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BRITISH COLUMBIA INDUSTRIAL DEVELOPMENT BULLETIN

A bulletin concerned with industrial advances affecting the B.C. economy

International Outlook

On the positive side, Real Domestic Product growth for the world's industrialized countries is estimated to be about 4% in 1988. A central feature of the growth in most of these countries has been the strength of business investment, stimulated by improved profitability, a declining trend in real interest rates, deregulation, sustained growth in demand and improvements in business confidence.

Less positively, recent firming of monetary conditions, associated with the inflationary pressures of unsustainable growth, in most of the major industrial countries is likely to dampen aggregate demand. The growth rate for industrial countries is consequently expected to moderate to about 3% in 1989. However, it should be noted that such moderation will likely prolong the current economic expansion as it will reduce the risk of economies over-heating; avoiding a more significant tightening of monetary policies at some later stage.

National Outlook

Canadian growth will moderate in 1989 to range near 2.4%, from the 4.2% experienced last year. Moderating factors will include: higher interest rates, as the Bank of Canada continues its anti-inflationary measures; contraction of exports as corresponding interest rate increases south of the border dampen consumer demand, particularly for major items such as cars and houses; and, a weaker domestic housing industry, as the effects of price increases and higher mortgage rates are felt.

Consequently, business investment will continue to drive the economy in 1989 as capacity constraints coupled with buoyant profits will encourage expansions and modernizations, particularly in light of some of the new market opportunities associated with the recently enacted Free Trade Agreement. Non-residential construction and machinery/ equipment expenditures are forecast to increase by some 7% over 1988 levels.

National inflation is expected to increase from the 4.1% experienced in 1988 to 4.8% in the new year. Employment is expected to grow by 2% in 1989, however increased labour force participation will conceal this growth and the unemployment rate will remain around 7.8%.

Provincial Outlook

British Columbia's economic growth, like that of the nation, will moderate in 1989 and be driven by capital investment projects, particularly in the pulp and paper and mining sectors. Forecast growth of 2.8% in 1989 is above that projected for Canada. Unemployment is still expected to be slightly above the national average and inflation slightly below.

World supply of pulp, paper and mining commodities remain tight, hence prices will likely stay firm through 1989 until expansion and modernization projects come on stream in the early 1990's. Unfortunately, prospects within the province's wood industry are not so encouraging as declining housing starts in both Canada and the U.S. are expected to further soften both demand and prices until the end of 1989. Prospects are also jeopardized by industry vulnerability to exchange rate fluctuations.

Again for B.C., we should see a surge of interest in investment, especially in the manufacturing sector, as a result of the Free Trade Agreement.

What's inside

Government of Canada / Gouvernement du Canada
Industry, Science and Technology Canada / Industrie, Sciences et Technologie Canada

X-Country Trendy

Skiing has grown to be one of the most significant tourism industries in North America and, while downhill developments have evolved as the backbone of the industry, recent surveys indicate that Canadian participation in cross country skiing surpassed that of downhill in the late seventies. Today, there are an estimated 4.7 million cross country skiers compared to 3.47 million downhill.

Although, Quebec and Ontario account for the majority of Canada's ski trails (88%) and cross country skiers (75%), there are still 325,000 British Columbians that cross country ski on 1,300 kms of ski trails at some 55 ski areas. Of these areas, those in the Lower Mainland capture between 40% to 50% of the annual skier visits. The Cypress/Hollyburn area is particularly popular as it accounts for nearly 1/3 of all reported cross country skier visits in the province.

A study recently commissioned by Industry Science and Technology Canada and the Provincial Ministry of Regional Development examined B.C.'s cross country skiing industry and found that the growing popularity of the sport was due to its compatibility with the North American fitness trend; its reputation as an ideal family sport; its diversity of appeal, ie: exercise, aesthetics, comradery; its attractiveness to aging national populations that can enjoy the sport into their sixties and beyond; improved media recognition and a perception of better value as cross country facilities improve and the cost of downhill skiing rises.

A profile of B.C. cross country skiers revealed that participation is split evenly male to female; with male participants tending to ski more for the exercise, while females tended to enjoy the more contemplative aspects of the sport; 49% were forty or older; 44% were university or college graduates; a majority are married with families and generally earned above average salaries, $35,000 +.

Industry trends suggest that, nation-wide, cross country skiing is experiencing the dynamic, evolutionary, growth that was seen in downhill skiing ten to twenty years ago. This growth is however somewhat different as it is being fuelled by older, higher educated, above average income earners who are demanding quality facilities and tracks, and are willing to pay for the experience. Thus, these skiers want to go out on well groomed trails over varied terrain, finish the day with a soak in a hot tub, eat a gourmet dinner and take in some entertainment afterwards. It is the lack of such sophisticated commercial cross country resorts which is thought to be the cause of decreased skier visits to provincial facilities over the past three years. Meanwhile more developed facilities in the U.S. are showing 17% to 50% increases in annual skier traffic.

Consequently, the study recommends that if B.C. operators are going to compete successfully for an increased share of the cross country market, they will have to improve the range and quality of existing facilities. It is also suggested that attempts be made to clearly define the ski product being offered so that it may be more consistently presented and marketed between operators. It is speculated that if such efforts were undertaken and even a modest 5% increase in growth is achieved, immediate skier visits could increase by more than 50,000 over the next one to two years.

Diamond Coats

A revolution is underway in advanced industrial materials. In the past ten years, it has, for example, become possible to produce a thin film or coating of synthetic diamond on a variety of materials, creating products that perform functions beyond the capabilities of previously available materials. A recent Stanford Research Institute publication suggests that while only a few products using these new diamond thin films have reached commercialization, within the next ten years such products will become widespread, representing a potential market of several hundreds of millions of dollars.

Diamond has many desirable properties: the highest hardness of any material; the highest thermal conductivity of almost any material; a high melting point; and a high refractive index. Diamond is also transparent to infrared, ultraviolet and microwaves; has the greatest transparency of all water-insoluble materials and is the only material that is simultaneously a good heat conductor and electrical insulator.

General Electric produced the first synthetic diamonds in 1954 by duplicating the high temperature and pressure conditions under which diamonds naturally form. In the late 70's Soviet researchers, attempting to reduce the required pressures and temperatures through the use of energized gases, discovered they could produce diamond films. By the early 80's Japanese researchers had duplicated the Soviet results and enhanced the process through the use of

microwaves. Researchers in the U.S. and Western Europe generally did not believe these results and are now by some accounts ten years behind the Soviets and five years behind the Japanese.

Although further understanding of the process may not be necessary for at least some commercialization, many applications depend on reduced costs and smaller amounts of starting materials and energy.

Diamond films' high hardness, abrasion resistance and corrosion resistance have already invited their use in surgical knives. Soon, such films will appear in cutlery and razor blades for household use and in industrial knives and cutters.

Diamond's thermal conductivity could make it useful in heat sinks (diffusers) for semiconductor devices, allowing perhaps an order-of-magnitude higher density and thus higher computing speeds, operating temperatures, operating frequencies and greater protection from power surges. Further, computers, and other equipment such as microwave and laser communication equipment and satellites, could be reduced in size as the diamond heat sinks would reduce or eliminate the need for cooling fans.

Other possible applications would see diamond films coating windows for aircraft and underwater vessels, and viewing windows for scientific instruments or industrial process equipment were pitting,abrasion and corrosion have traditionally presented problems; components for engines, machinery and process equipment could also take advantage of diamond films, eg: diamond coated bearings which would require no lubrication, as heat-protecting for sensors in engines, and on wear parts for high-speed machinery; uses within the armed forces are also envisioned as coatings on military equipment may be able to exploit diamond's ability to resist radiation damage and avoid detection by ultraviolet and infrared means.

Employees with an Attitude

In a study, recently conducted by Hay Management Consultants, differences in attitudes were examined between Canadian and American workers. The study found that, while employee attitudes in both countries were generally very similar, differences were established to exist in four broad categories: level of cohesiveness within the company; level of job stress; identification with the company; and organizational investment in employee development.

A greater proportion of Canadian employees felt that their organizations were more cohesive, ie: better management-employee relations, inter-departmental cooperation, etc., and found their day-to-day working environment to be less stressful. Interestingly, a greater proportion of American workers felt that their employers were making an investment in their individual development and identified with their organizations, in terms of company pride and belief in its ability to compete.

Explanations for these differences suggest that the greater degree of cooperation and lower levels of stress felt by Canadian workers was due to Canadian firms being smaller and taking less aggressive measures to streamline operations. Conversely, U.S. companies were suggested to have fostered leaner, more dynamic environments that more fully utilized employees' skills and abilities and better prepared them for future change.

Among, the implications of these conclusions for Canadian firms is that they may be somewhat disadvantaged in the increasingly dynamic global marketplace. Future success will depend on systematic efforts to respond more effectively to employee needs and values, while simultaneously creating organizational structures, processes and cultures that will support greater flexibility and more fully utilize employee potential.

In the Fast Lane: Growth Industries

Growth industries, those with 20% or higher annual increases in sales, do not often maintain their status for very long. Consequently, it is important that companies in, or contemplating entry into, such industries realize that positioning the firm in a high growth enyironment is an on-going proposition.

SRI International recently published an article which examined the characteristics of rapid growth industries and outlined considerations for adopting a growth posture.

In reviewing the characteristics of high growth industries from 1974 to 1986 it was found that such industries have either produced high-tech equipment, appealed to a consumer fad or taken advantage of a market aberration. Profitability was found to decline as the industry matured, as new entrants increased industry competition. Debt-equity ratios tended to be low during the growth phase as financing was generally obtained through self investment or venture capital. However, as the

industry matured, risks declined and debt financing was used more extensively. Cash flow tended to be a problem in expanding industries, as rapid growth required cash to pay for additional employees, production increases, new facilities, etc. Finally, the nature of growth industries has been changing over the last ten years, shifting from industrial manufacturing and commercial services to consumer products and services, as illustrated below:

Top 5 U.S. Growth Industries

1977 - 1981	1982 - 1986
Brokerage houses	Health care services
Mining & drilling equip	Recreational vehicles
Office services	Mutual savings banks
Natural gas pipeline & distribution	Brokerage houses
Computers	Misc. retailers (specialty stores)

In looking to the future, a number of possible growth industries appear on the horizon. In the area of automation: expert systems, intelligent work stations, robotics, CAM/CAD and Very High Speed Integrated Circuits (VHSIC) seem likely candidates for rapid revenue gains. Other industries and fields which seem poised to unbuckle their growth belts include: biotechnology; composites and other advanced materials; superconductivity; health equipment; industrial security, switching from labour-intensive to electronics-intensive; packaging equipment, as more products move into world markets; and, security and labour saving devices for the home, as female labour force participation continues to increase.

In contemplating a move into a growth industry a number of considerations should be taken into account, including: understanding why the industry is growing; matching market niches with company strengths; ensuring current manufacturing, distribution and sales methods are satisfactory; estimating additional investment in plant, equipment, labour and R&D; timing of product introduction; and contingencies for unforeseen problems.

It is also important to incorporate the entry into the new industry into the company's overall strategic plan, such that it represents a new direction for the company that will enhance overall shareholder value.

Consistently top performing companies are those which employ this or similar approaches, identify growth markets, get into them early and then move on before the growth stops.

Did You Know ?

Membership fee for Tokyo's Koganei Golf & Country Club	$2 million
Average annual time taken for vacation by workers in:	
Britain, France & W. Germany	5 - 6 weeks
United States	14 days
Japan	13 days
% Cdns who feel higher taxes are greatest threat to personal economic situation	35%
Canadian forest industry estimated revenue loss associated with the rise in the Canadian dollar in 1988	$1.2 bil.
Number of B.C. software companies with six-figure sales in 1982	0
In 1988	20+
New chemical compounds introduced into the world's eco-system yearly	40,000
Value of annual world fish harvest	$30-$40 bil.
Value of aquaculture crop portion	$12 bil.
Robots per 10,000 manufacturing employees as of 1986 in:	
Japan	39.1
Sweden	38.7
U.S.	12.4
Canada (1984)	3.7
Amount glass fibre required to carry as much information as 1 ton of copper	1 lb
Average milk yield from a dairy cow	14,000 lbs
Average number of eggs a production hen will lay annually	250
Number of people modern farmer feeds	80
A farmer 20 years ago	40
% Americans opposed to nuclear energy	50%
Number of biotech cases pending final action at U.S. Patent	11,500
Estimated time processing will take	6 years
Expected yearly increase in such patents	12%
% B.C. restaurants that fail in first year	80%
Cost for monthly parking in Manhattan	$300
Time physically active employees are absent relative to inactive employees	1/3
Absenteeism associated with smoking	33 - 45%

Improving Canada-Japanese Economic Links: No Time Like the Present

Japan has quickly become Canada's second largest trading partner and, in recent years, become a substantial investor in our economy. However, the significance of these facts is only a lead-in to the potential benefits, to both countries, that improving our economic relationship could bring.

The C.D. Howe Institute recently released a study, "Japanese-Canadian Relations, The Opportunities Ahead", which examines why now is a uniquely favourable time in the history of Japan and Canada for the two countries to extend their relations with one another.

In 1987 Japan realized that its unbalanced dependence on exports was self-defeating as it pushed the yen higher while breeding protectionist sentiments abroad. Subsequently, a program to expand domestic demand was undertaken which saw the Japanese market begin to open and imports increase substantially. Other government steps underway to restructure the Japanese economy include: deregulation, dismantling of trade restrictions, increased foreign purchases by public agencies, and measures to modernize the more backward sectors of the economy.

Although the speed at which Japan's economy is opening is slower than most feel is desirable - particularly in areas such as agriculture, housing and Japan's excessively complex distribution system - imports are rising sharply, increasing 45% since the Plaza Accord in late 1985. Moreover, manufactured goods now account for almost half of these imports, twice the proportion of only three years ago, and represent increased sourcing from Canada, the U.S. and other Pacific Rim countries.

The strength of the Japanese economy, its slow restructuring, and the gradual weakening of trade barriers all create a more positive environment for increased trade, investment and technology exchanges between Canada and Japan.

Canada is the only Group-of-Seven country currently running a trade surplus with Japan. Canadian exports to Japan have traditionally been unprocessed raw materials, however manufactured products are becoming increasingly important.

Still, although Japan is Canada's second largest export market, Canada ranks only eighth in importance as a supplier of imports to Japan. Canadian firms have not made the in-roads into Japan that Australian and many European firms have made, partly because of the pull of the larger, closer and easier U.S. market and, partly, because Canadian exporters have not made the sustained efforts to build relationships of trust and mutual interest that are crucial to success in Japan.

Canadian exports to Japan are nevertheless expected to grow rapidly and to shift in composition to more processed goods, reflecting both Japanese growth and rising consumer interest in foreign goods. Additionally, the longer production runs that Canadian manufacturers will obtain as a result of improved access to the U.S. market will reduce costs and increase the competitiveness of Canadian products entering Japanese markets. Exports of services such as consulting, software, teaching of english, and tourism should also be vigorous.

While Japanese investment in Canada is significant - $36 billion at the end of 1986 - it is largely in the form of government bonds and loans. Japanese direct investment in Canada is relatively small, representing 3.7% of total direct investment between 2Q85 and 3Q88, as compared to the U.S. (62.3%), U.K. (10.3%), and France (3.8%). It is likely that access to the U.S. market associated with the Free Trade Agreement and Japan's rising recognition of Canada's high-growth, high-technology manufacturing industries will encourage increased capital flows.

Canada's strengths in biotechnology, medicine, polymers, remote sensing, software, and telecommunications suggest some of the possible areas in which joint licensing and/or technological ventures might be established with Japan. Wider use of joint ventures, however, will require more open and co-operative attitudes on the part of both countries than has past been the case.

In summary, Canada has many opportunities to expand its links with Japan in trade, especially in manufactured goods; in investments in Canada, particularly those designed to also serve the U.S. market; and in technology where Japan's production and product commercialization skills can be combined with Canada's growing abilities in technology, innovation and information intensive industries.

Industrial Opportunities in the Hibernia Project, seminar presented by Mobil Oil Canada and co-sponsored by Industry, Science and Technology Canada, Western Economic Diversification, Ministry of International Business and Immigration and Ministry of Regional Development, January 19, 1989, 9:30 - 4:00, Robson Square Media Centre, Vancouver, British Columbia, Contact: Ross M.A. Brearley (604) 666-1408.

Canada Awards for Business Excellence Luncheon, January 25, 1989, Pan Pacific Hotel, Vancouver, British Columbia, for further details contact: Gary Warnock (604) 666-1420.

Canadian Export Association - U.S. Customs Free Trade Seminar, January 26, 1989, U.S. Customs official will outline new procedures associated with the FTA, Hotel Vancouver, Vancouver, British Columbia, Cost: $75.00, Contact: Bob Phillips (604) 688-1501.

"Is There Really a Future in Fishing in B.C.", Peter Pearse Guest Speaker, Vancouver Board of Trade Speaker's Corner, January 30, 1989, 11:45, Vancouver, British Columbia, Cost: Members $12.00, Non-members $8.00, Contact: (604) 681-2111.

Government Services Administration Sourcing Mission, Auburn, Washington, February 1, 1989, mission to explore supplying of non-defence products to U.S. government, particularly paints, chemicals, and cleaning products, Contact: Jacalin Crosfield (604) 666-1440.

Executive Day West - Strategic Business Outlook for 1989, February 7, 1989, Sponsored by The Financial Post in Cooperation with The Vancouver Board of Trade, featured speakers include A.W. Clausen, CEO - Bank of America, San Francisco, and Bruce Gissing, CEO - Boeing Canada Ltd, Seattle, Pan Pacific Hotel, Vancouver, British Columbia, Cost: $425.00, Contact: Paula Gould (416) 596-5681.

Boston Solo Food Show, February 8, 1989, Show of only Canadian food producers, Boston, Mass., Companies interested in exhibiting should contact: Shun Ishiguro (604) 666-1436.

Vancouver Island Computer and Communications Show, February 21 (11:00-8:00) - 22(11:00-6:00), Victoria Conference Centre, Victoria, British Columbia, Contact: Helene Lavasseur (604) 433-5121.

Seattle Solo Food Show, February 21, 1989, In excess of 50 Canadian food producers from across the country will be exhibiting, Red Lion Inn, Seattle, Washington, companies interested in exhibiting should contact: Shun Ishiguro (604) 666-1436.

Market Opportunities in France, February 23, 1989, Vancouver, British Columbia, Contact: Rick Stephenson (604) 666-1443.

Sixth Pacific Rim Opportunities Conference, February 27 - March 2, 1989, Sheraton Centre, Montreal, Quebec, Cost: $350.00, includes registration, interviews with trade commissioners and lunches for all four days, Contact: Diane Caldbick (613) 238-4000.

Trade Shows Made Profitable Seminar, March 2, 1989, how to maximize benefits from trade show participation - Barry Siskind guest speaker (repeat of Dec. 7, 1988 seminar), Royal Towers Hotel, New Westminster, British Columbia, Cost: $50, Contact: Rick Stephenson (604) 666-1443.

Trading House Seminars, March 6,7,8 1989, Vancouver, Victoria and Kelowna, further information contact: Mike Reshitnyk (613) 996-0245.

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