	1.2	17.9
	1985	72.6	12.3	1.9	13.2

3. REGIONAL DISTRIBUTION - Average over the last 3 years

	Atlantic	Québec	Ontario	Prairies & B.C.
Establishments - % of total	2.9	26.6	52.2	18.3
Employment - % of total	.3	27.3	64.0	8.4
Shipments - % of total	.2	20.9	69.9	9.0

4. MAJOR FIRMS

Name		Ownership	Location of Major Plants	Concentration (% of domestic market)
Proctor & Gamble	- Soaps, Detergents & Cleaning Compounds	U.S.	Ont.	
Lever Detergents	- Soaps, Detergents & Cleaning Compounds	U.K.	Ont.	
Colgate Palmolive	- Soaps, Detergents & Cleaning Compounds	U.S.	Ont.	80% of Domestic Market - Soaps, Detergents and Cleaning Compounds subsector
C-C-L Industries	- Miscellaneous Chemical Specialties	Can.	Ont.	
Witco	- Soaps, Detergents & Cleaning Compounds	U.S.	Ont.	
Diversey Wyandotte Inc.	- Cleaning Compounds & Others	Can.	Ont.	
Dubois Chemicals	- Industrial & Institutional Cleaning Chemicals	U.S.	Ont.	
G.H. Wood & Co.	- Industrial & Institutional Cleaning Chemicals	Can.	Ont.	
Eli Lilly	- Crop Protection Chemicals	U.S.	Alberta	75% of Domestic Market - Crop Protection Chemicals Subsector
Monsanto	- Crop Protection Chemicals	U.S.	Quebec	
Ciba Geigy Canada	- Crop Protection Chemicals	Switzerland	Ont.	
Chipman Inc. - Division of C-I-L	- Crop Protection Chemicals	U.K.	Ont.	
Hoechst Canada	- Crop Protection Chemicals	Germany	Saskatchewan	
Dow Canada	- Crop Protection Chemicals	U.S.	Alberta	
Pfizer	- Crop Protection Chemicals	U.S.	Ontario	
Chemagro (Bayer)	- Crop Protection Chemicals	Germany	Ontario	
Union Carbide Cda.	- Crop Protection Chemicals	U.S.	Alberta	
Uniroyal	- Crop Protection Chemicals	U.S.	Ontario	
Sinclair Valentine	- Printing Inks	U.S.	Ont.	50% of Domestic Market - Printing Inks Subsector
Canadian Fine Colours	- Printing Inks	Can.	Ont.	
General Printing Ink Corp.	- Printing Inks	U.S.	Ont.	
Inmont Canada Inc.	- Printing Inks	Germ.	Ont.	

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

May 12, 1986

COMPETITIVENESS PROFILE

CLOTHING SECTOR

1. STRUCTURE AND PERFORMANCE

a) Structure

The clothing industry comprises firms which make apparel for consumers as well as industrial and institutional users. Shipments were estimated at $5 billion in 1985 and total employment at 103,000. There are an estimated 2,368 establishments in the industry of which about 500 are contractors. The major products include women's, men's and children's wear, furs, leather apparel, foundation garments and a wide range of knitted clothing (t-shirts, underwear, gloves, sweaters and hosiery).

While there is a growing trend for garment manufacturers to get actively involved in retailing, there is little backward integration in the industry with virtually all firms purchasing yarns and fabrics from upstream mills. As such, the clothing industry continues to be an important customer of the Canadian textile industry, utilizing about 40% of its output. These trends mirror those in the clothing industries of other developed countries.

Employment within the major sub-sectors of the industry is distributed as follows: women's wear (35,000), foundation garments and knitting mill products (14,000), men's fine clothing (11,000), pants (9,500), children's wear (7,300), leather apparel (5,000), furs (2,400). Of the 103,000 persons employed in the industry 77% are women. In addition to employment reported in published data, there are numerous homeworkers, estimated at about 30,000 in Quebec alone. An important proportion (40%) of workers in the industry have union affiliation. In recent years there have been few extended disruptions or other major confrontations between labour and management.

The industry is characterized by small establishments. The large establishments with 100 employees or more (11% of establishments) provide about half of the jobs and the value of shipments. Wages account for 24% of shipment value versus 13% for all manufacturing. The high labour component in the production process is a major factor affecting the industry's overall competitive position.

The industry is concentrated in Quebec (around 60% of employment), Ontario (28%) and Manitoba (8%) and is located primarily in large urban centres such as Montreal, Toronto and Winnipeg. In particular, clothing production accounts for 18% and 14% of all manufacturing employment in Montreal and Winnipeg, respectively. Geographic concentration is a phenomenon of the clothing industry world wide where manufacturing tends to be close to major markets and pools of semi-skilled labour.

Ownership is predominantly Canadian with foreign-owned companies accounting for less than 1% of the total firms. However, foreign-owned firms are larger than average and account for an estimated 10% of total industry shipments. Although there have been some takeovers of Canadian firms over the years, many of the foreign-owned enterprises are part of multinationals which have established their own production facilities in Canada to overcome high tariff barriers. These firms tend to concentrate production in standardized large volume products such as jeans, shirts, foundation garments and underwear.

b) Performance

The apparent Canadian market (ACM) in units advanced by 10% between 1979 and 1985. Clothing imports now originate from at least 80 countries with the preponderance (about 90%) from low-wage sources. Despite high tariff

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protection (25%) and bilateral restraint arrangements with 21 low-wage suppliers clothing imports have increased their share of the apparent Canadian market in volume terms(1) from 32% in 1979 (the year following the lifting of the global import quota) to an estimated 42% in 1985. Canadian manufacturers did not benefit in a major way from the overall market growth during this period, with net domestic shipments during 1979-85 falling by about 6% (an estimated 335 million units in 1985 compared to 357 million units in 1979).

As a result of the increased import penetration, employment declined by some 18,000 workers since 1979.

Exports are not a major factor in the overall industry and in real terms, have remained relatively unchanged during the period 1979-1984 accounting for an average of around 6% of the overall Canadian shipments. Export opportunities are concentrated in fur apparel and outerwear which in recent years have accounted for 45% and 20%, respectively, of total industry exports. In the case of furs, exports have accounted for 42% (in units) of this industry sub-sector's production and in the outerwear sub-sector about 20%. The United States is Canada's primary export market accounting for around 80% of all clothing exports.

The clothing industry has generally maintained its profit position, operating costs and long term debt/equity position over the past ten years. The long term debt to equity ratio in clothing (9.5% of equity in 1983 compared to 33.4% for all manufacturing) has remained relatively low in view of its lower fixed assets and reliance on short term credit. After tax profit on capital employed by the clothing industry over the period 1979 to 1983 has remained higher than that of all manufacturing (12.5% compared to 7% for all manufacturing).

2. STRENGTHS AND WEAKNESSES

a) Structural

As indicated earlier, the low degree of concentration in the industry is similar to the industry structure in other developed countries. Opportunities for significant economies of scale in the industry are limited primarily by high labour intensity of production although in the case of standardized products such as pants and shirts, there are certain scale economies to be gained. The disadvantages of fragmentation are counter balanced to some extent as the small scale of many firms allows for flexibility in serving customer needs where style and quick response to fashion trends in a competitive market place are important. For example, the fur garment industry, despite its high degree of fragmentation, supplies a relatively large proportion of total industry shipments by value and produces fashionable high quality garments which are very competitive world-wide.

The industry historically has been characterized by entrepreneurial management where the owner, usually with the help of a plant manager, performed all the functions required for the day-to-day operations of the firm. During the 1960s and 1970s most firms did not have specific expertise in production, marketing and finance. In recent years, however, with the introduction of some new technologies more and more firms have introduced specialized management and this process is expected to accelerate as technological developments continue to evolve. The quality of management, which is equal to that of other developed countries, has helped to improve this industry's competitiveness against imports but this factor has not been sufficient to offset the wage cost advantage favouring developing country suppliers.

(1) Volume data available only for items under quantitative restraint; represents 60% to 65% of total industry shipments in value terms.

... 3

Unit labour costs were about 10% higher in Canada than in the U.S. in 1983 (the latest year for which comparable data are available) indicating that the cost of labour to produce the same "unit" of clothing in that year was higher in Canada.

b) Trade Related Factors

Given its high labour intensity, the sector in developed countries is very vulnerable to import competition from low-wage sources. In order to have orderly growth in international trade, arrangements governing imports of textiles and clothing such as the current Multi-Fibre Arrangement (MFA) date back to 1961 (around 50 countries are signatories to the MFA). Canada's first experience with clothing import restraints dates back to the early 1960s when arrangements were negotiated on a limited range of textile and clothing products from a few Asian sources. It was not until the mid 1970s that Canada faced rapidly accelerating clothing imports from low-wage countries and, on the basis of recommendations by the Textile and Clothing Board (TCB), imposed unilateral global quotas on virtually all clothing products from November 1976 to the end of 1978. In its recent report, the Textile and Clothing Board estimates that an immediate removal of all current import restraints would result in the loss of 22% to 31% of the industry's jobs.

The MFA expires in July 1986 and Canada's bilateral restraint agreements under it lapse at the end of this year. Discussions to renew the MFA are underway and renegotiation of the restraint agreements will commence in the near future. Like the U.S., Canada's objectives in both of these exercises are to restrict the overall growth of low-cost imports and, in particular, to avoid sharp year-to-year increases.

A growing number of clothing manufacturers are attempting to adapt to the volatile competitive environment by reducing the production of uneconomical lines, and to meet their customers' needs, are importing an increasingly significant portion of their shipments. It is estimated that 22% of apparel imports are now accounted for by domestic manufacturers. There is evidence that this trend is also occurring in other developed countries.

Canada maintains high tariffs (an average of 25% for clothing versus 9% for all manufacturing). The average U.S. rate of duty on clothing is 22.5% and in the EEC is 13.5%. In the face of strong competition from low labour rate countries, the Canadian tariff alone does not provide sufficient protection against imports from these sources. However, the tariff has been sufficient to prevent an influx of imports from developed countries such as the U.S. and the EEC.

Fabrics account for 35-40% of the Canadian industry's value of shipments and about half of the fabrics required are imported (almost evenly split between developed and low-wage countries). The effect of the high tariffs on fabrics and yarns (21.5% fabrics and 13% yarns) is to increase manufacturing costs for Canadian clothing manufacturers, other than fur garment producers, by up to 10%.

The impact of increasing imports has forced manufacturers to become more specialized, to improve their quality and fashion content in order to maintain their viability. These factors have subsequently played a role in developing a market-oriented approach to selling goods in Canada which has also helped certain manufacturers in export markets. The export efforts of manufacturers have been hampered by the anti-fur movement in the EEC, by barriers such as the U.S. tariff which provides for higher duties on "ornamented" clothing (a term which is interpreted with a wide degree of discretion by U.S. customs officials) and to some extent by the U.S. country of origin regulations.

The potential for trade liberalization with the United States in textiles and clothing was reviewed in 1984 by the Textile and Clothing Board. The Board found that Canadian textile and clothing industries are generally at

... 4

a competitive disadvantage to their U.S. counterparts under prevailing trade conditions. The report noted that Canadian producers are at a marked disadvantage in the manufacture of standardized products such as jeans, sport shirts, t-shirts and pyjamas but have a slight advantage in products with more of a fashion content such as ladies' sweaters, co-ordinates and dresses, sportswear and men's fine clothing.

The clothing sub-sectors, where Canada is indicated by the Board as having a slight advantage, account for the bulk the industry's overall shipments and since these are fashion oriented products there may be good prospects for medium term market growth. However, no mention was made in the report of the export opportunities for Canadian fur apparel, high fashion and outerwear where considerable potential exists for expansion under a free trade scenario. Nor did the Board's analysis take into account the fact that Canadian producers could be in the position to take advantage of the economies of scale offered by the large U.S. market.

c) Technological Factors

New technology involving computer assisted equipment is being adopted by the clothing industry at the early production stages (pattern making and cutting) and important progress has been made toward reducing material handling costs. Although there has been some specialization of functions and the application of micro-electronics to sewing, it continues to be a labour intensive process. The rate at which such technology is being adopted compares favourably with the modernization efforts of manufacturers in other developed countries. However, little research into the development of new technology is performed in Canada at the present time.

The application of new technologies (e.g. CAD/CAM, robotics, micro electronics, lasers) to clothing production offers the potential to change the industry gradually into a more capital intensive one where developed countries can offset to some extent the wage advantage enjoyed by low-cost countries. The cost of the new technology, however, is expected to be outside the financial reach of the typical small clothing firm in Canada and its adoption will likely coincide with the industry restructuring to achieve greater scale economies.

3. FEDERAL AND PROVINCIAL POLICIES

While maintaining import restraints and high tariffs the federal government has sought to reduce the industry's reliance on such measures through financial assistance for rationalization and restructuring. Under a five-year program terminated at the end of March 1986, the Canadian Industrial Renewal Board has committed a total of $101.1 million in financial assistance to clothing firms to improve their competitiveness. In addition, some $70.7 million of assistance has been provided under Labour Canada's Labour Adjustment Benefit Program covering pre-retirement benefits for older textile and clothing workers. Also, assistance under CEIC's regular and special programs has amounted to $51.6 million to textile, clothing and footwear workers.

4. EVOLVING ENVIRONMENT

The trend in international trade in apparel products has been for low-cost countries to increase their share of world exports. Low-cost and state-trading countries have put considerable emphasis on developing clothing industries primarily geared to exporting. With comparative labour cost advantages these countries have put increasing competitive pressure on the domestic industries of developed countries. Newly industrialized countries (NICs) such as Hong Kong have also upgraded their products and are now competing with medium to higher priced merchandise produced by developed countries.

For the next few years, modest annual growth of some 1.5% is projected in the Canadian market. Productivity growth is also expected to average 1.5%

... 5

per year. Thus, unless the regime of import restraints is tightened to restrict growth in low-cost imports to about the rate of market growth, it is just a matter of time before industry employment declines to the "core" level of about 70,000 to 80,000 projected by the TCB in the absence of restraints. It is considered that the remaining core firms, because of proximity to markets, good production flexibility and design capability, would be able to compete effectively against low-cost countries without special measures of protection.

5. COMPETITIVENESS ASSESSMENT

A large segment of Canada's clothing industry is not capable of competing against imports from low-cost countries without special measures of protection. Manufacturers' efforts to improve their competitiveness have been moderately successful but in this regard they are in the same situation as their counterparts in other developed countries.

Canada's current import regime has not prevented a decline in the sector's market share in favour of imports from low-wage countries over the past decade. There have been large fluctuations in these imports created by under filling of the quota in a given period, followed by precipitous increases in the following year. The large fluctuations and the sudden emergence of new, unrestrained suppliers have created uncertainty for the Canadian industry and have led to pressure on the government to adopt a more restrictive import regime. A further substantial shrinkage of the industry is inevitable if low-cost imports continue to be allowed to increase at rates which are considerably in excess of the growth in the Canadian market.

Under the current import regime, the industry competes successfully in the domestic market with imports from developed countries, generally focussing on products in the medium to high price range. As well, Canada's fur industry can compete successfully on a world-wide basis. It should be noted, however that, although important export opportunities exist, these are hampered to some extent by trade barriers in developed countries.

Prepared by: Textiles, Clothing and Footwear Branch
DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

Assistant Deputy Minister
Consumer Goods, Services and Resource Processing

Date: MAY / MAI 15 1986

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

FACT SHEET May 1986

NAME OF SECTOR: CLOTHING SIC(s) COVERED: MAJOR GROUP 24 *

1. PRINCIPAL STATISTICS

	1971	1980	1981	1982	1983	1984	Estimates 1985
Establishments	2,466	2,379	2,350	2,368	2,368	N/A	N/A
Employment	119,932	113,984	113,463	106,907	110,000	102,000(3)	103,000(3)
Shipments ($ millions)	1795.6	4503.3	4777.4	4620.1	4891.1	5195.2	5401.1
(million of units) (2)	N/A	379.1	373.0	335.5	338.5	345.6	335.0
Gross Domestic Product (constant 1971-$ millions)	782.4	954.5	952.8	872.5	920.6	962.6	969.7
Investment ($ millions)	17.1	47.1	47.8	29.1	35.0	38.4	43.8
Profits After Tax ($ millions)	22.6	136.6	118.0	78.2	131.9	N/A	N/A
(% of income)	N/A	3.8	2.9	1.2	3.4	N/A	N/A

2. TRADE STATISTICS

	1971	1980	1981	1982	1983	1984	1985
Export ($ millions)	83.8	231.7	265.6	243.4	221.2	291.3	329.5
Domestic Shipments ($ millions)	1711.8	4271.6	4511.8	4376.7	4669.9	4903.9	5071.6
Imports ($ millions)	200.1	826.3	1005.1	1034.5	1257.0	1683.0	1747.0
Canadian Market ($ millions)	1911.9	5097.9	5516.9	5411.2	5926.9	6586.9	6818.6
Exports as % of Shipments	4.7	5.2	5.6	5.3	4.5	5.6	6.1
Imports as % of Domestic Market (Value)	10.5	16.2	18.2	19.1	21.2	25.6	25.6
Imports as % of Domestic Market (units basis)	N.A.	27	31	33	33	41	42

Source of imports % Share of Total Imports		U.S.	E.E.C.	Other Developed	Low Cost
	1981	13	9	3	75
	1982	12	9	3	76
	1983	10	10	2	78
	1984	8	11	3	78

Destination of exports % Share of Total Exports		U.S.	E.E.C.	Other Developed	Low Cost
	1981	48	23	22	7
	1982	61	17	17	5
	1983	73	11	11	5
	1984	81	6	9	4

3. REGIONAL DISTRIBUTION - 1983

	Atlantic	Quebec	Ontario	Prairies	B.C.
Establishments - % of total	1	66	25	5	3
Employment - % of total	(x)	58	30	(x)	(x)
Shipments - % of total	(x)	61	26	(x)	(x)

(x) Confidential data

(1) Based on 1980 SIC.
(2) Volume data available only for items under quantitative restraint; represents 60% to 65% of total industry shipments in value terms.
(3) Statistics Canada Catalogue Number 72-002 adjusted to 1980 SIC base.

... 2

4. MAJOR FIRMS

Name	Ownership	Location of Major Plants	Concentration % of domestic market)
1. Tan Jay International	CDN (MNC)	Winnipeg, Man. Toronto, Ont. North Bay, Ont.	N/A
2. Dales Inc.	CDN	Montreal, Que.	N/A
3. Cluett Peabody Canada Inc.	Amer.	Kitchener, Ont. Sherbrooke, Que.	N/A
4. Canadian Lady Canadelle	Amer.	Montreal, Que. Quebec City, Que.	N/A
5. Great Northern Apparel Inc.	Amer.	Hamilton, Ont. Cornwall, Ont.	N/A
6. Algo Industries Ltd.	CDN	Montreal, Que.	N/A

COMPETITIVENESS PROFILE

COMMERCIAL PRINTING (REVISED)

PLEASE SUBSTITUTE FOR PREVIOUS DOCUMENT

July 31, 1986

DRAFT - PROJET

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

COMPETITIVENESS PROFILE
Name of Sector: Commercial Printing (Revised)

1. Structure and Performance

a) Structure

The industry is classified under S.I.C. 2811 and 2819. It is composed of establishments primarily engaged in the production of printed items, regardless of the printing method used. Integrated printing facilities in organizations such as insurance companies and governments, commonly referred to as in-house printing plants, are excluded. The industry produces a wide variety of consumer and industrial goods for all segments of the economy. The bulk of its output involves custom work. The industry is an integral part of the "Printing, Publishing and Allied Industries" sector. While a certain degree of interdependence is present between printing and publishing, there are notable differences in the structures and operations of these two industries. Publishing is addressed in another competitiveness profile.

It is estimated that in 1985, the Canadian industry comprised 2,975 companies that controlled 3,100 establishments, employed about 51,500 people and reported shipments valued at $4.3 billion. Catalogues, circulars, price lists and other advertising matter represented the single largest product group, accounting for about one-fifth of the industry's output. The other dominant product groups were business forms (15 per cent) and periodicals printed for publishers (9 per cent). Finally, the industry has large indirect employment ramifications through the purchase of raw materials. For example, it consumes about 50 per cent of the Canadian production of printing, book and fine papers.

Although plants can be found throughout the country, the industry is heavily concentrated in Ontario and Quebec. While the industry provides important employment opportunities in smaller communities, printing activities tend to be concentrated in the areas of high population density. Plants located in the Toronto and Montreal metropolitan areas account for about half of the industry's shipments. The average printer tends to service its local market only.

The industry is characterized by the presence of a large number of small, relatively labour-intensive production units. There are no major barriers to entry into the industry at the small scale level. Roughly four-fifths of all plants employ fewer than 20 people but together they account for only 20 per cent of total shipments. At the other extreme of the scale, the 83 largest establishments, or about 3 per cent of the total, account for roughly half of the industry's shipments. At the company level, the four largest printers account for about 30 per cent of all shipments. Two of these firms are controlled by communications conglomerates.

The industry is primarily Canadian-owned with a strong tradition of family ownership. It is estimated that about 4 per cent of the plants are foreign-owned and/or controlled, primarily by American interests and to a lesser extent by British interests. These companies tend to be larger than average and collectively they account for about 15 per cent of industry's shipments. Non-resident ownership is most extensive in the greeting card and business form fields.

The industry is highly organized from a management viewpoint, through the Graphic Arts Industries Association. Its 697 active members account for about 75 per cent of the industry's shipments. The Association offers its members a broad range of educational programs and administers a scholarship fund. Over the years, it has played a major role in promoting the growth of its members and bringing their problems and views to the attention of governments in Canada.

The general structures of the Canadian commercial printing industry parallel those of its counterpart in most developed nations.

b) Performance

In response to generally favourable market conditions, industry's employment and shipment levels during the period 1973-85 expanded at average annual growth rates of 1.6 and 13.2 per cent respectively. In 1984 and 1985, the industry experienced a period of rapid growth following upon the recent economic recession. Concurrent with this growth was the virtual disappearance of the overcapacity situation that had existed since early 1982. During the period

under review, the commercial printing industry has performed better than the manufacturing sector. For example, its share of all manufacturing shipments expanded from 1.5 per cent in 1973 to 1.8 per cent in 1985. Generally speaking, Canadian growth patterns in shipments and employment in the printing industry have parallelled those in the United States.

During the period 1973-85, exports of commercial printed products grew at a faster rate than domestic shipments increasing their share of the industry's total output from 1.7 per cent to 3.5 per cent. Imports expanded at a slower rate than domestic production, as their share of the apparent Canadian market declined from 7.8 per cent to 7.5 per cent. However, the trade imbalance has grown from $65.2 million to $186.3 million. Canada's trade in this field is conducted primarily with the United States. In 1985, the United States took 88.9 per cent of our export shipments and supplied 82.4 per cent of our import requirements. The second largest trading partner was the E.E.C. which absorbed 4.6 per cent of our exports and provided 11.0 per cent of our import needs. In addition, foreign trade is conducted predominantly by the larger printers. The Canadian industry experiences its strongest competition in mass-produced items.

The commercial printing industry has consistently performed better than all manufacturing in terms of before-tax profit on total income and after-tax profit on equity. As a general rule, small and large printing operations have done better than medium-size firms.

The potential market of the industry, worldwide, has been eroded increasingly in the last decade by in-house printing facilities. The equivalent value of in-house printing in Canada is estimated at $250 million.

2. Strengths and Weaknesses

a) Structural

As in Canada, the United States printing industry comprises a large number of small businesses; where the Americans do have an advantage however, is in the relative size of their largest firms which simply dwarf the largest Canadian companies. For example, Southam Printing, the largest Canadian printer, reported revenue of Cdn $361 million in 1984, compared to U.S. $1.8 billion for its American counterpart, R.R. Donnelly & Sons. Small scale in Canada is primarily a reflection of the small size of the domestic market and its segmentation into two linguistic groups.

The commercial printing industry in developed countries, is basically a locally oriented industry, reflecting both the nature of the products and the supplier/ customer relationships. As a result, transportation is not a significant cost element for the average printer. The manufacturing operations in the printing industry do not give rise to serious pollution or health problems. Most employment in the industry is in the skilled category. In the last few years, labour supply has not been a major problem area for the industry. Unionization is relatively high in the industry and it has been relatively free of strikes and other forms of labour strife. Many of the work stoppages that have taken place have occurred because the unions felt that the introduction of technological changes would alter or eliminate jobs. Paper and ink are the two major raw materials consumed by the industry. No critical sourcing difficulties have been experienced in the past few years, although some higher quality paper grades, such as coated web-stock, have been at times in tight supply.

With a Canadian dollar at between 70 to 75 cents U.S., the Canadian industry is considered as being competitive with its American counterpart. However, the current exchange rate masks an underlying disadvantage in the Canadian cost structure in the area of productivity.

As a general rule, the level of management sophistication in the Canadian printing industry increases with the size of the firm. In most instances, larger firms are managed by professionals who tend to employ effective management systems. Small firms tend to be owned by entrepreneurs with production or direct selling backgrounds and little experience in other functions. Consequently, managerial decisions are frequently made by instinct. However, it is generally recognized that, on an equivalent size basis, management characteristics are basically similar in both the Canadian and American printing industries.

b) Trade Related Factors

Canada, like most developed nations, provides duty-free entry to periodicals, newspapers and books, whether supplied by publishers or printers, and to other printed matter when relating to foreign products or services, when for use by educational institutions, or of a religious nature. The duty-free entry for books is conditional upon continued exemption for Canada from the manufacturing clause of the U.S. Copyright Law, otherwise the M.F.N. rate would be 10 per cent. For most of the remaining printed products, Canadian tariff rates are usually higher than those in its main trading partners. Where applicable, Canadian M.F.N. rates in 1986 range from a low of 7.2 per cent for stamp albums to a high of 29.5 per cent for advertising catalogues while American rates extend from 0.2 per cent to 5.7 per cent. By way of comparison, tariff rates in the E.E.C. would usually fall between the Canadian and American levels.

Up until 1978, penetration of the American market had been hampered by the manufacturing clause of the United States Copyright Law. Very basically, the clause provides that non-dramatic literary works in the English language, written by United States citizens or residents, must be manufactured in the United States to obtain copyright protection. Under the 1976 general revision of the Copyright Law, the American government decided (a) to grant an exemption to Canada from the manufacturing clause, effective January 1, 1978 and (b) that the clause would expire on July 1, 1986. In 1984, a GATT Panel found the manufacturing clause was inconsistent with the U.S. obligations under the GATT.

In November 1985, a bill was introduced in the U.S. Senate to extend the manufacturing clause and the Canadian exemption indefinitely. Another bill introduced at the same time would extend the clause but remove the special treatment granted to Canada and instead would offer the possibility of an exemption to countries that provide copyright protection to American authors and that are certified by the U.S. Trade Representative as having no material non-tariff barriers to trade in printed material. In addition, the bill would broaden coverage of the clause from "non-dramatic literary works" to "printed matter". A compromise under discussion in the U.S. Senate would provide for a temporary continuation of the Canadian exemption with the provisos that Canada would not increase tariffs currently in effect and that outstanding copyright issues between the two countries would be resolved.

c) Technological Factors

In terms of manufacturing processes, the commercial printing industry, worldwide, generally relies on suppliers of machinery and equipment to originate technological developments. Because of the existence of several competing printing methods, extensive on-going research and development programs are conducted by these suppliers in order to capture a larger share of the market. Most efforts in the last few years have been directed at further automating the processes and improving the speed and efficiency of machinery and equipment. These new and more sophisticated manufacturing technologies are available on a worldwide basis. As a result of these technologies, the industry, worldwide, is slowly shifting from a labour-intensive, craft-oriented activity to a capital-intensive, technology-oriented sector.

The Canadian industry, as a group, has not totally kept pace with its American counterpart in modernizing its manufacturing facilities. Since the mid-seventies, capital expenditures in relation to the sales levels have been lower in Canada than in the United States. However, most large Canadian firms generally use state-of-the-art technologies. Although the relatively small size of the domestic market restricts the ability of large printers in Canada to acquire some highly specialized and expensive technologies, such as in-line finishing equipment which necessitate very long print runs to be operated economically. For a number of reasons, including economic and market factors, the rate of implementation of technological innovations is much slower in smaller than in larger firms in Canada as well as in other developed countries. With the notable exception of business form presses, manufacturing equipment used by the Canadian industry must be imported. Generally speaking, this equipment enters Canada duty-free.

3. Federal and Provincial Programs and Policies

Government involvement in the Canadian printing industry through special measures is modest. Instead, horizontal policies in the areas of taxation, tariffs, public procurement, postal distribution, publishing and copyright and horizontal incentive programs, such as CIRB and IRDP (and its predecessor RDIA), are those that have had the strongest influence. The use of these incentive programs was restrained in 1983-84 because of a serious overcapacity situation within the industry.

Government departments and agencies at all levels, federal, provincial and municipal, are major users of print materials. For example, in 1984-85, the Department of Supply and Services purchased $150 million worth of print materials on behalf of the federal government. On the other hand, the federal and several provincial governments are engaged in printing activities; at times, these activities have had an adverse impact on printers in the private sector.

It is estimated that about one-quarter of the printing industry's output is ultimately distributed through the postal system. Consequently, changes in postal rates and regulations and mail disruptions have an important influence on several segments of the printing industry.

In the last decade, governments in Canada have moved on several fronts to promote the growth of periodical and book publishing. Commercial printers in Canada have benefitted from the strengthening of the publishing industry.

Many of the products manufactured by the commercial printing industry are subject to provisions of the Canadian Copyright Act. This Act is the legal expression of the rights granted by Parliament to creators to protect their works against unauthorized use. It came into force in 1924 and no major revisions have since been made. In 1984, the government issued a White Paper entitled "Proposals for the Revision of the Canadian Copyright Act". This document was examined by a Sub-Committee of the House of Commons Standing Committee on Communications and Culture which submitted its report in October 1985. It is anticipated that drafting of the new legislation will commence in 1986. Some of the changes contemplated, such as including blank business forms for copyright protection, would impact negatively on the printing industry. On the other hand, other proposals to better protect creators would assist the publishing industry and in turn the printing industry. By way of comparison, the copyright law in the United States was completely revamped in the late-70's.

4. Evolving Environment

As indicated previously, the industry manufactures a wide variety of products. Market demand for these products is influenced by a complex and interrelated mix of factors, economic, demographic and sociological. In the medium term, some of the forces that contributed to the rapid growth of the industry during the seventies are expected to moderate to some extent, notably the rate of population growth, while others will continue to have a strong positive effect, such as the amount of leisure time. However, the next few years will bring to maturity a number of technological developments in non-print methods of transmitting and storing information, which will adversely affect some printed products. Overall, it is projected that Canadian demand over the medium term will grow at a somewhat more moderate level than in the seventies. Finally, the potential market should continue to be eroded by in-house printing plants.

On the international front, the United States should continue to offer relatively good potential for Canadian printers over the medium term on the basis of no significant changes in the value of the Canadian dollar. Conversely, import pressures from the United States are not expected to moderate.

With the return of better market conditions in 1984, capital expenditures by the printing industry have picked up, placing the industry in a good position to capitalize on increased market demand in Canada and abroad. On the other hand, there is growing concern within the industry that the number of large printing presses that have been installed recently or that are planned, could result in overcapacity and price-cutting practices if the de-acceleration of the North American economy over the next few years is stronger than currently projected.

No critical shortages of paper or other raw materials currently used by the printing industry are expected in the medium term. In addition, there are indications that the Canadian paper industry is taking steps to improve its international competitiveness. The industry should have no critical problem in attracting sufficient workers. The industry is a small energy consumer and fluctuations in energy prices would not affect its competitive position. It is generally believed that no dramatic developments in manufacturing processes utilized by the industry are likely to occur during the next five years, and that the major emphasis will be on refining existing technologies. In particular, electronics and computers will continue to make rapid inroads into printing plants of all sizes bringing improved speed, efficiency and economy.

5. Competitive Assessment

The commercial printing industry worldwide is basically domestically oriented. With a Canadian dollar at between 70 to 75 cents U.S., the Canadian printing industry is able to compete with its American counterpart. However, the current exchange rate masks an underlying problem in the Canadian cost structure in the area of productivity.

There is scope for improving the industry's level of international competitiveness through further rationalization/specialization and modernization and through access to adequate supplies of paper at internationally competitive prices. Otherwise, a number of firms will find it increasingly difficult to adjust to growing import competition. Furthermore, the industry should increase its efforts to identify and exploit export market opportunities.

PREPARED BY: FOOD AND CONSUMER PRODUCTS INDUSTRIES BRANCH
DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

Assistant Deputy Minister
Consumer Goods, Services and Resource Processing

DATE: 3/3/86

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

FACT SHEET

NAME OF SECTOR: COMMERCIAL PRINTING SIC(s) COVERED: 2811 & 2819 (1980)

1. PRINCIPAL STATISTICS

	1973	1980	1981	1982	1983	1984	1985
Establishments	2,183	2,488	2,653	2,702	2,882	3,000(E)	3,100(E)
Employment	42,894	50,991	53,016	51,463	50,145	51,000(E)	51,500(E)
Shipments ($millions)	988	2,675	3,139	3,227	3,430	3,854(E)	4,295(E)
Gross Domestic Product (constant 1971 $millions)(E)	447	647	676	647	664	743	N/A
Investment ($millions)	57.7	145.2	152.6	129.0	133.7	192.4	212.9
Profits After Taxes ($millions)	63.2	203.5	231.2	267.1	212.1	N/A	N/A
(% of income)	8.5	7.0	7.0	7.9	6.1	N/A	N/A

2. TRADE STATISTICS

	1973	1980	1981	1982	1983	1984	1985
Exports ($millions) (1)	17	60	60	63	76	111	149
Domestic Shipments ($millions)	971	2,615	3,079	3,164	3,354	3,743	4,146
Imports ($millions)	82	232	247	254	279	332	336
Canadian Market ($millions)	1,053	2,848	3,326	3,418	3,633	4,075	4,482
Exports as % of Shipments	1.7	2.2	1.9	2.0	2.2	2.8	3.5
Imports as % of Domestic Market	7.8	8.2	7.4	7.4	7.7	8.2	7.5
Canadian Share of International Market	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source of imports (%)	U.S.	E.E.C.	ASIA	OTHERS
1981	84.2	10.0	3.9	1.7
1982	85.2	9.2	3.8	1.9
1983	81.3	12.0	5.2	1.5
1984	82.7	11.0	4.6	1.7
1985	82.4	11.0	4.7	1.9

Destination of exports (%)

1981	75.6	9.0	2.3	13.1
1982	76.0	9.2	2.8	12.1
1983	83.7	6.3	1.5	8.5
1984	86.5	4.2	1.3	8.0
1985	88.9	4.6	1.0	5.4

3. REGIONAL DISTRIBUTION - 3 yr avg.

	ATLANTIC	QUEBEC	ONTARIO	PRAIRIES	B.C.
Establishments - % of Total	4.2	27.7	43.3	14.4	10.4
Employment - % of Total	1.9	28.6	51.3	11.7	6.5
Shipments - % of Total	1.3	29.9	51.9	10.7	6.1

4. MAJOR FIRMS

	OWNERSHIP	LOCATION OF MAJOR PLANTS
1. Southam Printing	Canadian	Candiac, Montreal Toronto, Burnaby
2. Ronalds-Federated	Canadian	Montreal, Toronto Calgary, Vancouver
3. Lawson & Jones	Canadian	Montreal, Toronto London, Winnipeg
4. Moore Corp. (Cdn output only)	Canadian	Beauceville, Trenton, Toronto, Vancouver

(E): Estimate
N/A: Not available
(1) The export statistics quoted in this report understate the actual level of export orientation of the Canadian commercial printing industry. For statistical purposes, Canada's international trade in newspapers, periodicals and books is usually assigned to the publishing industry. However, it is believed that a good portion of Canadian exports of these commodities originates from companies classified to the commercial printing industry. Unfortunately, it is not possible to estimate the value of these export shipments at this time. In contrast, it is believed that the bulk of Canada's imports of newspapers, periodicals and books originates from foreign publishers as opposed to commercial printers.

DRAFT

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

COMPETITIVENESS PROFILE

COMMERCIAL REFRIGERATION AND AIR CONDITIONING EQUIPMENT INDUSTRY

1. STRUCTURE AND PERFORMANCE

a) Structure

This industry consists of manufacturers of:

Commercial and Industrial Refrigeration Equipment: such as display cases and counters, cold storage cabinets and rooms, truck and railcar refrigeration units, chillers, unit coolers, process food freezers, ice making machines, and ice rink systems, and

Air-Conditioning Systems, including window-type air conditioners, but excluding automotive air conditioning units.

Also included in this sector are manufacturers of cooling towers, and manufacturers of assorted equipment such as heat pumps which may be used for both heating and cooling purposes.

The manufacture of commercial refrigeration and air conditioning equipment involves metal shearing and forming, welding, painting and assembly work. Production labour is generally semi-skilled and unskilled, although skilled labour is required for the more sophisticated manufacturing operations such a high pressure foam injection techniques used to produce some commercial refrigeration products.

The value of Canadian shipments reached $445 million in 1985, and the total Canadian market for commercial refrigeration and air conditioning equipment stood at $712 million. Employment in the industry in 1985 was estimated at 4,000 employees, heavily concentrated in Ontario (over 70 percent).

There are 50 to 60 manufacturers in this sector, although approximately 10 percent of total Canadian shipment of the products in this sector originate with manufacturers of heating equipment. The four largest firms in the Canadian industry (Hussman, Keeprite, Trane, and Carrier) account for over 40 percent of shipments, and the largest dozen firms account for 70 percent of shipments and employment. About 70 percent of air conditioning production capacity and from 30 to 40 percent of commercial refrigeration production capacity in Canada consists of subsidiary operations of foreign-owned firms.

New commercial and residential construction provides the primary market for air conditioning products, and the food services and food retailing industries are the major purchasers of commercial refrigeration equipment.

For the most part, there is no significant offshore competition in the home markets of any of the developed nations which have domestic production capacity for commercial refrigeration and air conditioning equipment. The larger commercial refrigeration units are bulky to ship, and the larger air conditioning systems require substantial custom engineering, installation, and servicing work. Thus, overseas sales of these units can require either an extensive service organization or some form of joint venture. Canadian exports, aside from those to the northern United States, are almost entirely to less-industrialized countries without a domestic source of supply.

Room air conditioners and vital components such as compressors and condensing units can be exported worldwide. Low-priced Asian competition has surfaced recently in these product segments. For instance, Japanese and Korean firms have become active in the window-type air conditioner segment, and are underselling Canadian-built units in various markets. As well, the relatively high content of low-skill assembly labour has allowed Singapore to become a major supplier of small hermetically-sealed compressors to all industrialized nations.

Canadian manufacturers have become active in the heat pump market segment only in the last five years. The technology employed in heat pumps was developed for residential applications in the United States initially, where the product has much wider market appeal. Canadian content on units manufactured here is estimated to be still only 55 to 65 percent. While heat pumps continue to be imported into Canada in substantial numbers, several Canadian companies have recently developed promising products.

b) Performance

Between 1973 and 1980 annual real growth in Canadian shipments (9.5%) outstripped growth in the domestic market (6.2%). From 1980 to 1982 the domestic market and industry shipments declined, and by 1985 neither had fully recovered. While the value of industry shipments in 1985 represented an increase of 28 percent in real terms over 1982 levels, shipments were still approximately 10 percent below the pre-recession levels of 1980. Similarly, the domestic market in 1985 was up in real terms by 36 percent from 1982 levels, but was still 6 percent below the market size of 1980.

In 1985, Canada had a deficit of $267 million in its trade of commercial refrigeration and air conditioning equipment. Canadian exports, which are primarily to the United States, reached $109 million. Exports now account for one-quarter of industry output, versus the situation of the early 1970's when the industry's export orientation was less than 5 percent. In the last five years, Canadian-owned firms such as Keeprite (window air-conditioners) and General Refrigeration (display refrigeration) have successfully expanded their sales in the U.S. market and have established a presence in selected offshore markets.

Imports to Canada in 1985 stood at $376 million, representing 53 percent of the domestic market. Import penetration was relatively stable, at just below 50 percent through 1982, but has shown a slight increase with the rebound of the domestic market since then.

Almost all imports are from the United States, and include vital components such as refrigeration compressors and refrigeration valves. For instance, in 1985 imports of refrigeration compressor units reached $75 million, including imports of $37 million from the U.S. and $18 million from Singapore. Because of the industry's reliance on foreign-made components, industry shipments have only about 65 percent Canadian content.

2. STRENGTHS AND WEAKNESSES

a) Structural Factors

The Canadian industry relies on imported parts, such as valves, which require extensive machining in their manufacture. Production equipment for these imported components often requires a major capital investment, since the parts are manufactured to close tolerances and good quality control is essential in order to provide the industry standard five year

warranty. There are substantial scale economies to be realized in this type of manufacture. At the present time, there appears to be little room for a new world-scale operation in the North American market.

Several Canadian manufacturers have attained success through product specialization. The largest Canadian-owned firm in the industry, Keeprite, has specialized for some years in window-type air conditioning units, and is acknowledged as a leader in that segment of the market, supplying brand name equipment for many North American retailers. Foster Refrigerator has developed a successful business in blast chilling and freezing equipment in both the domestic and export markets. General Refrigeration and Coldstream Products have specialized on refrigeration display equipment for smaller food retailers and convenience stores and are expanding their export sales.

The largest U.S. manufacturers of **commercial refrigeration equipment** (Hussman and Hill) have modern production facilities in Canada. They have significant investments in tooling and jigs here, and allow their Canadian plants some freedom to develop products and produce them for the North American market. With minor exceptions, foreign-owned subsidiaries manufacturing **air conditioning equipment** have little or no authority to export (particularly to offshore markets), and none produces its parent's full product line in Canada. The intra-company transfers of parts and finished products by U.S. subsidiaries in both sectors account for about 20 percent of all Canadian exports, and for a far larger percentage of imports into Canada.

b) Trade Related Factors

Canadian tariffs (effective January 1987) on refrigeration equipment include a rate of 13.5% on store display refrigeration equipment, a rate of 11.3% on some refrigerator parts, and free entry of some other parts for the manufacture of refrigerator compressors. Imports of air conditioning equipment for household use are subject to a 12.5% tariff, portable air conditioners up to 6000 BTU capacity enter free of duty, and imports of other commercial air conditioning and refrigeration equipment enter Canada subject to duties of 9.2 percent. Most components imported for assembly into commercial refrigeration equipment enter Canada duty free.

Duties on imports to the United States are 2.6% on air conditioning equipment and 3.2% on refrigeration equipment. Building codes are similar in the United States and Canada, and there are no significant barriers to trade between the two countries. Canadian manufacturers do, however, have to wait for as long as two years to obtain Underwriter's Laboratory (U.L.) and comparable certification for their commercial refrigeration equipment.

Japanese tariffs are 3 to 4 percent on air conditioning equipment and 2.7 to 3.6 percent on commercial refrigeration equipment. Tariffs on imports to the E.E.C. range from 3.0 to 3.8 percent on commercial refrigeration equipment and reach 5.3 percent on air conditioning machines. In addition, high tariffs have restrained exports to some other markets. For example, Keeprite's recent expansion into the Australian market was thwarted when a high tariff was imposed. Securing approvals from the assorted standards and testing bodies in offshore markets has usually proven difficult, although the same is true of obtaining CSA approval in Canada.

c) **Technological Factors**

Commercial refrigeration and air conditioning equipment is generally produced in Canada in plants equipped with modern machinery, and the technology employed in products compares favourably with that employed in imported equipment. However, Canadian manufacturers continue to rely on major imported components for much of the technological content of their products.

Foreign-owned subsidiaries manufacturing air conditioning equipment, in particular, rely almost exclusively on their parents for technological expertise and research and development work. Their access to the research teams of their parent organizations is a distinct advantage over similar-sized Canadian-owned manufacturing plants.

The two largest U.S.-owned subsidiaries manufacturing commercial refrigeration equipment (Hussman and Hill) have undertaken product development and research in Canada. In some cases these plants have gone on to manufacture these product lines for the full North American market.

d) **Other Factors**

Many of the compressor units and other key components for Canadian-built equipment are obtained from United States facilities. As a result, the exchange rate vis-a-vis the U.S. dollar has a direct impact on the pricing of the industry's products in both the domestic and offshore markets, and this adds an element of vulnerability to Canadian production of certain self-contained units which are easily shipped and which are becoming subject to increased low-cost Asian competition.

3. FEDERAL AND PROVINCIAL PROGRAMS AND POLICIES

Manufacturers of commercial refrigeration and air conditioning equipment in Canada benefit from the provisions of the **Machinery Program**, which ensures that the full duty is applied on imported equipment similar to that which is manufactured in Canada.

4. EVOLVING ENVIRONMENT

New commercial and residential construction will continue to be the primary determinants of growth in the air conditioning market segment, and growth in the food service and food retailing industries will drive the commercial refrigeration market segment. Over the next five years, the outlook for these key indicators in North America is healthy, but with limited growth in real terms.

For most of the products in this sector, the high transportation costs involved in entering offshore markets, together with the similarity of building construction and equipment design accepted in the United States suggest that the most likely scenario in the medium term is for any growth of the Canadian industry to come via increased penetration of the United States market.

With little real growth anticipated in North American markets beyond the medium term, longer term growth opportunities for the Canadian industry will lie in offshore markets without a domestic industry, and also in those product lines (primarily self-contained units) which can be transported efficiently. However, the emergence of new competitive

sources for "transportable" products will have a substantial influence on Canadian firms. For instance, the Japanese have recently become active in the window-type air conditioner segment, and are underselling Canadian units in various export markets.

5. COMPETITIVENESS ASSESSMENT

Canadian manufacturers of commercial refrigeration and air conditioning equipment produce products which are as efficient and reliable as any in the world. Worldwide, the industry is not heavily export oriented, with competition among producing nations limited to those market areas without a domestic manufacturing capacity. In these markets, Canadian commercial refrigeration and commercial air conditioning equipment have both been able to compete successfully.

Room-size air conditioning equipment is subject to more active competition in all international markets. Canada has, in Keeprite Inc., a world-competitive producer, and our exports of these units are an important component of Canadian trade in this sector. The recent appearance of low-cost Asian producers is a cause of concern, and will require some adjustments to the production of these units in Canada.

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Department of Regional Industrial Expansion

J M Bauzon

Assistant Deputy Minister
Capital and Industrial Goods

Date: 11 July, 1986

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

FACT SHEET

COMMERCIAL REFRIGERATION AND AIR CONDITIONING EQUIPMENT **S.I.C. 3121 (1980)**

1. PRINCIPAL STATISTICS

	1973	1980	1981	1982	1983	1984	1985
Establishments	38	60	41	51	56		55e
Employment	3853	5041	4065	3863	3686		4000e
				($Millions)			
Shipments	119	369	352	303	311	393e	445e
Profit After Tax	4	16	13	6	3		
Capital Expenditures	5	7	6	2	4	4	8e
Gross Domestic Product ($1971 millions)	48	80	66	55	57	69	75e

2. TRADE STATISTICS

	1973	1980	1981	1982	1983	1984	1985
				($ Millions)			
Exports	3	57	66	70	83	90	109
Domestic Shipments	116	312	286	233	228	303e	336e
Imports	109	252	278	223	262	364	376
Canadian Market	225	564	564	456	490	667e	712e
Exports as % of Shipments	2%	15%	19%	23%	27%	23%e	24%e
Imports as % of Dom. Market	48%	45%	49%	49%	53%	55%e	53%e

	U.S.	E.E.C.	ASIA	OTHERS
Source of Imports				
1981	88%	3%	6%	3%
1982	88%	3%	8%	1%
1983	80%	5%	12%	3%
1984	86%	3%	8%	3%
Destination of Exports				
1981	57%	5%	4%	34%
1982	62%	5%	3%	29%
1983	82%	4%	3%	12%
1984	84%	2%	3%	11%

3. REGIONAL DISTRIBUTION - most recent year available - 1983

	Atlantic	Quebec	Ontario	Prairies	B.C.
Establishments	4%	27%	57%	5%	7%
Employment	N.A.	17%	73%	N.A.	N.A.
Shipments	N.A.	16%	77%	N.A.	N.A.

4. MAJOR FIRMS

NAME	OWNERSHIP	LOCATION OF MAJOR PLANTS
Air Conditioning		
Keeprite Inc.	Canadian	Brantford, Ont.
Trane Co. of Canada	U.S.A.	Toronto, Ont.
Carrier Canada Ltd.	U.S.A.	Brampton, Ont.
Tecumseh Products of Canada Ltd.	U.S.A.	London, Ont.
Borg-Warner (Canada) Ltd.	U.S.A.	St. Jerome, Que.
Refrigeration		
Hussman Store Equipment Ltd.	U.S.A.	Brantford, Ont.
Coldstream Products of Canada Ltd.	Canadian	Winnipeg, Man.
Hill Refrigeration Div. of Emerson Quietcool	U.S.A.	Barrie, Ont.
Cornelius Mfg. Co. Ltd.	U.K.	Rexdale, Ont.
Foster Refrigerator Division of Vulcan-Hart Canada Inc.	U.S.A.	Drummondville, Que.
General Refrigeration Div. of Intermetco Canada Ltd.	Canadian	Downsview, Ont.

e = Estimated

DRAFT - PROJET

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

Competitiveness Profile: Computer Service Industry

1 STRUCTURE AND PERFORMANCE

a) Structure

The industry is composed of three major sub-sectors: **data processing services, professional services** (including consultants and systems integrators) and **software developers and distributors.** Each of these has distinctive characteristics with different implications for a competitiveness assessment. At the same time, industry statistics, particularly on exports and imports, are often incomplete or non-existent. Statistics Canada data is collected from firms whose major source of revenue comes from the provision of computer services, and does not include data on computer services which are internal to firms in other sectors or computer services provided for sale by computer and electronics manufacturers. The competitiveness profile concentrates on the activities of computer service firms, as defined by Statistics Canada, augmented by other computer service industry information provided by private sector market research sources. Of the total revenues for the computer services sector of $2.3B in 1985, it is estimated that $400M - $600M were generated by the services activities of hardware manufacturers.

In 1985, the 2,100 firms in the Canadian computer services industry employed 27,000 people and had revenues of $2.3 billion. Data processors earned 28% of total industry revenue in 1985; professional service firms earned 18%; and software developers and distributors earned 54%. Computer service firms operate in all provinces, but Ontario and Quebec together account for most of the activity (75% in 1984), as this is where population, governments, corporate head offices and the financial community are highly concentrated.

At the sub-sector level, there were an estimated 250 **data processing** firms in Canada in 1985, with combined revenues of $650 million and employment of 9,000. This sub-sector is largely Canadian-owned (over 80% by share of revenue) and is relatively highly concentrated, with 10 firms (8 of which are Canadian-owned) earning 70% of the sub-sector's revenue.

Historically, the data processing industry in Canada and in other countries was established to serve local markets. It is estimated that the volume of imported or exported processing services is very low. In these circumstances, foreign competition has not been an important factor for this industry sub-sector.

The **professional services** sub-sector has exhibited rapid revenue growth during this decade. The estimated 600 firms in the sub-sector generated revenues of $420M in 1985, and employed 8,000 people.

While it has grown rapidly, professional services remains the smallest of the three sub-sectors. The sub-sector is by nature domestically oriented and virtually totally Canadian-owned. The average firm size is extremely small with only a few companies reporting revenues of more than $5M annually. Rate of firm turn-over is high. The leading firms in the industry (DMR & Associates, Computech, Synerlogic, Systemhouse) are, however, well established and have made limited entries to the export market. Nevertheless, in general there would appear to be few exports or imports in this sub-sector. Foreign competition has not, therefore, been a factor for this segment of the computer service industry.

There are approximately 1,200 **software suppliers** in Canada, which generated revenues of $1,250 million in 1985 and employed 10,000. The number of these firms which produce their own software is unknown. Fifty firms (producers and suppliers) had revenues of over $1 million in 1983 and earned almost 80% of the industry's revenue. In addition, apart from computer manufacturers which are largely U.S. owned, the largest software producers in Canada are Cognos Inc. and Sydney Development Corporation. These firms are small by international standards with sales of $20 million each annually.

Software falls into roughly three categories: operating systems packages which are mainly produced by computer manufacturers; applications packages for broad or horizontal uses (e.g. spreadsheets) or for special (vertical) uses (e.g. hospital systems); and systems development in which customized software is developed to meet the particular applications needs of the client.

Canadian software producers are concentrated in the systems development area and, to a limited extent, in the vertical applications package area. There are few Canadian software developers producing horizontal packages and virtually none producing operating systems software. These latter have been, however, the fastest growing parts of the software market.

Software is traded internationally on a substantial scale. Much of this software is developed by independent producers for so-called horizontal applications (e.g. spreadsheets). The leading producers of horizontal packages are American. While independent producers are important, 50% of the software sold in Canada is marketed by computer manufacturers, virtually all of whom are U.S. owned. In the circumstances, there would appear to be significant amounts of software imported to Canada. Canada exported an estimated $125 M worth of software, mostly to the U.S., in 1985. However, estimates suggest that at best only 30% to 40% of Canada's demand for software is met by domestic production.

b) Performance

The computer service industry had its beginnings in Canada in the mid 1960's when the first processing companies were established. At that time, the significant capital costs associated with large mainframe computers (the only kind available) and the customers' lack of experience with computer technology created a rapidly growing market for companies which could provide data processing services (i.e. service bureaux). Until the late 1970's, annual growth rates in excess of 20% were common for the processing industry.

In the mid to late 70's, the nature of the computer service market began to change as micro computers were introduced. This new technology dramatically reduced the price of computing power and led to a rapid increase in the number of computer users and to much more computer activity being done by the client firm itself rather than by data processing firms. As a result, the revenues of data processing sub-sector have essentially been flat over the last five years. While this has not yet had a major impact on the structure of the data processing industry, it is not unreasonable to suppose that there will be some consolidation in the industry as firms battle for market share in a stagnant market. On the other hand, the market for professional services (including consulting) and software has soared to annual rates of growth of between 25% and 30% during the same period. In terms of market share, data processing has fallen from 50% of computer service industry revenue in 1981 to 28% in 1985. Professional services have increased their share of the market from 13% to 18%, while software developers have increased their share from 36% to 54% during the same period.

The rate of company formation is extremely high in the computer service industry, particularly in the professional services and software sectors. Between 1981 and 1983, for example, Statistics Canada reports that the number of computer service establishments grew by 32%. Statistics on profitability are unavailable.

2 STRENGTHS AND WEAKNESSES

a) Structural

The fundamental ingredient for success in the computer service industry is knowledge. Equipment, while important for the provision of turnkey systems, can generally be acquired by Canadian companies at the same price as their competitors pay.

The strengths of the **data processing sub-sector** are its relative maturity and consequent experienced management, the financial resources of the larger firms and their corporate links to other large and successful firms, and their entrenched position in the domestic market. A recently completed Interfirm Comparison Study of the data processing industry carried out by DRIE found, for example, that larger firms were more profitable, had higher returns on assets and were experiencing larger sales growth than smaller companies. In light of these factors the industry is well positioned to compete for the provision of traditional data processing services. It should, therefore, be able to maintain its share of this market against foreign competition.

The major weakness of the industry is the lack of growth in the traditional data processing market which is largely associated with the emergence of low cost mini and micro computers. Unless new products and services are developed, it is likely that profit margins will decline as companies in the sub-sector compete in a static or declining market. The management experience and financial strength of larger firms should enable them to develop new services and, indeed, some have already done so. Whether or not the data processing industry as a whole will be able to harness these strengths to make the required transition is not, however, clear. A similar situation seems to prevail in the United States.

The strength of the **professional services sub-sector** lies in the rapid rate of growth for its services in the domestic market, its strong position in this market, and the emergence of some firms with experience in consulting on specialized computer applications (e.g. banking). These factors should enable a growing number of medium to larger scale firms to develop.

The weaknesses of the sub-sector are the relatively recent origins and small size of most firms and their consequent lack of financial and management experience to manage the rapid rate of growth which the industry has experienced. In the near term the sub-sector's strengths, particularly the buoyant market for its services, will outweigh its weakness and the sub-sector as a whole should continue to enjoy high rates of growth. There will, however, continue to be moderately high rates of turnover in firms at the bottom end of the industry.

As indicated, Canada's strengths in **software development** lie in special (vertical) applications packages and in customized software. While sales of customized software appear to have been relatively flat over the last five years, this type of software is increasingly being developed by computer consultants and, to a lesser extent, by the data processing industry where Canadian firms predominate. Statistics, therefore, probably underestimate this market and the role of Canadian firms in supplying it.

Canadian firms also have strengths in special or vertical applications packages which are likely to become the fastest growing segment of the software market as the market for horizontal packaged software becomes saturated and operating systems software is constrained by the slowing sales of hardware. The leading Canadian firms with vertical markets include among others, International Geosystems, IST, Geomin Systems, Utlas and GEAC.

Canada's prospects internationally in the sale of special applications packages are uncertain for two reasons. First, while Canadian companies have demonstrated competence in special application packages, it is difficult to assess how widespread this competence is in the absence of detailed data on the firms producing these packages and the type of software they produce. Second, while Canadian firms have demonstrated their technical ability to produce special software packages, their ability to market them, particularly internationally, is yet to be fully developed. Most software producers are small firms with a consequent lack of financial, management and marketing resources. There have been some notable successes internationally, but these are still relatively few.

b) Trade Related Factors

There are no tariff barriers imposed on trade in computer services and few trade issues have arisen between Canada and the U.S. respecting this industry. Non-tariff barriers include restrictions on labour mobility, which affect computer consultants and other professionals, and government procurement policies, which tend to favour domestic or local products and services. In the area of defense procurement, Canada and the U.S. have established similar criteria to screen potential suppliers of sensitive military equipment and services. These criteria do not constitute barriers to trade. Non-military defence procurement in both countries is governed by general government procurement policies and practices. Non-tariff barriers are not critical to the competitiveness of the Canadian industry. There is some concern in the U.S. that vending of computer capacity across Canadian borders is not totally unrestricted. For instance, regulations under the Bank Act require that certain types of data be stored in Canada.

3 FEDERAL AND PROVINCIAL PROGRAMS AND POLICIES

At present, advanced software development is eligible for IRDP assistance. The Program for Export Market Development has been of assistance to all sub-sectors of the industry. Provincial governments also provide support to the industry. It should also be noted that federal and provincial government procurement policies have the potential to assist the computer services sector by providing them with a source of revenue and product recognition.

Certain ambiguities in Canada's tax regulations are seen to be adversely affecting the development of a computer software industry. For example, the lack of a concise definition of R&D as it applies to the development of software results in an uncertain climate for long-range planning of firms who are unsure about the eligibility of R&D related expenditures.

The issue of copyright protection for software is becoming increasingly important as countries, especially the United States, seek to protect software products from unlawful copying. The current Canadian Copyright Act makes no explicit mention of computer programs, although recent court judgements have given software the same protection available to other intellectual properties.

4 EVOLVING ENVIRONMENT

As indicated, the computer service industry has evolved from an industry dominated by data processors to one in which the highest rates of growth are now enjoyed by professional service firms, including computer consultants, and software producers. In future, it is likely that the lines of demarcation between the three sub-sectors will blur even more as customers demand turnkey solutions to computing problems in which the vendor must design systems and combine hardware (manufactured by others), software and consulting, training and maintenance.

In order to offset slow growth in the traditional data processing market, the **data processing sector** has begun to market a variety of new services. The most important of these are: specialized data bases which customers can access over standard telephone lines and run on in-house equipment; the provision of hardware and operating systems to customers who wish to perform limited in-house processing functions and tie into remote computing services for large or special jobs; and applications software packages that can be used first on the remote computing system and later on the customer's in-house system on a licenced basis.

There are two important factors about this evolution from a competitiveness perspective. First, data processors are now beginning to offer services similar to those available from the professional services industry and software developers and they are, therefore, increasingly coming into competition with these segments of the industry. Second, these new services, particularly specialized data bases and applications packaged software can be increasingly traded across borders. The industry, therefore, has an opportunity to export, but it may also be subject to increased competition from foreign, particularly the U.S. data processing firms.

In sum, the evolution of the processing industry means that it must adjust from competing within the processing industry on a domestic basis to competing with other sub-sectors of the computer service industry both domestically and internationally.

The growth of the **professional services** sub-sector has been driven by the dramatic increase in computers, particularly micros, over the last decade. While this spread in computing power has yet to run its course, the market is beginning to demand "total solutions" to its computing needs. Consultants with depth in specialized applications will be well placed to take advantage of this emerging trend. Those not so placed will have to rely on general consulting in the local market which will diminish in importance over time.

Software is expected to continue to have the highest rate of growth of any segment of the computer service or hardware industries. Within software itself, special or vertical applications packages and customized software should outstrip the growth rates for horizontal packages and operating systems.

The software industry is already internationalized in the horizontal package and operating systems segments. It will become increasingly internationalized in the special applications packages segment as well. The domestic market for these packages even in large markets like the United States will be insufficient in many cases to support continuing growth of software development firms. Customized software or software modifications will be slower to internationalize because much of the demand for this service is from small firms who will be served by locally based data processors and computer consultants. There will, however, be an international market for customized software designed to serve the needs of large customers with unique requirements.

5 COMPETITIVENESS ASSESSMENT

The **data processing sub-sector** is competitive in the provision of traditional data processing services and will remain so, despite projected slow growth in this area. Larger firms in the industry have the strength to compete successfully in the provision of new services provided that their management are willing to reorient them in this direction. Smaller firms will find it increasingly difficult to compete and many of them could lose their market to, or be absorbed by, larger companies.

The **professional services sub-sector** should have no difficulty in continuing to serve the general consulting needs of local clients since it is established in this market and there is no discernable movement into this market segment by other sub-sectors of the computer service industry or by foreign computer consulting firms.

The sub-sector's ability to compete in special applications areas and in the provision of turnkey systems is more problematic. As indicated, there will be growing competition in this market from the other sub-sectors of the computer service industry and from foreign suppliers. The lack of financial resources and management skills of most of the firms in the sub-sector suggest that only a few of the larger computer consulting firms will be successful in the special applications and turnkey market.

With respect to **software producers**, Canada is not competitive in the development of horizontal applications packages and operating systems software and there are no indications that it will become so. Canadian firms, however, can compete in customized or systems development software and in special applications packages. This latter is likely to become the fastest growing segment of the software industry. To succeed in this sector firms will have to enter the export market since domestic demand will be too small to sustain them. Moreover, foreign firms will increasingly seek entry to the Canadian market and domestic companies will, therefore, have to achieve international standards of excellence to protect their domestic market share.

Prepared by: Service Industries Branch
DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

Assistant Deputy Minister
Consumer Goods, Services and Resource Processing

Date: July 11, 1986

FACT SHEET

NAME OF SECTOR: Computer Services Industry **SIC(s) COVERED:** 7721 (1980)

1. PRINCIPAL STATISTICS

	1981	1982	1983	1984	1985
Establishments(1)	1,392	1,752	1,836	2,100	2,100(3)
Employment(1)	20,495	22,137	21,973	25,000	27,000(3)
Total Industry Revenue $M(2)	1,300	1,563	1,761	2,025	2,321
Data Processing $M	655	735	710	685	650
Consulting, Education, Misc. $M	170	230	275	340	420
Software: $M	475	598	776	1,000	1,251
Application Packages $M	95	173	260	385	506
Systems Packages $M	154	213	295	390	535
Custom or Systems Development $M	226	212	221	225	210
Gross Domestic Product (Constant 1971-$ millions)	1,970	2,273	1,659	1,896	N/A
Profits After Tax ($ millions)	N/A	N/A	N/A	N/A	N/A

2. TRADE STATISTICS

- N/A -

3. REGIONAL DISTRIBUTION - Average over the last 3 years

	Atlantic	Québec	Ontario	Prairies	B.C.
Establishments - % of total	3	20	46	18	13
Employment - % of total	2	21	54	15	8
Revenues - % of total	2	21	54	16	7

4. MAJOR FIRMS

Name	Ownership	Location of Cdn. Head Office
Canada Systems Group	Can.	Toronto
Crowntek	Can.	Toronto
Control Data	U.S.	Toronto
D.M.R. & Associates	Can.	Montreal
IST	Can.	Montreal
B.C. Systems	Can.	Vancouver
Systemhouse	Can.	Ottawa
I.P. Sharp	Can.	Toronto
Sask. Utility	Can.	Regina
Cognos	Can.	Ottawa
Cullinet-Canada	U.S.	Toronto
IBM	U.S.	Toronto
Digital Equipment	U.S.	Toronto

Source:
1. Statistics Canada, Computer Service Industry, Catalogue No. 63-222, 1984.
2. Evans Research Corporation, Trends and Forecasts - for the Canadian Information Processing Industry, Report No. 12, December 1985.
3. DRIE estimates for firms primarily engaged in the provision of computer service.

N/A - Not Available.

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

DRAFT

COMPETITIVENESS PROFILE

COMPUTERS AND OFFICE EQUIPMENT PRODUCTS

1. Structure and Performance

Structure

The products of this sector are computers, data communications equipment, terminals, storage devices, photocopiers, printers, wordprocessors and typewriters. Computer parts are included at the subsystem but not the component level. Other major activities for companies in this sector include software development (computer programs) and equipment leasing. Major companies derive a substantial portion of their revenue from all three sources. Because of data limitations the companies that are considered are those whose primary revenues are generated from hardware as opposed to software sales. These companies are IBM, Digital Equipment (DEC), Burroughs, Sperry, Control Data and Honeywell Ltd. among others.

Non-computer items account for 13% of industry revenues, the largest subsector of which is photocopiers. Xerox Corp. produces some photocopiers in Canada. Traditional typewriters are declining in market share and being replaced by electronic typewriters and word processors, which are considered computer equipment rather than office equipment.

Companies in the Computer and Office Equipment sector assemble products that incorporate microelectronic integrated circuits, commonly referred to as IC's, printed circuit boards, metal cases, keyboards and video tubes. They also are required to write software and permanently incorporate it into a product in order to make it function. An example is the permanently installed program in a word processor. By far the most important components are integrated circuits, (IC's). These are generally obtained from merchant IC manufacturers and designed into such products as word processors and computer terminals. Because of the wide availability of the IC, it is possible to design a product and enter the industry on a small scale on the basis of a product design. This results in a large number of turnovers among small and innovative companies.

The structure of the Canadian computer equipment sector is dual in nature. It is dominated by the subsidiaries of a small number of MNE's. These are IBM, DEC, Burroughs, Sperry, NCR, Control Data and Honeywell. Together, these firms account for 62% of industry revenues. IBM Canada itself accounts for almost $3 billion or 44% of the $6.5 billion hardware supplier market. Of the top twenty companies, three are Canadian-owned, AES Data (ranked 9th in 1984 with revenues of $145 million), GEAC Ltd. (17th, ($70 with revenues of) million) and Gandalf Ltd. (18th, with revenues of $69 million). These three firms are the largest and most successful of the Canadian-owned firms. Together Canadian-owned product manufacturers account for only 9% of total sector revenues. The bulk of Canadian-owned firms are small, entrepeneurial and either seek unique market niches or manufacture commodity items such as terminals, word processors, library systems and modems at narrow profit margins.

MNE activities in Canada do not follow the classic branch plant pattern of small scale facilities producing on for the domestic market. The production of computers and office equipment has become highly internationalized. Plants are sized for world or regional markets and export the bulk of their output. Market demand in Canada is met primarily by importing products from elsewhere. R&D and marketing are generally centralized at corporate headquarters. For example, Digital Equipment Company of Canada manufactures backplanes for its entire line in Canada. (A backplane is used to mount and electrically interconnect the subassemblies of a computer). Consequently, trade in this sector arise primarily from the locational patterns of MNE facilities as they respond to market demands and government measures.

In the international market IBM is the world's largest computer company with 39% of a US $118 billion market. DEC is second with 5.2%. IBM, DEC and the other other major MNE's account for 63.5%. There are large electronics companies in Europe and Japan who participate actively in the computer and office equipment sector. These are ICL (England), Bull Cie (France), Siemens (Germany), Phillips

(Holland) and Fujitsu and NEC in Japan[1]. These companies have had only modest success in the export market. In all countries except Japan, IBM is the market leader. In Japan, IBM is a close second to Fujitsu. Japan has developed a strong and well publicized presence in components and consumer electronics but not in complete computers. In each country, there also exists a large number of small entrepeneurial firms operating primarily in services and software with some manufacturing capability.

Performance

Over the period 1979 to 1984 the average annual growth rate of revenues in Canada in real terms was 21.0%. This is a faster rate than that of the economy as a whole and as a consequence revenues rose from 0.8% of GNP in 1979 to 1.7% in 1984. Although information for 1985 is not yet available, preliminary indications are that market growth will be around 18%. In 1984, IBM (Canada) Ltd. and DEC accounted for 60% of the growth in revenues.

Manufacturing employment has grown at an average rate of 5.0% over the 1979-1983 period and was about 15,000 people in 1983, the latest year for which data is available. The industry has a total employment of 35,000 indicating that marketing and service activities outweigh manufacturing.

There is a significant and growing trade deficit in the sector. In 1982 it was $1.8 billion and grew to $3 billion in 1984.

2. Strengths & Weaknesses

Structural

With the exception of IC packaging, variations in manufacturing costs between the U.S., Canada, Western Europe and, increasingly, Japan are minimal. Locational decisions may well be determined by such factors as government initiative and targetting. There is no overwhelming locational advantage to Canada. In many cases, firms such as IBM entered Canada when trade barriers were high and established branch plants. In other cases Canadian production came as the result of a subsidiary of an electronics oriented MNE changing roles such as Phillips Information Systems. Canada has supplies of land, energy, capital and personnel and is competitive with locations in the U.S., Europe and Japan. Canada is also a major market for these products, and, to some degree, attracts facilities because of market size (Canada is the seventh largest market for computers and office equipment). Public sector procurement, which in Canada is estimated to represent up to 30% of the market, has attracted MNE facilities.

As previously noted, the sector in Canada is dominated by a few American-owned MNE's. MNE practice is to centralize R&D and marketing at corporate headquarters, usually in the U.S. Consequently, the levels of R&D and marketing employment in Canada are lower than might be expected in a situation where these firms were Canadian-owned and based. For example, in 1984 IBM spent $4.2 billion (9% of sales) on R&D in total with $68 million (2.2% of sales) in Canada.

Small local firms take technical and market standards from MNE's and attempt to find market niches. In some cases, this involves a unique application (word processors in 1976, personal computers in 1977) and in other cases involves producing a commodity item (computer terminals) under an MNE price umbrella. In the former case these applications can become popular and provoke MNE entry and a loss of market share. In the computer terminal case cut throat competition ensued and prices and profits have been severely reduced because of the economies of scale an MNE can bring to bear. Generating sufficient earnings to sustain the R&D initiatives is vital for small companies but extremely difficult.

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[1] The total revenues of these companies range from $500 million to $4.0 billion.

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

Trade

Tariff barriers in the sector are modest. The level of tariff protection is not a major determinant of investment patterns and has not deterred MNE's from investing in facilities on a rationalized production basis internationally. In January 1986, Canada, the U.S. and Japan eliminated tariffs on computer parts. As a retaliatory response to the USA's increase in cedar shingle and shake tariff, Canada reimposed the parts tariff in June 1986. In addition, most peripherals except telecommunications and certain input-output devices enter Canada duty free. The U.S.A. still maintains a tariff on most computer products of 3.9% as does Canada. The EEC tariff will fall from the 5.7% effective in 1984 to 4.9% by 1987. Japanese tariffs for GATT signatories range from 8.4% for terminals to 4.6% for printers.

Because of this rationalized nature of MNE activity, most production in Canada is exported and domestic market demand is met primarily through imports. The resultant trade will be in balance only when investment in Canada by MNE's is commensurate with the Canadian market. That is, when investment is at a level where the annual value of production in Canada exceeds the annual domestic demand. The trade deficit in this sector in 1982 was $1.8 billion and rapidly rose to $3.1 billion by 1984. MNE investment has not been commensurate with the size of the Canadian market, nor has it grown as rapidly.

There are counterparts to small Canadian-owned firms in all western countries pursuing similar strategies of niche marketing and facing similar difficulties. As a result governments tend to favour these suppliers and in particular engage in various non-tariff barriers usually based on government procurement.

Technological

The major MNE's are the technological leaders in the sector. They use the products of their subsidiaries to provide the most competitive systems possible. They invest substantial amounts in R&D, (typically 6% - 8% of revenues) usually in their home country, predominately the U.S.

Canadian firms generally have some technical advantage over European and to some degree Japanese firms. This arises primarily from a strong experience in joint activity with U.S. firms. Canadians frequently have attended the same schools as their American counterparts, attend the same conferences and share the same literature. Canadian and American universities are closely tied and share ideas freely resulting in Canadian schools and firms having early and complete access to U.S. developments. European firms, to some degree, suffer from a language problem as the technical literature is predominantly in English. Japan lacks a comparable research tradition within its universities as well as experiencing language differences. Continuing access to technology and technological innovation remains, nevertheless, a serious concern for Canadian firms competing against U.S. based companies.

Small firms have access to the integrated circuits of the merchant semiconductor manufacturers and are usually very innovative in incorporating them into final products. Also, these firms provide products which are specialized. Generally, small computer and office equipment companies are considered a valuable resource in terms of research and innovation. Their major resource is their knowledge in a knowledge intensive sector.

3. Federal and Provincial Government Programs

Relatively few specific programs have been targetted at the computer and office equipment sector. Generous use has been made, however, of more broadly based industrial assistance programs.

Specific programs include the Office Communications Systems Development Trials of Department of Communications valued at $13.0 million and also the efforts of DOC to develop and promote the Telidon graphics protocol. The provinces of Ontario and Quebec have each funded the development of educational microcomputers for use in their school systems. These represent efforts to develop an industry based on incentives to local firms.

In the past, the Program for Advanced Industrial Technology (PAIT) and the Enterprise Development Program (EDP) have been used to fund initiatives in this sector. Generally, MNE's have not been interested in this assistance, but there have been a few notable exceptions.

4. Evolving Environment

The basic technology of the sector is the design and manufacture of integrated circuits or IC's. The initial impact of the IC in the 1960's was to change the computer from an almost hand-built, custom product to a mass producted device. As IC's of greater complexity were produced, minicomputers and microcomputers were developed as well as hand-held calculators, digital watches, and numerous other devices. The cost and performance of computers are directly related to the sophistication and packaging density of the IC's within it. Packaging densities, measured in terms of numbers of transistors per IC are expected to increase by 800% over the next ten years. The complexity and capacity of IC's has quadrupled every 2 -3 years. It generally is no more costly to manufacture a dense and complex IC than a relatively simple one. Thus, it can be expected that unit computing power will increase, but costs will remain fairly constant. What passes for a large mainframe computer today will likely be replaced by a desktop unit of higher capacity and lower cost. Companies will face continuing pressure to incorporate new IC's into their products in an attempt to gain a competitive lead or simply keep up. Thus R&D expenditures will always be relatively high for the sector.

Software brings a computer to life and makes it useful. In the 1960's it was assumed that $1 would be spent on software for every $3 of hardware. The software expenditure is now approaching $2 and can be expected to increase. Because of IC's and an efficient technology, hardware is now relatively cheaply produced. Software is knowledge intensive and expensive. It is expected that many companies that are now producing primarily hardware will in 10 to 15 years find that their main product is software. This is already happening to wordprocessor companies.

Targetting is the practice of identifying a sector as "strategic" to national aims and subsidizing its development. Japan, the U.S., the U.K. and other EEC governments have done this in an attempt to develop strong national industries. Japan, in the past, has successfully developed capabilities in consumer electronics and components and is now aiming to do so with computers through the Fifth Generation Project. The U.K. (ALVEY), EEC (ESPRIT) and the U.S. (VHSIC) are doing the same. These projects are aimed at developing entirely new technology in contrast to the private companies' approach of incremental progress on established approaches. For example, the Japanese Fifth Generation Project is aimed at applying artificial intelligence techniques to a wide range of computing tasks. This would bring tools such as expert systems (programs which embody the "expert" knowledge and reasoning paths of a trained engineer for example) or natural language processing to the consumer or business markets. The U.S. VHSIC (Very high speed integrated circuit) project seeks to improve computers by upping the speed of their basic elements by the use of exotic materials such as gallium arsenide or radical redesigns (such as using light rather than electricity). The risks involved in developing radical new technology are major and beyond the resources of most companies in the sector.

Traditionally, the competition to IBM has been the so-called "BUNCH" companies, Burroughs Corp., Sperry Corp. (formerly Sperry-Univac), National Cash Register Corp., Control Data Corp. and Honeywell Inc. These companies have, as IBM does, a long history of producing mainframe computers dating back to the 1950's and 1960's, all of which would run only their own software. In the late 1960's IBM emerged as the clear market leader, a position it has continued to consolidate. When the U.S. government dropped its anti-trust suit in 1982, IBM took almost immediate aim at its Japanese rivals and set a target to become a $100 billion corporation by 1990. From an IBM viewpoint, the results are impressive, IBM's U.S. market share has moved from 59% in 1975 to 76% in 1984. The "BUNCH" companies collective market share declined from 38% to 19% in the same period.

This has prompted a number of reactions among these companies. The most recent is the purchase of Sperry Corp. by Burroughs Corp. Together, their revenues would make the new company, as yet unnamed, the second largest computer company in the world, surpassing Digital Equipment Corporation. In reality with two incompatible and competing product lines and different corporate cultures most likely revenues will fall back considerably. Prior to the merger, Burroughs had gone through a major restructuring and introduced a line of IBM compatible computers. Sperry Corp. had undertaken but not completed a restructuring of corporate activities. NCR has followed a strategy of reducing its involvement

with mainframe computers and focusing on microprocessor based equipment for retail and network systems. Control Data has moved strongly towards IBM compatibility. However, losses in its peripheral products division in 1985 brought it to the brink of financial disaster, Honeywell Inc. now imports its top end DPS-80 mainframe computer from NEC Corp. of Japan. It is now stressing its system expertise and expanding its service activities.

The second level of U.S. companies, the "IBM plug compatibles", manufacture equipment which runs IBM software and connects with IBM equipment directly. The largest, Amdahl Inc. is 49% owned by Fujitsu of Japan. It appears that the Japanese are investing in a number of companies of this type, primarily to gain experience in the service and support functions. Japanese companies have successfully targetted and achieved supremacy in electronic components and consumer electronics. A similar effort is now underway in the computer sector.

After the breakup of AT&T into regional telephone companies, the central company has set an objective of becoming a major player in the computer and office equipment sector. Its resources are considerable, revenues of $35 billion a year vs. $50 billion for IBM, and the Bell Labs, where the transistor was invented and which is a leader in computer research. The convergence of computing and telecommunications in office and factory automation is compatible with AT&T's skills. The transition from a regulated environment to a competitive one will take some time and it is expected that AT&T will not be a major force for four to five years.

5. Competitiveness Assessment

The computer industry in Canada is dominated by the subsidiaries of American-based MNE's. These MNE's operate for the most part in response to world market needs rather than those of Canada. Expansion in this sector implies expanding the level of MNE investment in Canada. This suggests competing for MNE investment with Europe, the U.S. and Japan on the basis of labour costs, land costs, energy costs and other factors.

Canada is competitive with the U.S. and Western Europe in this regard. Differences are sufficiently narrow that decisions may be made on such factors as access to procurement and other government activities. In the past, many MNE's located in Canada in response to Federal and Provincial incentives and to government procurement. Their previous activities in other industrial sectors such as defence and arms production was also a contributing factor.

Because of the small size of the Canadian-owned computer and office equipment industry and domination by foreign multinational corporations, it is unlikely that Canada will become a major world force in the manufacture and sales of computer hardware in the foreseeable future. Canadian opportunities will continue to lie in the identification of market niches and the development of specialist systems or technologies in hardware and increasingly software.

Our smaller Canadian firms may have some advantages over European firms in access to technology. Like all small firms, they have difficulty raising capital and they must operate within the price umbrellas and the technical standards set by MNE's. Within their limitations, however, they are competitive and world class.

Prepared by: Electronics & Aerospace Branch Revised: June 20, 1986

ADM

June 20, 1986

FACT SHEET

NAME OF SECTOR: Office, Store & Business Machines **SIC(s) COVERED:** 318

1. PRINCIPAL STATISTICS

	1971	1980	1981	1982	1983	1984	Estimate Partial 1985
Establishments	31	75	71	92	106	n.a.	
Employment	8,696	13,540	16,161	16,930	15,883	n.a.	
Shipments ($M)	202	889	1,147	1,180	1,283	1,469	1,400
Gross Dom. Prod. (Constant 1971 $M)	n.a.						
Investment ($M)	n.a.	138.9	213.7	212.6	138.6	225.1	322.1
Profits after tax ($ million)	n.a.	18.4	17.2	14.6	22.0	n.a.	n.a.
(% of shipments)		2.1%	1.5	1.2	1.7		

2. TRADE STATISTICS

	1971	1980	1981	1982	1983	1984	1985
Domestic Exp. ($M)	147	739	874	927	1,068	1,377	1,364
Re-Exports ($ M)	23	187	237	260	310	428	518
Domestic Ship. ($M)	55	150	273	253	215	92	36
Net Imports ($M)	387	1,951	2,646	2,884	3,065	4,438	3,987
Cdn. Market ($M)	442	2,101	2,919	3,137	3,280	4,530	4,023
Exp. as % of Ship.	72.4	83.1	76.2	78.6	83.2	88.4	97.4
Imp. as % of Dom. Mkt.	87.6	92.9	90.6	91.9	93.4	96.1	99.1
Cdn. share of Int'l Market							

* Source of imports (Top 4) ($ millions)	U.S.	E.E.C.	ASIA	OTHERS
1981	2,565	160	87	5
1982	2,820	147	71	10
1983	2,922	239	96	22
1984	4,220	315	172	47
1985	3,799	303	224	76

* Destination of exports (Top 4) ($ millions)	U.S.	Japan	EEC	Taiwan
1981	798	111	43	42
1982	915	133	27	44
1983	1,071	145	38	40
1984	1,420	210	80	43
1985	1,494	203	65	45

3. REGIONAL DISTRIBUTION - Average over the period 1980-82

	Atlantic	Quebec	Ontario	Prairies	& B.C.
Establishments - % of total	n.a.	20.0	66.3	4.1	9.6
Employment - % of total	1.8	28.6	60.5	9.1	9.1
Shipments - % of total	n.a.	28.8	69.5	1.7	1.7

4. MAJOR FIRMS

NAME	OWNERSHIP	LOCATION OF MAJOR PLANTS
IBM Canada Ltd.	U.S.	Don Mills, Bromont
Digital Eqt. of Canada Ltd.	U.S.	Kanata
Control Data Canada Ltd.	U.S.	Toronto
Burroughs Memorex Inc.	U.S.	Toronto
NCR Canada Ltd.	U.S.	Toronto

COMPETITIVENESS PROFILE
CONSUMER ELECTRONICS (SIC-3347)

DRAFT

1. Structure and Performance

Structure: -

The Canadian consumer electronics sector includes televisions, video recorders, radios, domestic sound reproduction equipment (turntables, amplifiers, loudspeakers, etc.) and automobile stereo equipment. The Canadian market for this equipment is substantial -- $1.7 billion in 1984 -- but the Canadian supply capability is severely limited and predominantly foreign-owned. The Canadian industry is composed of a group of six T.V. assemblers, one of which manufactures T.V. picture tubes, one car radio manufacturer and some smaller niche producers of stereo equipment and loudspeaker systems. No R&D is carried out by the major suppliers and there is only a limited production engineering capability. All the major plants are in Quebec and Ontario, producing 99.5% of total shipments.

The car radio operation is a Ford subsidiary producing for other Ford divisions, mainly in the U.S. With the exception of Electrohome which is Canadian-owned, all the T.V. assemblers are foreign-owned branch plants and carry out final assembly of parts kits primarily for the domestic market. The T.V. assemblers have concentrated on larger colour sets (20" and 26") which account for 90% of total T.V. shipments. Black and white sets are no longer produced in Canada and are imported, primarily from South Korea. The combined employment of the sector is 2800 of which approximately 1000 are employed by Ford Electronics, 1300 by the T.V. companies and the balance by the stereo and loudspeaker companies.

Most consumer electronics markets worldwide are mature with intense competition among suppliers for market share. Japanese companies now dominate every major market and are recognized to be superior in both quality and technology. This position was achieved during the 1960's and 70's as a result of labour cost advantages and aggressive pricing (the subject of anti-dumping tariffs in the U.S.) which was then used to achieve a lead both in product design and production capability. To maintain the leadership position, Japanese companies have migrated production of older technology products such as radios to other Far East countries with lower labour costs while they have invested substantial R&D funds to develop new products such as VCR's which are now produced in Japan. The major suppliers are all vertically integrated, primarily located in the Far East (RCA and Zenith being the exception in North America) and manufacture in highly automated plants with capacities of one-to-two million units per year. The competition from low cost Far East products has caused adjustment problems for established suppliers in many countries and the result has been either protective measures by governments or defensive investments by the Japanese to ensure continued market access. The defensive investments in offshore assembly plants by the Japanese and lately by the Koreans are generally inefficient, are not vertically integrated, use parts kits supplied by the parents and operate at substantially lower capacities than the parent plants. The Canadian T.V. assembly plants are typical examples of this.

One challenge to Japanese dominance of all markets has been the emergence of Korea as a supplier of older technology products such as portable T.V.'s which are sold as commodity items; using Japanese production equipment and low cost labour the Koreans have been able to gain sufficient market share to establish an efficient producer sector.

The dominant Far Eastern consumer electronics firms depend on significant R&D expenditures to maintain product leadership and on similar expenditures in engineering and automation to achieve low cost production. Major plants all have a high degree of automation, world scale operation and a parts supply infrastructure. The Ford Electronics radio plant and the Mitsubishi picture tube plant have some of these characteristics but the T.V. assembly lines in Canada do not, receiving parts kits from offshore locations, relying on semi-automated techniques in much smaller plants and having little access to export markets as a result of their branch plant orientation.

Performance:

Overall the performance of the sector has been poor with import penetration increasing and employment dropping. Ford Electronics has been the strongest performer in both shipments and exports in the sector as a result of its preferential access to the North American Ford market under the auto pact, exporting $120 million in 1985. The plant is competitive as a result of significant investments in new facilities and the latest manufacturing equipment. The Mitsubishi picture tube plant is the other facility where substantial capital investments have been made. This plant does not have a large captive market and has not been as successful as Ford Electronics. One of its major markets is the U.S. but it has difficulty being price competitive owing to the U.S. tariff wall of 15% against imported picture tubes. At full capacity the plant will be able to supply 10% of the North American market.

The performance of the T.V. assemblers has been severely impacted by price competition from Korean imports which have now had anti-dumping levies imposed against them. In 1985 the combined effect of a turndown in the market and the increased level of import penetration has led to the assemblers operating at 50% of capacity. In 1984 total shipments were 700,000 sets (45% of the domestic market) with 10% of total production being exported to the U.S. The relatively large share of the market held by domestic shipments disguises the real level of import penetration in this sub-sector. The reason for this is that the industry assembles foreign parts, finished products having a Canadian content ranging from 30-40% for 20 and 26" console sets to 10% for 14" sets.

2. Strengths and Weaknesses

a) Structure: -

In consumer electronics the main sources of competitive strength are derived from scale economies and automation, technology, labour cost advantages, a parts supply infrastructure and brand loyalty. To a certain extent labour cost disadvantages can be offset by process technology and automation, particularly for more sophisticated products. Relative to other major manufacturers the two larger Canadian producers, Ford Electronics and Mitsubishi, are only medium sized but they have been able to automate their production processes and adapt them to the available parts supply so that they are competitive in North America. Conversely the T.V. assemblers are not competitive: the plants are small, only semi-automated, relying on imported parts kits, labour costs are high and the brands they produce are Japanese. The one small advantage the companies do have is in the production of console T.V.'s where the product's bulkiness gives the local supplier a slight edge over imports because of transportation costs.

b) Trade Related Factors: -

Consumer electronics trade takes place within a protectionist environment. In Europe a number of measures have been used to protect domestic suppliers and to restrict Japanese market access including the establishment of unique national standards which incorporate patents held by local suppliers and the introduction of import quotas. The United States has imposed anti-dumping tariffs to protect its industry from imports and has also used political leverage to persuade the importers to invest in order to maintain their market access. Japanese exporters have responded to these challenges by locating mature products in low labour cost countries to increase further their price competitiveness, establishing token plants within their main market areas to protect access and retaining manufacturing of new products within their own country.

This environment has led to the creation of a Canadian T.V. assembly industry which focusses on the domestic market and which is inefficient. However, it has also allowed Japanese owned companies to protect themselves from Korean competition through the use of Canadian anti-dumping laws. The remainder of the sector which is permitted to compete openly in the North American market is more successful production costs being comparable to those in the U.S. Ford Electronics which has duty-free access under the auto pact is competitive while Mitsubishi is beginning to establish its market despite a U.S. tariff wall. In the long term the viability of the whole industry depends on its selling to the whole North American market.

c) **Technological Factors** -

Prior to 1980 most of the main producing countries were able to sustain their domestic consumer electronics industries (which were primarily based on colour T.V. production) through the use of patent protection based on unique broadcast standards. With the exception of Japan, this led to a domestic orientation and a lack of competitiveness. However, by 1980 most of the existing patents had expired, the colour T.V. market was saturated and the standards for new products representing future sales were based on products developed in Japan by companies with a strong export orientation. This caused a major change in the environment for all firms in the industry since many no longer had access to the new technologies developed by the Japanese. As a result many have ceased production.

In Canada the producers rely totally on foreign design and production technology. While there is a labour cost disadvantage relative to Far East manufacturers, this can be partially overcome for some products through investments in automation. In this respect two manufacturers, Ford Electronics and Mitsubishi, are automated and the plants are able to compete effectively in North America. The other producers, particularly the three low-volume T.V. assemblers, Electrohome, Hitachi and Sanyo produce on such a small scale that automated techniques are inappropriate.

3. Federal Programs and Policies

The government has played a significant role in the development of the Canadian colour T.V. industry through a duty remission scheme, introduced in 1976, which encouraged the rationalization and restructuring of the existing suppliers and the establishment of the current assembly system. Under the scheme, duty could be remitted on any set imported into Canada which was no longer produced in Canada while T.V. parts could enter duty-free. The program ended in 1983 but assistance to the assemblers was maintained through the preservation of the duty free entry of parts while complete sets are subject to a tariff. T.V.'s from Japan, Korea and the U.S.A. are subject to a tariff of 8.8 to 9.7% and T.V.'s from Korea may be subject to a anti-dumping tariff pending a decision by the Canadian Import Tribunal on March 28, 1986.

Direct assistance has been given to two firms to modernize. Mitsubishi received $7.5 million in 1983 to modernize the T.V. picture tube plant it acquired from RCA and Matsushita received $1 million in 1984 for the alteration of its production line.

4. Evolving Environment

Traditional consumer electronics suppliers viewed the worldwide market as saturated, the product lines mature with future sales coming from the replacement market. The Japanese did not follow this conventional wisdom and have undertaken a process of product innovation and introduction. The most visible result to date is the video recorder but this is likely to be followed by a whole series of Japanese products which will dominate the consumer markets in the 1990's - compact disc players, digital analogue tape recorders, stereo T.V., large screen and high definition T.V. and compact camera recorders. The Japanese are also using their tremendous market presence to make these new products the de facto standard for the whole industry.

Within this environment of increasing Japanese domination of the market, there is however the potential for low cost suppliers to take a small market share. Korea has been successful in the T.V. market and has now entered the video recorder and microwave oven markets while China is beginning to develop its T.V. industry. Some production will still remain in the traditional supplier countries as the developed countries have all indicated a desire to maintain a domestic industry.

In Canada the impact of Korean competition is putting pressure on the T.V. assembly industry and this pressure will increase considerably if Korean products are allowed to enter under the free GPT rate. In relation to other markets, the Canadian market is lucrative and not as protectionist. For these reasons it is attractive to many suppliers and it is possible that further Japanese or Korean firms may invest here in order to improve their access.

5. Competitiveness Assessment

Far East suppliers have significant cost and technological advantages over North American and European manufacturers and in a free market the majority of the industry would be located there. This has not been the case as measures have been introduced in many countries to protect the domestic industries. In Canada this has resulted in a T.V. assembly industry which is inefficient and uncompetitive selling mainly to the domestic market. In contrast the two largest firms in the sector which manufacture for the North American market that are automated and that have a manufacturing process adapted to the parts supply infrastructure are able to compete at least within this environment.

Prepared by: Electronics & Aerospace Branch Date: March 12, 1986

ADM

March 11, 1986

159

FACT SHEET

NAME OF SECTOR: Consumer Electronics (Record players, radio & Television receivers) **SIC(s) COVERED: 3341**

1. PRINCIPAL STATISTICS

	1971	1980	1981	1982	1983	1984	Estimate Partial 1985
Establishments	19	19	15	16	16	n.a.	
Employment	7737	2889	3327	2857	2749	n.a.	
Shipments ($M)	256	352	416	388	417	489	553
Gross Dom. Prod. (Constant 1971 $M)	100	106.8	127.5	111.2	131.1	150.2	
Investment ($M)	8	19.3	13.8	11.5	12.0	20.4	conf'l
Profits after tax ($ million)	(7.4)	24.0	19.5	12.9	22.7	n.a.	
(% of shipments)	(2.8)	6.8	4.7	3.3	5.4		

2. TRADE STATISTICS

	1971	1980	1981	1982	1983	1984	1985
Domestic Exp. ($M)	29	68	86	107	140	171	191
Re-Exports ($ M)	1	6	4	5	5	5	6
Domestic Ship. ($M)	227	284	330	281	277	318	362
Imports ($M)	146	536	698	680	948	1378	1276
Cdn. Market ($M)	372	814	1024	956	1220	1691	1632
Dom.Exp. as % of Ship.	11	19	21	28	34	35	35
Imp. as % of Dom. Mkt.	39	66	68	71	78	81	78
Cdn. share of Int'l Market	Insignificant						

* Source of imports (Top 4) ($ millions)	JAPAN	U.S.A.	So.KOREA	TAIWAN
1981	303	209	70	49
1982	322	198	57	34
1983	497	224	92	36
1984	716	306	146	62
1985	612	340	117	63

* Destination of exports ($ millions)	U.S.	U.K.	Total
1981	63	20	90
1982	85	25	112
1983	131	11	145
1984	173	-	176
1985	193	-	197

3. REGIONAL DISTRIBUTION - Average over the period 1980-82

	Atlantic	Quebec	Ontario	Prairies & B.C
Establishments - % of total	Nil	24.9	64.0	11.1
Employment - % of total	Nil	18.5	78.8	2.7
Shipments - % of total	Nil	12.6	86.9	0.5

4. MAJOR FIRMS

	NAME	OWNERSHIP	LOCATION OF MAJOR PLANTS
1.	Electrohome Electronics	Canadian	Kitchener, Ont.
2.	Hitachi (HSC) Canada Inc.	Foreign	Montreal, Que.
3.	Matsushita Industrial Cda Ltd.	Foreign	Toronto, Ont.
4.	RCA Inc.	Foreign	Prescott, Ont.
5.	Sanyo Industries Canada Inc.	50%Can - 50%Foreign	Montreal, Que.
6.	Mitsubishi Electronics Industries Canada Inc.	Foreign	Midland, Ont. (picture tubes) Waterloo, Ont. (TV receivers)
7.	Ford Electronics Manufacturing Corp.	Foreign	Toronto, Ontario
8.	Apollo Electronics Ltd.	Canadian	Toronto, Ontairo

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

DRAFT - PROJET

COMPETITIVENESS PROFILE

THE CONSTRUCTION INDUSTRY

1. STRUCTURE AND PERFORMANCE

The construction industry is composed of firms and specialized tradesmen engaged, on a contract basis, in the creation, renovation, repair and demolition of immobile structures and the alteration of the natural topography. This profile focusses on the contract construction industry as it relates to new construction. It does not cover the renovations sector. Nor is the real estate development industry included in this profile, although developers do offer significant market opportunities for contractors.

a) Structure

Construction activity totalled $59 billion in 1985 and accounted for 63 per cent of total capital investment in the Canadian economy. The Canadian construction contracting industry, consisting of 110 thousand firms and 587 thousand employees, was involved in providing $38 billion or 65 per cent of construction activity. The balance was undertaken by utility companies, governments and firms not primarily engaged in construction.

The industry consists of general building and engineering contractors who undertake the construction of entire structures and special trades contractors who perform specialized services, such as site preparation, structural (steel or concrete) work, mechanical and electrical and other interior and exterior work under sub-contracts.

General contractors involved in the construction of residential and non-residential buildings, account for 13 per cent of all firms in the industry and 18 per cent of the work performed. Engineering contractors who build structures other than buildings (e.g. power generating plants, bridges or oil and gas facilities) make up 2 per cent of the firms and do 25 per cent of the work. Special trades contractors make up the largest segment in the industry, accounting for 85 per cent of the firms and 57 per cent of the output.

Approximately 5 per cent of firms in the industry each have gross operating revenues of $1 million or more, and these firms undertake 62 per cent of the work. Eighty-five per cent of the firms are relatively small, with revenues of less than $250 thousand each, and undertake about 19 per cent of the work. The small firms tend to operate at the purely local level, while the large firms operate regionally or nationally.

The industry is primarily Canadian owned and controlled. Foreign controlled contractors operating in Canada tend to be subsidiaries of large international firms, such as Bechtel, Fluor and Dumez. A number of these companies entered the Canadian market in order to undertake major resource based projects in Alberta, while others did so because of general market prospects. These companies are maintaining their Canadian operations, but for some, it is on a reduced scale.

The industry in Canada is highly unionized. However, a strong trend towards non-unionization is quite apparent in Western Canada. Labour content currently accounts for one third of the cost of construction.

With respect to international activities, the normal practice for contractors who wish to enter into foreign markets would be to establish a joint venture with a local company or to incorporate a subsidiary and establish an office or network of offices in desirable market locations in the foreign country. International construction activity consists in the provision of management services and some of the material and equipment required for the construction project. The labour component is sourced locally and the balance of the material and equipment is sourced from the most competitive location. Monetary returns to Canada resulting from foreign activity would cover the cost of management services, Canadian sourced material and equipment and profits.

The Canadian industry is basically oriented to the domestic market. A small nucleus of Canadian-controlled contracting companies, the largest of which is PCL Construction Limited, has operated in the U.S. market for a number of years, usually through subsidiaries. In addition, some Canadian-based firms, mostly controlled by foreign interests, have tended to undertake work in developing countries. While official statistics are not available on Canadian activity abroad, it is estimated that $800-900 million in foreign contracts annually are carried out by Canadian firms. The share of the Canadian market serviced by the Canadian subsidiaries of foreign firms is not known.

Statistics are also not available on the size of the world construction market. It is, however, estimated that the top 250 international firms operating in this market, such as Bechtel (U.S.), Impresit (Italy), SAE (France), and Philipp Holzmann (FRG), undertake contracts totalling U.S. $100-135 billion per year. It is further estimated that the value of this international work may account for 15 to 20 per cent of the total construction activity undertaken by firms in the developed countries.

b) Performance

Traditionally, construction contributes approximately 6-7 per cent of gross domestic product, but the industry is particularly sensitive to the business cycle. With the recent slowdown in the economy, construction output showed almost no growth from 1981 to 1984. The downturn led to a higher than normal number of company closures, which, in turn, has resulted in a stronger leaner sector, with increased productivity and improved profitability. Estimates indicate that the value of construction work performed in 1985 increased to $59 billion or 5 per cent above the preceding year. The industry normally accounts for 5-6 per cent of Canada's employed labour force. Construction industry employment in 1985 was 587 thousand, some 10 per cent below the peak year of 1981.

2. INDUSTRY STRENGTHS AND WEAKNESSES

a) Structural

The industry is highly fragmented with a large number of both large and small participants. The majority of firms are specialized and technically competent, whether it be in the managerial skills of the general contractor, or in the very distinct trade related skills involved in site preparation, carpentry or plumbing or painting. Despite some barriers to interprovincial activity in the form of provincial purchasing and hiring practices, the industry is well developed in all regions. There is a high degree of competition across Canada resulting in an efficient industry. The larger firms are more broadly based in terms of skills and therefore more capable of undertaking larger, more complex projects in the domestic market. Generally, however, construction firms lack the size, the special managerial skills and the financial strength to operate beyond the Canadian border.

In Europe, and to a certain extent in the U.S., construction companies and engineering firms have merged with or acquired firms in the other discipline, giving these companies strong in-house capability in both engineering and construction. The fact that these two sectors have evolved quite independently of each other is considered a weakness for the Canadian industry and one which has affected its success in the world market. It is believed that the development of improved working relationships, perhaps through joint ventures between consulting engineers and contractors, would strengthen Canada's engineer-procure-construct (EPC) capability and be of benefit in competing not only in the domestic market but in foreign markets as well.

Given the weakness in managerial and marketing skills, financial strength and EPC capabilities, Canadian-owned or controlled firms, by and large, are unable to operate effectively in the higher risk international market, or to undertake complex domestic projects with a capital cost of $100 million or more. As a result, there has been limited development of Canadian capabilities to act as prime contractor in major projects, for example, in the energy-related sector. Some particular fields include:

electric power generation and transmission (even though this is an area of strength for Canada's consulting engineers); conventional hydrocarbon exploration; heavy oil development; pipelines; and hydrocarbon processing and petrochemicals.

The fact that much of Canada's industrial base is U.S. owned or controlled has influenced the establishment of foreign-controlled construction companies in Canada. The U.S. parent companies have worked over the years with U.S. contractors in their local market. When these U.S. parents sought to establish or expand their Canadian operations, there was an understandable tendency for them to engage the same U.S. contractors rather than employ Canadian firms whose track record was unknown to them. In this way, the major U.S. firms - Bechtel and Fluor among others - gained a strong foothold in the Canadian market, particularly in the resource based sectors.

b) Trade Related Factors

As indicated earlier, normal practice for contractors seeking to engage in international markets is either to establish a joint venture with a local company or to incorporate a subsidiary in the other country. This has been the case with Canadian and U.S. contractors undertaking transborder activity, although operation through a subsidiary appears to predominate. Any problems or constraints should be viewed in the context of foreign investment rather than of trade in services. As there are generally no problems relating to the right of establishment in this sector in either country, companies on both sides of the border have essentially free access to each other's market.

No tariff barriers apply to the provision of contracting services. The principal non-tariff barrier affecting the industry's prospects in developed country markets is government procurement practices. Government procurement of construction services represents a considerably larger market in the U.S. than in Canada. Opportunities for Canadian contractors could be significantly increased with the removal of "Buy America" and local preference policies at the state and municipal levels. Some skepticism has, however, been expressed in the industry concerning the prospects for achieving meaningful liberalization of such policies, given their entrenched nature.

Most other non-tariff barriers that affect the industry are more in the nature of irritants or nuisances. They apply equally to all foreign and out-of-state/province competitors. They discriminate between contractors that are located within a state or province and those that are not. These barriers include:

i) Employment practices in Quebec and in Northern Canada giving preference to local and native peoples, and in the U.S., minority labour laws and hiring requirements exist;

ii) Building codes and construction materials that differ by country, province and state;

iii) Immigration regulations that prevent or hinder the transborder flow of professional and managerial personnel, as well as skilled tradesmen.

A recent consultant's study commissioned by the Department of Regional Industrial Expansion, Service Industries Branch indicates that the benefits to Canada from foreign construction contracts may average as high as 60 per cent of the construction contract value. While concrete evidence is difficult to obtain, many industry leaders are of the view that the range and level of government support for export activity in this sector are better in other developed countries. The terms and Canadian content provisions for export financing can be important factors in obtaining international contract work. However, strengthening the structural weaknesses in the Canadian industry would appear to be more critical at this time to improving contractor performance in foreign markets.

c) Technological Factors

Technological change in construction does not come through dramatic breakthroughs, but tends to be a gradual process. It includes a wide variety of individual developments in materials, equipment and methods. Much of the new technology, especially as it relates to materials and equipment, originates outside Canada and, in fact, outside the construction industry, Examples would include gypsum drywall from the U.S., the tower crane and prestressed concrete techniques from Europe. Any new technology is, however, readily accessible to the Canadian industry.

The industry on both sides of the border uses constantly advancing state-of-the-art technology in terms of its machinery, equipment and materials. This situation is not expected to change in the future.

3. GOVERNMENT POLICIES AND PROGRAMS

Traditionally, public procurement of construction has accounted for about one third of total expenditure on construction. Provincial governments as a group have accounted for the largest share of construction services purchased (50%), followed by municipal governments (30%) and the federal government (20%). Most of this government work would be contracted out to the private sector.

The federal government influences the overall domestic and international performance of the construction industry through a wide range of policies (i.e. taxation, procurement, immigration, housing, and environment) and programs such as manpower planning and training, the Export Development Corporation (EDC), Canadian International Development Agency (CIDA) and Program for Export Market Development (PEMD). The construction industry is generally not eligible for assistance under DRIE's Industrial and Regional Development Programs (IRDP).

The provincial governments have jurisdiction over labour in such areas as the apprenticeship program for construction tradesmen. There are provincial building codes and standards that must be adhered to in the construction process. In addition, most provinces have Departments of Housing that work closely with the Canada Mortgage and Housing Corporation on housing programs, particularly in relation to social housing.

4. EVOLVING ENVIRONMENT

The average annual rate of growth in the construction industry as a whole is expected to be somewhat slower (3.2 per cent) in the period 1983-92 than over the past 20 years (3.8 per cent). Little structural change is anticipated. On the housing side, small local firms may become more prevalent because of the decreasing importance of large scale speculative building and a probable increase in renovation and conversion activities.

Foreign markets have been particularly important outlets for contracting firms in all developed countries as a means of maintaining an adequate level of business activity and profits, and retaining key personnel. However, the state of the world economy, debt problems arising from high oil prices in the past and the recent slump in oil prices, are causing the cancellation or postponement of many projects and a shrinkage of the construction market in most developing countries. Consequently, while foreign opportunities do exist, particularly in Asia and in oil producing countries, the volume of business available is much smaller than it has been, and the competition from American, European and some Asian builders is becoming more intense. Nonetheless, given the low level of foreign construction activity undertaken by Canada compared with other developed countries, it would seem that there are significant opportunities for increasing foreign activity, particularly if Canadian contractors can restructure and acquire the necessary scale and skills to be competitive in the international market.

It appears that the use of non-union labour will continue to increase in the Canadian construction industry. Over time, if a significant differential persists between union and non-union wages and benefits there could be a moderating influence on the cost of construction.

5. COMPETITIVENESS ASSESSMENT

The large number of contracting companies, both large and small, as well as extensive specialization among the trades, such as mechanical, electrical and site preparation have ensured a highly efficient and competitive contract construction industry in Canada. A few companies with the technical and managerial skills needed for international work have been successful in foreign markets. Generally speaking, however, Canadian contractors have not developed the corporate size, the financial capability, the international marketing skills or the experience of their international competitors.

Prepared by: Service Industries Branch
DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

Assistant Deputy Minister
Consumer Goods, Services and Resource Processing

Date: JUN JUIN 6 1986

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

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FACT SHEET

THE CONSTRUCTION INDUSTRY

SECTOR: The Construction Industry **SIC:** 401, 402, 411, 412 421 to 427 and 429

1. PRINCIPAL STATISTICS

	1981	1982	1983	1984	1985
Contractor Establishments	106,000	113,205	110,845	N.A.	N.A.
Employment	651,000	597,000	566,000	572,000	587,000
Total Value of Construction ($M)	56,881	56,065	56,098	56,130	58,962
- Performed by Contractors	39,360	36,869	37,606	36,435	38,125
- Performed by other sectors**	17,521	19,196	18,492	19,695	20,837
Exports ($ million)	800e	800e	800e	900e	900e
Imports ($ million)	N.A.	N.A.	N.A.	N.A.	N.A.

* Total value of construction is used as "shipments", data are not relevant to this sector.
** i.e. governments, utilities and other sectors using own labour force.
e - estimated
N.A. - not available

2. FOREIGN TRADE

*Source of Imports

1982	- E.E.C	N.A.
1983	- Asia	N.A.
1984	- Others	N.A.

*Destination of Exports

1982	-	N.A.
1983	-	N.A.
1984	-	N.A.

3. REGIONAL DISTRIBUTION (1983)

	Atlantic	Quebec	Ontario	Prairies & B.C.
Establishment - % Total	6.5	17.2	36.2	40.1
Employment - % Total	8.1	18.4	34.5	39.0
Work Performed - % Total	6.0	19.6	32.9	41.5

4. MAJOR FIRMS

Name	Ownership	Location of Major Plants	Concentration (% of Domestic Market)
PCL Construction Limited	Canada	Alberta	N.A.
Cana Construction Co. Limited	Canada	Alberta	N.A.
Fluor Canada Limited	U.S.	Alberta	N.A.
Ellis-Don Limited	Canada	Ontario	N.A.
Stearns Catalytic Limited	U.S.	Alberta	N.A.
Banister Continental Limited	Canada	Alberta	N.A.
George Wimpey Canada Ltd.	U.K.	Ontario	N.A.
A. Janin & Company Ltd.	France	Quebec	N.A.

Source: Statistics Canada publications.

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DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

COMPETITIVENESS PROFILE

CONSTRUCTION MACHINERY AND MATERIALS HANDLING EQUIPMENT

1. STRUCTURE AND PERFORMANCE

This sector encompasses manufacturers of the following products:

Construction Machinery, including a) Heavy Construction Machinery, most of which is employed either for the extraction and movement of earth and its composites or for the construction and maintenance of roadways; and b) Other Construction Equipment, which includes light machinery or equipment employed by contractors at construction sites, and machinery for the preparation of construction materials (such as concrete or asphalt); and parts for this machinery, and

Materials Handling Equipment, including all types of mechanical equipment which moves goods from one point to another, such as conveyors and conveyor systems, cranes and hoists, industrial lift trucks, elevators, and parts for this equipment.

Both sub-sectors utilize the same production technologies, compete primarily on customer service and price, and offer a range of standard products. However, the wider range of products supplied by the materials handling sector, and the greater need for its products to be custom designed, have led to a less concentrated industry in which there are no manufacturers offering a full range of products.

a) Structure

There are approximately 175 manufacturers in the sector in Canada, and most of these are classified into SIC Code 3192 - Construction and Mining Machinery Manufacturers. Total direct employment is estimated to be 10,000 people. Firms are concentrated in Ontario (44%), the Prairie provinces (23%), and Quebec (18%).

Industry shipments in 1985 totalled $1.6 billion, including $565 million in construction machinery. Exports by the industry reached $685 million, and imports into Canada totalled $1.7 billion. The trade deficit over the last three years has averaged over $700 million.

Interest rates and the consequent level of plant and industrial investment and of general construction activity are the key determinants of demand in both sub-sectors. In addition, plant modernization expenditures are significant to the health of the materials handling sub-sector.

Recent economic downturns, coupled with increasing pressure from offshore producers, have forced the North American industry to restructure and streamline its operations. These actions have significantly reduced the range of machinery produced in Canada and have led to the loss of employment opportunities in the Canadian industry. For instance, excavators, escalators, hydraulic rough-terrain cranes, and certain classes of forklifts are no longer manufactured here. Important producers, such as FMC and Orenstein & Koppel, have abandoned plants originally set up to serve only the Canadian market.

In general, there are three types of firms in the Canadian industry. These are:

1. Export-Oriented Firms Typically, these are firms that have concentrated on well-defined export market product niches and have been able to use a base of Canadian sales to support their entry into international markets. The most outstanding example is Champion Road

   Machinery, which competes around the world with its full line of road graders.

   Firms in this category comprise approximately ten percent of the total number of firms in the industry. Most, but not all, are Canadian-owned. Together, they account for approximately 30 percent of industry shipments.

2. Rationalized subsidiaries of U.S. multinationals These are establishments which have a North American (or world) mandate for the **manufacture** of some elements of the parent's product line. For example, Caterpillar, Clark Equipment, and Dresser Industries' International-Hough Division have taken advantage of the provisions of a duty remission order to undertake production of world requirements for part of their wheeled front end loader product lines on a rationalized basis at their Canadian facilities.

   Approximately five percent of the firms in the industry fall into this category. These rationalized plants account for approximately 30 percent of Canadian production and of Canadian exports.

3. Firms which focus on the Canadian market Included in this category are those foreign-owned plants which have not moved to product mandating (such as Jervis B. Webb), as well as equipment and parts suppliers who have been successful in supplying Canadian market demands but rarely pursue export market opportunities. This category contains the majority of firms in the industry (85 percent).

   Many of these firms are Canadian-owned operations whose production is less capital-intense, is often geared to regional markets, and is not limited to construction and materials handling machinery. Particularly in the materials handling equipment sub-sector, a number of Canadian firms, such as Provincial Crane, Sellick Equipment, and Northern Elevator, have been able to develop successfully. A common evolution for such firms is to begin as parts manufacturers, eventually supplying O.E.M. requirements, and to gradually expand into a wider range of related products incorporating improvements developed with the company's own resources.

International trade in construction machinery and materials handling equipment is dominated by large multinationals. These firms emphasize the large-scale assembly of a line of standard products, where important scale economies are attainable in production, in distribution, and in after sales service. Traditionally, large U.S. firms have controlled the North American industry. The Canadian plants of these multinationals still account for an estimated 50 percent of Canadian shipments, and for an even higher percentage of Canadian export activity. European and Asian manufacturers have recently increased their activity in the North American market. Several European firms have established or purchased production facilities in Canada, but no Asian companies have yet begun manufacture in Canada.

b) Performance

The Canadian market for construction and materials handling equipment was particularly hard-hit by the recent worldwide recession. After growing at a real annual rate of 4 percent between 1973 and 1980, Canadian demand fell by 49 percent in real terms between 1980 and 1983. The most dramatic decline was in the construction equipment market, where demand fell by 53 per cent. The materials handling equipment market, buoyed by sustained demand for elevators and parts, fell by much less (41 per cent). In 1985, the combined market for construction and materials handling equipment in Canada was an estimated $2.7 billion, representing only 79 percent of the real peak market levels attained in 1980.

Since 1973, **shipments** by Canadian manufacturers have shown steady annual growth of just under 3 percent in real terms. Although shipments did fall by 26 percent between 1980 and 1983, by 1985 the industry's output had recovered to within seven percent of pre-recession levels, with total shipments estimated at $1.6 billion.

Canadian **exports**, which totalled $685 million in 1985, are primarily to the United States market (approximately 80%). Export sales now account for almost half of all shipments. This increase has been most dramatic in the construction machinery sub-sector, where exports now account for well over 60 percent of total shipments, versus only 30 percent in 1973. Despite this improvement in export orientation, Canadian-manufactured heavy construction machinery has held a steadily declining share of U.S. imports (they now account for less than 20 percent versus over 30 percent of U.S. imports in the early 1970's).

Eighty percent of **imports** into Canada are from the United States, primarily from firms with a manufacturing presence in Canada. Since 1980, both Asian and European producers have doubled their import share (to a combined total of 19 per cent), at the expense of some of these American firms. While imports bore the brunt of recent declines in the Canadian market, falling by 52 percent in real terms between 1980 and 1983, they have since rebounded and again hold over 60 per cent of the Canadian market. By 1985 the trade deficit in the sector had again risen to over $1 billion.

2. STRENGTHS AND WEAKNESSES

a) Structural Factors

This is basically a mature industry sector in which there is excess capacity worldwide. Recent tariff reductions, and the growth of low cost Asian imports backed by world-scale production operations have forced multinational corporations to re-assess the rationale for separate production facilities in Canada. All of the major North American manufacturers have had to adapt their product lines and to actively seek outside (and usually offshore) sources for components in order to meet increased price competition.

In those facilities concentrating on custom-engineered products, economies of scale are not usually significant, and plants serving primarily the Canadian market can continue to be competitive as tariffs decline. However, the assembly of heavy vehicles and other standard products is still the backbone of production in this sector in Canada, and much of the multinational activity remaining has been encouraged by duty remission schemes that lose their appeal as tariffs continue to decline.

Manufacturers in Canada have capacity available to meet anticipated levels of growth in demand without any significant investment in physical plant and equipment. Multinationals which have assigned product mandates to their Canadian operations have also committed to significant investments in world-class production technologies that allow these facilities to capture the economies of scale necessary to stay competitive.

Most firms which focus on the Canadian market possess the full range of manufacturing capabilities and many have also retained good engineering support, although they are not large enough to capture economies associated with world-scale production or distribution. Total production costs in Canada are competitive with those at other North American and European locales. However, significantly lower labour costs per unit (based on lower wage rates and higher labour productivity), and favourable exchange rates have allowed Japanese producers to place comparable equipment into the North American market at price advantages of 20 to 30 percent.

b) Trade-Related Factors

Most branch plants were established in Canada when tariff rates were from 20 to 22 per cent. Where still applicable, tariffs into Canada will decline to 9.2 per cent in January 1987. Tariffs on comparable Canadian products entering the U.S. market will then be 2.5 to 3 percent. Overall, the Canadian industry has been dependent on a high level of tariff protection relative to that enjoyed by the U.S. industry.

Preferential buying legislation serves as an effective non-tariff barrier in both Canada and the United States. Product safety and performance standards, on the other hand, are rarely a hindrance to U.S.-Canada trade, since the U.S. standards are a de facto standard for all North American production.

Tariffs into the EEC (6.5% for earthmoving machinery, 5.8% for materials handling equipment) are lower than Canadian rates, and although EEC non-tariff barriers are fairly standard (e.g. engine emission standards), Canadian manufacturers have experienced some difficulties in obtaining the product certifications necessary to enter the European market. Similarly, while Japanese tariffs are only from 3% to 5%, Japanese product safety codes are much more elaborate and involve a much longer processing time.

c) Technological Factors

Product technology has been affected by market developments such as the downsizing of products and the introduction of sophisticated electronic controls, and by trends such as plant automation and the adoption of just-in-time inventory systems by customer industries. Newer product technologies are usually developed and implemented in the United States before they are incorporated in Canadian products or demanded by customers in Canada.

Export-oriented companies (whether Canadian-owned or U.S. subsidiary operations) normally undertake their own research and development in Canada. However, rationalized subsidiary plants of U.S. multi-nationals have only a production mandate, rather than a product development mandate, and have limited autonomy for independent research and development, and rarely conduct research and development here.

The pace of technological change has not been an important factor in the "mature" products such as road graders, forklift trucks, skid steer loaders and road compactors. In the manufacture of custom-engineered products such as automated materials handling systems and robotic-controlled cranes, companies compete primarily on the incorporation of advanced technologies in their products. Here, foreign subsidiaries which focus on the Canadian market benefit from direct access to the considerable R&D efforts of their parent organizations.

3. GOVERNMENT PROGRAMS AND POLICIES

Manufacturers of construction machinery and materials handling equipment benefit from the provisions of the **Machinery Program**, which ensures that the full duty is applied on imported equipment similar to that which is manufactured in Canada. Many of these firms are also assisted in rounding out their product line by receiving remission of duty on imported machines and components not manufactured in Canada. On the other hand, there are also some products in this sector which are imported duty free into Canada under "end use" tariff items designed to lower costs in the resource processing industries (notably mining).

The **Front End Wheel Loader Remission Order**, introduced by the Federal Government in 1980, has enabled several manufacturers of front end loaders to rationalize production with their U.S. parents, resulting in a significant improvement in competitiveness.

4. EVOLVING ENVIRONMENT

Major threats to expanded Canadian participation in this sector include the growing domestic acceptance of offshore equipment design, such as the smaller (downsized) excavators which are claiming a larger share of the North American market; the emergence of aggressive Japanese competitors (Komatsu, Hitachi, Mitsubishi, Kawasaki, J.S.W., Marubeni, etc.), who have developed a proven record of adaptability, productivity and lower costs; a growing trend for U.S. multinational firms to transfer production to lower-cost offshore facilities; and the very strong U.S. dollar, which has aided the further penetration of North American markets by European and Japanese producers.

The general outlook is for minimal market growth in Canada and in the United States. There will, however, be more favourable growth in certain markets for materials handling equipment, such as the automotive (Honda, Hyundai, GM) and steel industries.

In the medium term, U.S. and Canadian manufacturers will continue to be under pressure to rationalize their production, to seek further sourcing abroad and to enter into joint ventures or licensing agreements in order to ensure their viability and access to markets. Opportunities for success will lie increasingly with firms who are able to specialize in narrow market niches, cater to special end uses through custom engineering of products (using CAD/CAM), and participate in trends such as the modularization of engineered products by the major machinery assemblers.

For their part, the manufacturers of Japan and other Pacific Rim nations are now facing political pressure to locate production facilities in those

markets where they have gained a substantial share. The Canadian industry's capabilities and the positive investment climate here should assist domestic firms in forging working partnerships with some of these offshore firms that could revitalize the production of construction machinery and materials handling equipment in Canada.

5. COMPETITIVENESS ASSESSMENT

Most Canadian manufacturers of construction machinery and materials handling equipment survived the last recession intact, and many are competing successfully in domestic and export markets. The performance of export-oriented firms such as Champion Road Machinery, Pullmaster Winch, and Mathews Conveyer provides ample evidence of the ability of Canadian firms to be internationally competitive in this manufacturing sector when they compete in well-defined product niches. Another significant portion of the Canadian industry, namely those plants producing part of their parent's product line on a rationalized basis with a North American or world mandate, are also internationally competitive.

Unfortunately, several developments in the international industry pose a threat to the continued viability of the Canadian industry, primarily because of the industry's dependence on the technology of U.S. firms. The major U.S.-based firms which control the largest manufacturing facilities in Canada and employ the majority of the Canadian industry's workforce (either directly or via sub-contracting) have recently lost North American market share to aggressive Pacific Rim and European competitors. Their response has been to introduce cost-reduction systems, to lay off workers, and to close several plants. Today, these firms are looking increasingly to offshore producers for components and even for complete vehicles to be retailed as part of their own product lines. It is not clear that these firms will make the additional investments necessary to keep their Canadian plants competitive.

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Department of Regional Industrial Expansion

Assistant Deputy Minister
Capital and Industrial Goods

DATE: June 26, 1986

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

FACT SHEET

CONSTRUCTION AND MATERIAL HANDLING EQUIPMENT **S.I.C. 3192 (1980)**

1. PRINCIPAL STATISTICS

	1973	1980	1981	1982	1983	1984	1985
Establishments				181	183	170e	175e
Employment				9149	7933	9500e	10000e
Shipments ($ million)	413	1232	1262	1324	1214	1435e	1638e

2. TRADE STATISTICS

	1973	1980	1981	1982	1983	1984	1985
			($ millions)				
Exports	82	379	547	466	591	692	685
Domestic Shipments	331	853	716	858	623	743e	954e
Imports	560	1609	1556	964	973	1309	1729
Canadian Market	891	2462	2272	1822	1596	2052e	2683e
Exports as % of Shipments	9%	31%	43%	35%	49%	48%e	42%e
Imports as % of Dom. Market	63%	65%	68%	53%	61%	64%e	64%e

	U.S.	E.E.C.	ASIA	OTHERS
Source of Imports				
1981	88%	6%	4%	2%
1982	85%	8%	4%	3%
1983	85%	8%	5%	2%
1984	78%	11%	8%	3%
Destination of Exports				
1981	63%	7%	3%	27%
1982	67%	7%	6%	20%
1983	71%	5%	5%	19%
1984	79%	2%	5%	14%

3. REGIONAL DISTRIBUTION - most recent year available - 1983

	Atlantic	Quebec	Ontario	Prairies	B.C.
Establishments	3%	18%	44%	23%	12%
Employment	1%	14%	57%	20%	8%
Shipments	2%	11%	59%	21%	7%

4. MAJOR FIRMS

NAME	OWNERSHIP	LOCATION OF MAJOR PLANTS
Construction		
Champion Road Machinery	Canadian	Goderich, Ont.
Caterpillar Canada Ltd.	American	Brampton, Ont.
Clark Equipment Canada	American	St. Thomas, Ont.
Materials Handling		
Jervis B. Webb Co.	American	Hamilton, Ont.
Provincial Crane (AMCA)	Canadian	Niagara Falls, Ont.
Dresser Canada Inc.	American	Mississauga, Ont.
Northern Elevator Co.	Canadian	Markham, Ont.
Mathews Conveyer (Rexnord)	American	Port Hope, Ont.
Thomas Equipment Co. Ltd.	Canadian	Centerville, N.B.
Sellick Equipment Co.	Canadian	Windsor, Ont.
Pullmaster Winch Corp.	Canadian	Surrey, B.C.

e = Estimated by Machinery and Electrical Equipment Branch, DRIE

DRAFT - PROJET

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

COMPETITIVENESS PROFILE

CONSULTING ENGINEERING SECTOR

Three industries develop capital projects in Canada and abroad: consulting engineering, construction and real estate development. This paper assesses the international competitiveness of the consulting engineering industry.

1. STRUCTURE AND PERFORMANCE

The industry, which is almost entirely Canadian owned, is comprised of firms primarily engaged in providing professional engineering services in respect of the planning, design, construction and operations/maintenance of buildings and other capital facilities. As well, consulting engineers undertake environmental assessments, study feasibility, and provide a variety of scientific and technical services such as fisheries management services, traffic flow analyses, facilities information management (FIM) services, and many more. These "unbundled" specialized engineering services, which are sometimes referred to as "soft engineering", are not tied to capital projects.

Consulting engineering firms are ones "primarily engaged" in providing consulting engineering services. Such services, however, are also provided "in-house" by a variety of agencies which are not primarily engaged in consulting engineering work. These include government departments, public utilities and Crown corporations, foreign parents of Canadian subsidiaries and numerous domestic manufacturers and resource processors. The engineering arms of many of these agencies are active in export markets, and some (see attached fact sheet) are significant international players. Data reported in this profile are only for firms actually classified by Statistics Canada as consulting engineering firms, since reliable data on in-house engineering operations and their exports is not available. The analysis, nevertheless, is thought to apply to the whole of the industry. Altogether, in-house engineering is estimated (roughly) to comprise one-half of all engineering work.

The industry is linked with other sectors in important ways, playing a key role in the transfer of technology into Canada and affecting the productivity of operations in a large number of sectors. It is also critical to the export of Canadian manufactured equipment in such sectors as electric power development, transportation, mining, forestry and communications.

In 1982, the most recent year for which complete data are available, the industry employed 54,500 persons in 3,200 firms with a payroll of $1.78 billion and total billings to clients of $3.42 billion. Export sales for that year are estimated at $404 million. Sixteen large firms, each employing more than 500 persons, accounted for 44 per cent of industry employment, while about 80 medium-sized firms, employing between 100 and 500 persons, accounted for an additional 34 per cent. Ninety-seven per cent of the industry's firms, accounting for 22 per cent of employment, employed fewer than 100 people. The size and capabilities of the firms involved in export markets varied considerably. Most small firms sold their services only at the municipal or provincial level, but a few, perhaps 150 altogether, offered specialized services and competed in international markets.

Currently, the industry is recovering from the last recession, which hit extremely hard and still is not over. From the peak of activity in the summer of 1981 to the bottom of the trough in the winter of 1984, employment in the industry fell by about 30 per cent. By the second quarter of 1985, industry employment had recovered to about 90 per cent of the pre-recessionary peak levels, but then it fell off again in the second half of 1985.

Firms secure access to foreign markets in a variety of ways. Many smaller establishments maintain no formal presence abroad but sell directly from head office. Larger concerns often maintain a formal presence in the form of a branch office, or associated and affiliated companies. The question of "right of establishment" is crucial to firms seeking to secure market access by this mode. A third way of exporting is of growing importance in Third World markets. In this mode an indirect presence is maintained by building a network of contacts and forming short or long-term alliances of a formal or informal nature in order to access the information and expertise needed to prepare successful bids on short notice. Often the result is a joint venture, but strategic alliances also serve other purposes.

Fifteen Canadian consulting engineering firms ranked among the top 200 international design firms in the 1984 survey of the Engineering News-Record (ENR), reporting foreign billings of $287.3 million. By contrast, foreign design firms listed among the world's 200 largest billed only $27.9 million in the Canadian market, with American firms obtaining 70 per cent of the work. Adjusting these figures for the exports of smaller firms not included in ENR's survey and for the billings in Canada of foreign construction firms like Bechtel and Fluor for their engineering work, in 1984 Canadian foreign billings exceeded billings by foreign firms operating in Canada, a sort of "balance of billings" for the industry, by an estimated $260 million. In just its trade with the United States, however, the Canadian industry is annually in deficit in its balance of billings, mainly on account of U.S. involvement in large Canadian projects in the oil and gas field.

With 80-90 per cent of today's projects occurring in the Third World, market diversification has become crucial to success. Canada's most important markets are in Asia, Africa and the U.S., with each market accounting for about a quarter of foreign billings. Our share of the consulting engineering work available to foreign firms in each of these markets is, respectively, 9.1, 9.4 and 70 per cent. In Asia, which has been the world's fastest growing market during the 1980s, Canada actually increased its share from 5.8 to 9.1 per cent between 1982 and 1984. Altogether, in 1984 Canada had more than an 8 per cent share of the world market. Only the U.S. and Great Britain had larger shares, with 31 and 15 per cent respectively of the market.

2. STRENGTHS AND WEAKNESSES

a) Structural Factors

The Canadian sector is not strong in delivering turnkey projects. Canada's consulting engineering firms compete for work in international markets with large construction firms like Bechtel of the U.S., Philipp Holzmann of West Germany and Hyundai of Korea. Employing at times 40,000 or more employees, these giants use their own construction crews to construct facilities that they have also designed, often at an agreed upon fixed cost. Such firms tend to be vertically integrated, supplying materials, construction equipment and specialized capital goods (generators, turbines, etc.) for installation or utilization at project sites. They also undertake R&D and use proprietary technologies when building. Their specialization is in an ability to provide the full range of engineering, procurement and construction (EPC) services on a "turnkey" basis, i.e. for a contract price agreed upon and fixed in advance. Because they have so many of the variables of project development under direct corporate control, these firms are able to assume the large risks involved.

By contrast, Canadian consulting engineering firms are not vertically integrated and do not supply or install their own materials, equipment and capital goods at project sites. When they build, as opposed to planning and designing a facility, Canadian firms almost always subcontract actual construction, limiting themselves to providing construction management services. In the absence of vertical integration it is financially difficult for them to assume the high risks (and rewards) of turnkey projects. Also, some corporate attitudes and practices do not lend themselves to the fixed-cost basis of turnkey projects. Canadian firms present themselves to clients as "professional engineers" (as opposed to builders) who work on the basis of fees for actual services provided and promise independent advice. Actual services rendered (and, therefore, the ultimate bill) must reflect a client's needs as these become apparent during development of a project.

In the past the lack of a turnkey capability was regarded as a key competitive disadvantage. However, it may be that this factor will not have the same significance in the future. Oil prices have fallen and many megaprojects have been cancelled. The World Bank and regional development banks are progressively moving away from funding turnkey projects and favouring joint ventures that transfer technology. In fact, what was once a weakness could become a source of strength as Canada's non-integrated firms might be more flexible and better able than the integrated construction giants to build the networks of contacts and alliances that are becoming the basis of success in today's markets. On the other hand, if world oil prices and markets for turnkey and megaprojects recover, then Canada's weakness in this area would again translate into lost opportunities.

As the industry evolves, there are likely to be many opportunities for small and medium-sized firms with specialized world-class capabilities to design and build (in the sense of providing construction management services) facilities in coming years and to sell technical expertise in global market niches. Small firms will sometimes be able to rely upon good professional reputations to bring in this work, but usually they will need to develop improved marketing capabilities and financial resources before seeking niches. A stronger trading house sector could help introduce more firms to foreign markets.

Canada's sector-specific export strengths are in electric power development, transportation, mining, forestry, municipal, and communications engineering. Canadian capabilities in developing capital projects at remote sites with hostile environments are probably not paralleled anywhere in the world. Our key strength, however, is the industry's good reputation for offering genuinely independent professional advice on a wide range of technical engineering matters, coupled with the absence of a Canadian colonial past. Both help Canadian firms obtain work in the Third World. The industry would need to strengthen its capabilities in manufacturing and process engineering, particularly in CAD/CAM, robotics and other advanced technologies, in order to compete more effectively in markets in industrialized countries.

b) Trade Related Factors

The provision of consulting engineering services is subject to neither the GATT nor tariffs. However, in some cases non-tariff barriers restrict market access. Often, these trade obstacles are of the nature of "irritants" in that they can be surmounted by knowledgeable business persons. Also, they often have a public policy purpose (controlling immigration, ensuring that services are offered by qualified professionals, promoting the transfer of technology, etc.) other than inhibiting trade.

There are five categories of irritants: 1) preferential procurement practices of governments; 2) examination and licensing of practitioners; 3) immigration controls and work permit requirements; 4) customs practices; 5) duties on goods such as computerized drafting systems that are essential components of trade in engineering services. Beyond irritants there is a sixth category of trade barrier, interference with the "right of establishment". These range from outright prohibition of establishment, to discriminatory taxation, to foreign exchange controls, to regulations about the location of corporate headquarters and the hiring of nationals of the host country. By and large, among indus- trialized countries, trade in engineering services is relatively free and firms face only "irritants". Interferences with the "right of establishment" are fairly common, however, among both developing and newly industrializing countries. Consulting engineering firms use the joint venture approach, on either a project or ongoing basis, to overcome this latter barrier.

A major factor influencing competitive success in foreign markets is the ability to provide project financing on terms at least equal to what other countries can provide. A recent examination by the U.S. Eximbank of different countries' export credit facilities found that Canada is not fully competitive when it comes to long-term financing. This type of financing is heavily subsidized, and Canada, as a matter of government policy, has not wanted to take a lead role in what have been called export credit wars, though it has been willing to match what other countries have been making available on a selective project-by-project basis. By contrast, in the more important areas of medium and short-term export financing, Canada appears to be fully competitive. The EDC suggests that the industry's failure sometimes to appreciate this fact reflects the existence of a "perception gap".

c) Technological Factors

The industry performs limited R&D. Consulting engineers primarily apply technologies that exist in the public domain, and that have already been proven, to the problems of clients. Clients generally select a firm for its experience and reputation in a particular field, and not for its ability to innovate or develop new technologies. In other countries, own account R&D is performed mostly by integrated construction firms which retain a proprietary interest in the technologies developed and which utilize them in the large, complex projects in which they specialize, often on a turnkey basis. Though

the structure of the Canadian industry is not conducive to own account R&D, contract R&D nevertheless remains important to it, not so much for the revenues generated, but because the knowledge that is acquired in new and emerging technologies enhances the competitive performance of firms.

During the 1980s, computer aided design and drafting (CADD) has brought about reductions in the staff requirements of many firms, especially larger ones, and enabled significant productivity gains. Another important effect of CADD has been to permit project designers to work more interactively with clients (since revisions to plans are relatively easy to accommodate) and to offer new services, e.g., facilities information management systems and records conversion. With the development of new services and markets, it is even possible that the effect of CADD and GIS (geographic information systems) and other computer technologies that combine graphics and information processing will be to increase long-term employment in the industry.

3. FEDERAL AND PROVINCIAL PROGRAMS AND POLICIES

Agencies of the federal, provincial and municipal governments regularly decide whether to contract out for the engineering services they require or to provide the services "in-house" with government employees. The latter decision can mean lost opportunities to develop private sector capabilities and export potential. For some time the federal government has had a policy stance that favoured contracting out. Thus, in 1981, leaving aside the in-house engineering work of Atomic Energy of Canada Limited (AECL), the federal government contracted out for 80 per cent of the engineering services it required, according to a Treasury Board study. Quebec has contracted out over the years for most of its highways work, as well as for development of its hydroelectric sites, and few in the industry doubt that this has contributed to the competitive strength of Quebec-based firms. There would appear to be scope for further gains in industrial development via more contracting out of engineering services, particularly at the provincial and municipal levels. Industry spokespersons also suggest that better ways need to be found to join the operations/maintenance expertise of utilities and Crown corporations with the private sector's capabilities in design and project management in order to promote more exports by private firms.

4. EVOLVING ENVIRONMENT

This is an industry in transition, requiring that firms adapt their operations to new technologies and expectations of clients. The following statements highlight what is at issue:

- The era of rapid growth in consulting engineering work driven by overall industrial development of the domestic economy and megaprojects has not continued into the 1980s.

- Future growth in this industry will depend upon success in export markets where competition will be fierce.

- Success in export markets will depend upon: a) the pace of economic growth in the Third World; b) the initiative of industry, working in collaboration with government, in developing foreign markets; and c) the success of firms in developing new specializations.

Joint ventures with firms in Third World host countries will become more common. In order to identify opportunities for joint ventures, consulting engineers will become more aggressive and entrepreneurial. In addition to networking and forming alliances to target the best opportunities, corporate strategies are likely to include: diversifying into non-consulting activities; identifying viable projects and then finding clients for them; and financing projects by taking equity in place of fees, and perhaps even developing, owning, operating and then selling a facility.

In 1985 the Stanford Research Institute (SRI) concluded that world markets for both turnkey and megaprojects would remain poor until at least into the 1990s. Generally, government spending on infrastructure is expected to be drastically reduced except in certain areas such as waste treatment and water supply. International markets will be very competitive as the giants of the industry

pursue much smaller projects. Many developing countries will also acquire their own expertise which they will seek to export.

Technical services that are sold "unbundled" to capital projects will enjoy significantly higher international demand. Firms with specialized world-class capabilities that find solutions to the problems of marketing internationally should be able to occupy market niches and sell around the world. Notwithstanding these possibilities, the current trend toward the concentration of technical expertise through acquisitions will continue as it offers another avenue for the international marketing of expertise. Inventorying of forestry and mineral resources by satellite remote sensing, marine resource conservation and management services, and GIS are three promising areas for increased foreign sales of unbundled technical services.

The Asian market, where the growth prospects of some less developed countries are considered good, will likely grow in relative importance. Africa, which has always been important to the Canadian industry, is becoming much more receptive to private sector development and is also likely to grow in importance as a market, especially in light of CIDA's recent commitment to Africa 2000.

5. COMPETITIVENESS ASSESSMENT

In proportion to the size of its economy, Canada probably exports more consulting engineering services than any other country in the world. Along with banking, life insurance, real estate development and just a few others, consulting engineering is an example of a world-class Canadian service industry, one which is highly competitive even by world standards.

The Canadian economy has always been heavily dependent upon the efficient exploitation of vast agricultural, forestry, fisheries and mineral resources. In coming years, employment in resource-based harvesting and processing operations is likely to drop significantly as capital-intensive technologies displace labour in each primary sector and its secondary manufacturing component. The new employment that does directly derive from Canadian resource exploitation in part will occur because a variety of firms succeed in exporting project development and management know-how, resource-based research services and related goods and instruments. These knowledge-intensive exports, which typically have high value-added content, are important to Canada's future economic development prospects; the consulting engineering sector will play a significant role in their development.

The likelihood of the industry's successfully adapting to the more difficult competitive environment it faces must be rated high. Leaner operating methods and downsizing induced by the recession plus movement toward leading edge production methods augur well for improved competitiveness as markets recover. The industry is well positioned to capture its fair share of emerging opportunities to sell "unbundled" services. Incremental success will depend in large part upon closer attention to marketing and technology transfer to Third World clients by small and medium-sized firms and to growing sophistication in joint venturing. More cooperation between these firms and Canada's non-governmental organizations (NGOs) working in the international development field will also be important to success. However, should there be a resurgence of turnkey and megaprojects in the 1990s, the industry will, as in the past, miss out on many opportunities to sell its services, owing to its structure.

Prepared by: Service Industries Branch
DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

Assistant Deputy Minister
Consumer Goods, Services and Resource Processing

Date: JUL 30 1986

FACT SHEET

NAME OF SECTOR: Consulting Engineering, Part of SIC (1970) 864, Engineering and Scientific Services

1. PRINCIPAL STATISTICS

($ Figures in Millions)	1971	1981	1982	1983P	1984P	1985P
Number of Firms	n.a.	n.a.	3,200	n.a.	n.a.	n.a.
Employment	34,700	57,500	54,500	49,000	48,200	53,100
Payroll ($)	n.a.	n.a.	1,785	1,367	1,431	1,611
Total Billings ($)	n.a.	n.a.	3,420	2,621(e)	2,742(e)	3,089(e)

2. TRADE STATISTICS

($ Figures in Millions)	1971	1981	1982	1983	1984	1985
CANADIAN FOREIGN BILLINGS ($)	n.a.	346	404	384	410	n.a.
(% of Total Billings)	n.a.	n.a.	12	15(e)	15(e)	n.a.
FOREIGN BILLINGS IN CAN. ($)	n.a.	n.a.	n.a.	n.a.	150(e)	n.a.
(% of Domestic Billings)[1]	n.a.	n.a.	n.a.	n.a.	6(e)	n.a.
CANADIAN SHARE OF INT'L MARKET	n.a.	8	8	7	8	n.a.

Source of imports (%):

From Firms Making ENR's Top 200 List	U.S.	SCAN.	U.K.
1982	84	n.a.	10
1983	91	n.a.	5
1984	69	23	n.a.

Destination of exports (%):

By Canadian Firms Making ENR's Top 200	MIDEAST	ASIA	AFRICA	LAT. AM.	U.S.	EEC
1982	18	15	21	14	27	5
1983	18	17	28	12	20	5
1984	9	26	26	8	26	6

p = preliminary; n.a. = not available; e = estimated.

1 Domestic billings equals total billings minus Canadian foreign billings plus a portion of foreign billings in Canada not included in total billings.

3. REGIONAL DISTRIBUTION - 1982 (Based upon responses to survey)

	Atlantic	Quebec	Ontario	Prairies	B.C.
Establishments - % Total	6	14	34	28	18
Employment - % Total	4	23	37	20	16
Billings - % Total	3	24	34	22	17

4. MAJOR FIRMS

Name	Ownership	Headquarters	Concentration* (% of Domestic Market)
1. Lavalin	Can. Owners (4)	Montreal	n.a.
2. SNC	By Employees	Montreal	n.a.
3. Monenco	Publicly Owned	Montreal	n.a.
4. H.A. Simons	Family Owned	Vancouver	n.a.
5. Acres	By Employees	Toronto	n.a.

Also, not classified to SIC 864, but active in export markets, are: Atomic Energy of Canada Limited (AECL); Bell Canada International; Canac Consultants; Canadian General Electric; Canadian Pacific Consulting Services; Hydro-Quebec International; Inco Tech; Interimco Projects Engineering Corp.; Ontario Hydro; J.S. Redpath; Westar Engineering.

* In 1982, 34 firms, each billing $10 million or more to clients, accounted for an estimated 37% of total industry billings.

DRAFT - PROJET

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

COMPETITIVENESS PROFILE

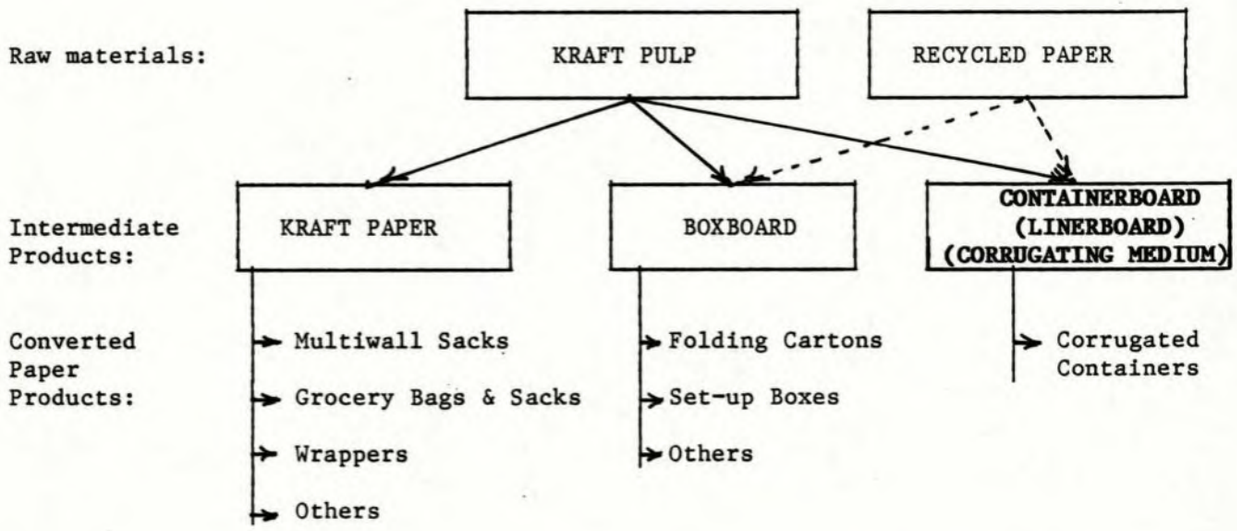
CONTAINERBOARD

1. Structure and Performance

a) Structure

The containerboard industry produces linerboard and corrugating medium. These products are used in the manufacture of corrugated container sheetstock. Both the corrugating medium and the linerboard can be produced from either virgin fiber (wood) or recycled paper. The latter is used in 25 percent of the linerboard or corrugating medium sold in Canada. The relationship between containerboard and the other paper-based packaging materials is shown below.

PAPER BASED PACKAGING



In 1985, containerboard shipments were estimated at $795 million of which $200 million or 25% were exported. Export activity is modest in corrugating medium. Canadian producers export this grade only to U.S. and South America. Kraft linerboard (made from virgin fiber) accounts for 70% of export and is sold mostly in Western Europe. Recycled linerboard is not competitive in offshore markets and is not in demand in the U.S. Imports of containerboard are negligible.

The total sector employment is estimated to be 5,400 persons. Ontario and Quebec account for the majority of the sector employment, each with 35%. New Brunswick employs an estimated 8 percent and B.C. has the remaining 22 percent.

There are eighteen mills wholly or partially engaged in the production of containerboard in Canada. Fifteen mills, about 75 per cent of the sector capacity, are located in eastern Canada. The remaining three mills in B.C. contribute 25 percent of the capacity. It is estimated that, based on capacity, the sector is 85 percent Canadian-owned.

Most of the industry (90 percent) is integrated forward with corrugated container production. All the eastern producers are integrated and are heavily oriented to the domestic market. The one non-integrated producer is located in B.C. and accounts for 80 to 85 percent of Canada's linerboard exports.

Canada is considered a residual supplier to the international linerboard market with only 6 to 8 percent of the international trade in this sector. The U.S. and Sweden share 85% of this trade.

b) Performance

The containerboard sector real rate of growth, related directly to demand from domestic corrugated container production, increased by 6 to 8 percent per year in the mid 1970s. Since then the rate has been about 3 percent. This rate is not expected to increase over the longer term. It will not be significantly greater than the rate of growth of the Canadian economy. Export volumes have remained largely constant and have accounted for 25 percent of shipments over the last 5 years.

Canadian kraft linerboard producers have experienced low net returns and low rates of capital formation basically because a high cost raw material (wood) is used in a low-yield process to produce a low-value product. The more efficient semi-chemical process gives the corrugating medium producers higher yields on wood but their selling price is lower than kraft linerboard and their returns are also low.

A total of some 420,000 metric tons of kraft linerboard capacity was permanently withdrawn from production in Canada over the past 10 years. The Labrador Linerboard mill in Stephenville, Newfoundland, the last one built in Canada, was shut down in 1977 and MacMillan-Bloedel closed its kraft linerboard machine in Port Alberni in 1980. Since 1980, slight increases in Canadian capacity for both linerboard and corrugating medium resulted from modernization and efficiency gains. No greenfield linerboard mill is expected in the foreseeable future.

2. Strengths and Weaknesses

a) Structural

Economies of scale are very important in producing kraft linerboard. Canada has no world-class kraft linerboard production facility. The relatively small domestic market, and Canada's residual supplier role in export markets, do not allow domestic producers the economies of long production runs. Canadian mills must each cover the spectrum of different weights of linerboard demanded by the market. This requires frequent changes to the drying machines and results in reduced labour efficiency, especially in comparison to American mills where product specialization is possible.

With respect to input costs, Canadian mills have an edge only in energy which is not a major factor. In the principal cost element, wood, eastern Canadian mills are at a disadvantage in comparison with mills in southeast U.S.. Western Canada mills are less disadvantaged against these same U.S. mills. Traditionally, Scandinavian fibre costs have been high in relation to those in Canada and the U.S.

Transportation costs are very important in this sector. Corrugating medium is a low-value product generally produced locally from recycled paper and is not traded to a large extent. Canadian corrugating medium producers cannot compete in Europe because of high transportation costs in relation to Scandinavian producers. They can compete in the U.S. in border areas and in Central and South American markets because their transportation costs are lower than for their Scandinavian competitors. U.S. transportation costs of kraft linerboard to Western Europe, however, appear to be 30 to 40 percent lower than the Canadian. The causes of this discrepancy are being investigated.

Most of Canada's containerboard facilities are, in general, old. Modest upgrading has been undertaken but, by and large, Canada's production facilities for containerboard are not as efficient as those being installed or recently completed in Sweden and the U.S.

The competitive position of Canadian producers in export markets has improved following the recent strengthening of Scandinavian currencies against the Canadian dollar. B.C. kraft linerboard is once again competitive in the EEC. Eastern Canadian kraft linerboard still remains only marginally competitive in Europe.

b) Trade Related Factors

Effective January 1, 1987, the Canadian tariff on linerboard will be 6.5 percent and the tariff on corrugated medium will be 4 percent. The U.S. rates on these grades will be zero, the EEC rates will be 6 percent on both grades. The Japanese rate on kraft linerboard will be 5%.

The EEC enforces a minimum import prices system on kraft linerboard to protect their domestic industry during world price declines.

c) Technological Factors

New technology in this sector is widely available to all producers. Production facilities in Canada for kraft linerboard, however, are substantially older than those of the competing countries. The investment required to assure Canada's long run participation in export markets would be substantial.

d) Other Factors

Exchange rates have been an important factor in maintaining competitiveness of Canadian mills in the domestic market vis-à-vis imports from the U.S. and in fostering the competitiveness of Canadian producers in export markets, especially the U.S. markets.

3. Federal/Provincial Programs and Policies

There are no federal or provincial programs specially targetted to this sector.

4. Evolving Environment

Traditional sources of containerboard for the international market are undergoing changes. Brazil, South Africa, Portugal and Spain are emerging as important exporters. They are expected to change markedly the traditional trade patterns. This will affect kraft linerboard especially, Canada's main export in this sector.

The average long term demand growth rate for containerboard is expected to be in the range of 2.5 to 3 percent per year, in both the domestic and export markets. In North America, the high preference for kraft linerboard over recycled linerboard will be maintained. In European markets the preference for recycled linerboard will increase and its market share will grow because of its lower cost.

Western Europe will remain the major export market for kraft linerboard but diminishing Canadian competitiveness in that market vis-à-vis the U.S., Scandinavians and new suppliers, coupled with growing demand in Canada will likely, in the medium term, lead eastern Canadian producers to completely withdraw from the European market and concentrate on the domestic market.

In the long term, diminishing competitiveness could result in the western Canada kraft linerboard producer also losing a substantial share of its market in Europe. This would likely force it to develop alternative markets in the Pacific Rim.

5. Competitiveness Assessment

The Canadian industry is not competitive in European markets for corrugating medium because of high transportation costs in relation to those faced by local or Scandinavian producers. It can compete in the U.S. in border areas and also in Central and South America where its transportation costs are lower than those of its Scandinavian competitors.

In kraft linerboard, Canada has been traditionally a residual supplier especially in the major market of western Europe but is competitive at the current exchange rate. Eastern Canadian producers are only marginally competitive in Europe and are becoming less competitive. They will likely become progressively less involved with export and concentrate on the domestic market. Western Canada's producer is currently competitive in Europe and in Asia.

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Consumer Goods, Services and Resource Processing

Date: JUL 21 1986

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION July 1986

FACT SHEET

NAME OF SECTOR: CONTAINERBOARD **SIC(s) COVERED:** 2713 (1980)

1. PRINCIPAL STATISTICS

	1973	1980	1981	1982	1983	1984	Estimate 1985
Establishments (e)	19	19	19	18	18	18	18
Employment (e)	5300	5300	5400	4800	5300	5400	5400(e)
Shipments ($ millions)	352	550	603	517	613	768(e)	795(e)
('000 tonnes)	1450	1587	1589	1300	1561	1692	1696
Gross Domestic Product (Constant 1971-$ millions)	Not available - confidentiality requirement in sub-groups						
Investment ($ millions)							
Profits after tax ($ millions)							
(% of income)							

2. TRADE STATISTICS

	1973	1980	1981	1982	1983	1984	1985
Exports ($ millions)	65	193	167	119	152	184	200(e)
Domestic Shipments ($ millions)	287	358	436	398	461	584(e)	595(e)
Imports ($ millions)	6	5	9	13	15	13	15(e)
Canadian Market ($ millions)	293	363	445	411	476	597	630(e)
Exports as % of Shipments	18	35	28	23	25	24	25(e)
Imports as % of Domestic Market	2	1	2	3	3	2	2(e)
Canadian Share of International Market %	13	12	11	9	10	9(e)	8(e)

Source of imports (top 4)	U.S.	E.E.C.	Asia	Others
1981	100			
1982	100			
1983	100			
1984	100			

Destination of exports (top 4)	U.S.	E.E.C.	Asia	Others
1981	21	35	20	24
1982	29	32	22	17
1983	32	34	17	17
1984	40	22	21	17

3. REGIONAL DISTRIBUTION - Average over the last 3 years

	Atlantic	Québec	Ontario	Prairies	B.C.
Establishments - % of total	17	33	33	-	17
Employment - % of total	16	35	33	-	16
Shipments - % of total		Not available			

4. MAJOR FIRMS

Name	Ownership	Location	Concentration (% of domestic market)
1. Domtar Inc.	Canadian	Ontario	not
2. Consolidated Bathurst Inc.	Canadian	Quebec/N.B.	published
3. CIP Inc.	Canadian	Quebec	information
4. Eurocan Pulp & Paper Ltd.	Finland/U.S.(50/50)	B.C.	

e - denotes estimate