INSIGHT INTO INDUSTRY

News of Industrial Advances in British Columbia

Fall 1991

In this Issue

Economic Trends

Internationally, the opinion is that there's too much debt - the result of strong global economic growth, restructuring and a ready supply of capital. However, there are pressures to curtail the growth in debt. Even Japanese financial institutions--the mother-of-all-lenders, so to speak--are backing off; in the US, debt growth is lower than at any time since 1962. Indonesia has set a two year quota which limits foreign borrowings. In North America, we're also seeing pressure to reduce debt while at the same time, paradoxically, we're headed for interest rate levels for the next 3-5 years not seen since the 1950s and 1960s. Remember when Canadian T-Bills earned 4.5% and long bond yields were under 6%?

In Canada, we too are headed for a low inflation, low interest rate, falling gov't deficit future (and they travel together these three). Economic growth will move at a positive but glacial pace--in the 3% range next year--after shrinking by almost 1% this year. Residential construction and inventory build-up will be the prime engines for this growth.

As the economy re-structures, business and capital investment will rise despite low profits because companies have to invest to remain competitive. Hard times for export industries will continue, driven by changing technology and international market conditions which compound the all too familiar problems of low commodity prices, high labour costs and a strong Canadian dollar. Look for more layoffs in resource industries (forestry and mining) where the most outdated facilities will be closed down and employment is cut back at others.

During this period, most consumers will be thinking only about hanging on to a job; unemployment will remain high, above 10% nationally. And that will continue to depress retail sales, already down 7.5% in central Canada alone this year.

BC remains the bright spot. Our big question is whether the growth in population, which has driven our economy, can be sustained in the face of rising living costs in the Lower Mainland. Employment is actually up 1.2% this year from the previous year. Retail sales have dropped 3.7%, not so bad compared to central Canada.

Unfortunately, the resource sectors are still talking recession--and with the added demands associated with higher environmental standards. Some opportunities? Debt-burdened and cautious US homeowners will be renovating instead of moving up and out. This means greater demand for renovation-associated products (eg. door handles, kitchen cabinets, etc.)--lots of room for new and expanded niche markets here!

Industry, Science and Technology Canada | Industrie, Sciences et Technologie Canada

Canada

Competitiveness:

Management by Fact

TECHNOLOGY

Everyone seeks to satisfy the customer or they feel they do. But the contemporary notion of customer satisfaction goes far beyond meeting the client's basic needs. To meet today's standards (and to make service a competitive tool) companies have to explore and satisfy desires the customer may not even have expressed - may not even recognize.

This implies that customer satisfaction is more of a dynamic concept, one that can't be measured on a one-time basis. So with rising consumer expectations and an increasingly competitive environment, on what basis do you make decisions for training, standards, product improvements, technology,...which will drive you to the basic goal of a satisfied customer?

Well, it shouldn't surprise people that in this information age, the age of technology, that facts -- yes facts -- have become the currency of effective management and business success in leading companies. Yet it persists elsewhere that hard data (and often the people who generate them) are relegated to minor and perhaps not even essential roles in business planning and management.

According to a recent Conference Board of Canada survey of Quality award recipients, Management by Fact is one of the most important principles of total quality management. This may seem obvious, so obvious in fact that some companies overlook it! They mix fact with supposition and operate on the strength of past practice, taking the view that the world of 1985 reflects the world of 1992.

In the alligator pond of business, management by memory and instinct is not considered by practitioners as dependable. ***Deming Prize winners (the Japanese quality award) are masters at managing by fact. Their view of the main strength of facts is that decisions made on the basis of them are defendable -- instinct isn't.*** So if everyone uses them, facts become a universal language in the company.

Top level decision-making runs counter to the demands of quality to the customer - the top is often too far from the customer. And the only way (sensibly) to avoid top level management is to move to a regime where facts are revered and made the core of business decisions. This regime stands not only behind quality, but also employee empowerment, participative management and decisions concerning the management of technology.

Does it matter if you use the right facts? Can I use "my" facts? The right facts (and the most relevant) will always relate back to the on-going analysis and intelligence-gathering you do about your customers' needs and preferences. You shouldn't, for example, assume that price is always the number one value to the consumer. Next to the all-important issue of ***QUALITY***, people are interested in and willing to fork out dollars for things like public safety and products produced in a way which promotes and protects the environment.

So, how do I manage by fact when I'm so used to doing my own thing? ***The Conference Board study cites Seven Management and Planning Tools: affinity diagrams, relations diagrams, tree diagrams, prioritization matrices, matrix diagrams, process-decision program charts and activity network diagrams.*** Do you know what these mean? If not, drag those "techies" and "number crunchers" out of the basement and ask them, they'll know.

Getting employees to use these tools (and ergo make fact-based decisions) requires extensive on-going training. And that reinforces one of our favourite points, that continuous life long learning is essential - even if you're a graduate engineer. Some companies even have specially trained people on-site for the express purpose of helping

Competitiveness: Can You Learn From A Distance?

employees use statistical data to make good decisions.

We mentioned that management by fact is linked to empowerment and participative management, both of which are absolutely essential to the adoption of technology. And do you know what employees do when they don't have the facts? They delegate decision-making to their bosses!! Without facts employees are reluctant to make decisions because there is no basis upon which to defend them.

We know that continued technological change is inevitable and integral to competitiveness. But ***new technologies call for greater responsibility and involvement by employees in decisions*** about production processes. And to do that, people must be equipped with the facts -- as well as the proper skills necessary to generate, interpret and apply them!

A new concept - useful meetings! Under a fact-based regime, meetings take on a whole new dimension because people are there to discuss the facts rather than debate opinion, or worse coming with their minds already made up. The purpose of meetings would be to share data and if people want to participate they must come with the facts. Who knows, meetings could actually turn into time well-spent (that could change the face of government!).

No one is exempt here; no one is immune to the facts. Harnessing them in the interests of better management in the 90s is one of the steps toward competitiveness which should be easiest to take.

MANAGEMENT PRACTICES

Discussions are proceeding on Canadian prosperity, and the need for reform of our educational system -- particularly in light of the fact that for Çanada, new jobs are going to be jobs where much more education and skill are needed. We cannot keep our standard of living, in an open world economy, by competing against low-wage countries, with a Canadian workforce that is not up to high-tech par.

There is no doubt in anyone's mind that we need more training and re-education for workers. But the size of the problem! People are talking "back to school". But here we are talking about meeting the training needs of a Canadian population where one in three have learning difficulties. Can that many go "back to school"?

Where do we start when 57% of employees in one industry recently surveyed in BC. cannot read at a Grade 4 level? Society and companies -- let alone the people themselves -- cannot afford to have them leave the workplace to go "back to school.

Where do we start when 57% of employees in one industry recently surveyed in BC cannot read at a Grade 4 level?

Here are some more unsettling thoughts, which actually might have occurred to you when you were lying awake worrying that you (or your brother or your sister) might be phased out of a job in a couple of years.

- *Managers work 60 hours/week. They travel a lot. Who can fit regularly scheduled school -- even night school -- into this?*

- *Most of our population are working age with mortgages etc. to cover. BC is expensive to live in. Who can afford to quit and go back to school, even if they know their job will be phased out in 2 years?*

- *Our small and medium sized enterprises are struggling, feeling the other side of "lean and mean" -- which is "lack of slack." When people go off to school, these enterprises cannot cover for them.*

Open Learning...a unique learning environment, often without walls, offering flexible and distance learning.

– *Who can get to a training institute easily? This is a very big province. Despite new universities and colleges in BC, there are still big distances -- and a lot of bad weather -- between people needing training and people who can train them.*

– *If our societal problems are this big, does it make sense anymore to have only ten percent of the total $2 billion budget go for the education of people 24-plus years old -- of which 98% is spent in universities and colleges where people have the above problems in attending?*

Well, what can we do, then? ***Perhaps, says Tony Bates of BC's Open Learning Agency (OLA), we should as a society be looking to put more emphasis on open and distance learning.*** It can be a lot less costly and more realistic, given the complexity and mix of our societal needs.

So what is the concept of "Open Learning"? ***It is a unique learning environment, often without institutional walls, offering flexible and distance learning.*** It can give you credit courses which are applicable to degree programs at other traditional institutions -- and most importantly, which can be taken at the student's own speed, and at a location of his/her choice. How about at home? Or right in the workplace?

BC is fortunate to have its own Open Learning Agency. The OLA plans, coordinates and administers distance education for the whole province. It arranges for credit transfer across educational institutions in the province, and negotiates and provides "laddered" programming to cover gaps existing between colleges and universities. On the other side, it provides materials and marketing -- 50% of its packages are used elsewhere in the BC learning systems. It also maintains a broadcast channel (you are familiar with the Knowledge Network) which offers open access to colleges, universities and other institutions in BC who want to deliver programs at a distance through television.

Most relevant to companies might be the workplace-based training offered by OLA's Open College. The College's full time consultants can offer private training within a company. They can do anything from a needs assessment to provision of materials and training. Or they can take the company's own "face-to-face" training programs and adapt them for delivery at a distance. They will also broker materials from other sources than OLA.

Teleflex (Canada) Limited recently used the Open College this way. Teleflex makes components for an international manufacturer who demands advanced quality control methods which in turn, demand good communication between manager, supervisors and shop-floor workers. Of a total of 110 employees, the company had 20-30 workers, mostly immigrants, who had poor English language skills. The consultants set up face-to-face English teaching using a distance training package, and put it right into the workplace. Not only was it successful, but employees started pointing out things which they knew very well could improve productivity and operations generally -- they'd just lacked the confidence to try saying them.

But there's even more to this than the effects on individual companies. Our economy is in the midst of structural change. Employment growth has stagnated in resource-based industries and big growth is forecast in more knowledge-based sectors (including service industries) where demands for post-secondary education are universal. A big gap exists between supply and demand. This gap is growing and it threatens our social stability, let alone our prosperity.

Clearly, this reinforces the need to be able to re-train. And time is of the essence. ***To be competitive, we must be able to provide flexible re-training options for people already in the labour force.*** Moreover, it's not just providing an opportunity, it's convincing people that continuous ***life long learning and training are integral parts of a competitive strategy*** -- forming one of the building blocks.

Competitiveness:

The Export Game Plan

And don't think that our competitors around the world don't already know that. Do we want to be left behind?

The concept of open learning is leading edge but it isn't new; it pushes technology to provide creative ways to deliver continuing education programs. Open learning has the potential to meet new challenges in this area. It should not be excluded from options.

To get in touch with OLA and find out about its courses, people can contact Tony Bates at 660-2000.

EXPORT MARKETS

The Canadian economy is in transition -- to date, the export base has been resource companies and major transportation equipment. While these are still integral components, structural changes underway could mean that these sectors won't be as important a factor in export trade as they have been. It's inevitable that more small, technology-based companies will get involved in international markets. There is risk (and we are a risk averse people) and uncertainty -- but market size and the demands of new company rules mean that to grow you have to export. We'd like to draw attention to some features of an export "gameplan" that will help reduce those risks. These features are very prominent in the success of companies which have won recent Canada Export awards.

The first and most critical ingredient in an export gameplan is carried in this question: have you ***a sustainable competitive advantage*** and can it be transported overseas? And that advantage needn't depend solely on a lower price or unique product, it can be as "simple" as outdoing competitors in quality and/or customer service.

An equally clear lesson is that companies shouldn't be frightened off by their lack of size or their cost structures. ***There is a bright future in niche markets - just look at award winner MacDonald Dettwiler and Associates Ltd. (MDA). MDA develops systems for smaller markets, eg. domestic air traffic control systems for Canada (rather than the US) which can then be re-sold to countries like Thailand, India or the UK.*** And that niche strategy netted MDA a cool $74 million in 1989. MDA's competitive advantage is based on dynamic factors (technology, skills) rather than static factors (like cheap labour). Yours can too.

Second, a word about ***quality***. Customers world-wide are simply shutting the door on inferior products - whatever the price. Quality has become a necessary but not sufficient condition to both domestic and international success. ***Quality sells and therefore "makes what sells".*** Judging from award winners, abandon any thought of a strategy based on "selling what you make".

Third, if you're preparing to export, it's essential that you be ***competitive at home first.*** A decision that's backed-up by reality has a much greater chance of success. But, if your product/service is so specialized (eg. herring roe for the Japanese market) that you must export immediately -- the risks and demands are high, making it mandatory that you have an alliance, a partner in the local market. Whatever the best strategy is for you, the international market place is no place for the ill-prepared; it's a place to fully practice Management by Fact (see page 2).

Fourth, ***visit the market in person.*** There's no point sending a shipload of product only to find out that there's no way to distribute it. It's not a good idea to rely only on consultants or government advice. But you can rely on government-sponsored trade shows which are a good way to look at the competition, the distribution system, determine price structures and identify product standards; these shows are comparatively cheap research opportunities.

One of the last steps in choosing a market, and some advice which gets

> ***It's not a good idea to rely only on consultants or government advice.***

repeated time and time again, is ***test your business where you can control some of the risks***. For example, try your product/service in California. Somewhere that's similar to the Canadian market and where you don't have to cope with a foreign language and culture right off the bat. An essential part of the gameplan is, of course, knowing how the market fits with the company's overall objectives. Going to Saudi Arabia may be a profitable first step, but where do you go from there?

Now those are some general gameplan principles. ***We'd like you to hear how some Export Award winners have filled in the details:***

"Make sure when you take your product to the export market that it is ***ready for export***." (Don Ostryznik, Saskatoon Chemicals Ltd.)

"***Quality and service*** are the key." (Comas Ho, Terra Nova Fishery Co.)

"Start close to home where you can test the waters. Then go on ***trade missions*** in selected markets." (Chris Beames, Ilco Unican Inc.)

"You must be as ***adaptable*** as you reasonably can be while maintaining cost effectiveness." (Greg Breen, Imax Systems Corporation)

"In price, we need to define the pain threshold, but we have to be ***flexible***. We deliver the way the customer wants." (Hagen Schultes, Baymag)

"Do not leave a large void every time someone goes away. It is important to have ***backup at home***." (Richard L'Abbe, Med-Eng Systems Inc.)

Overall, a company must have...a ***total commitment*** to exporting." (Jean-Louis Leblanc Lab-Volt Ltd.)

"It is very important to ***tie up all the components***: products, distribution networks and financial sanity." Maks Wulkan, Eicon Technology Corp.)

"You almost have to ***be a chameleon***, moulding yourself to the people's methods of doing business." (Richard L'Abbe, Med-Eng Systems Inc.)

QUALITY SPEAK

Do You Know and Use These Quality Principles?

Benchmarking: Rating practices, processes, and products against the world's best, including those in other industries.

Pareto Chart: A bar graph that ranks causes of process variation by the degree of impact on quality.

Poka-Yoke: Employing devices that make the workplace mistake-proof.

Six-Sigma Quality: A statistical measure showing how close a product comes to its quality goal. One sigma means 68% of products are acceptable; three-sigma means 99.7%. Six-sigma is 99.999997% perfect; i.e. 3.4 defects per million parts.

Total Quality Control (TQC): Applying quality principles to all company endeavours, including satisfying internal "customers."

Adapted from Business Week: October 25, 1991

Competitiveness: Canada at the Crossroads

The Dark Side of a Legacy of Wealth

SPECIAL FEATURE

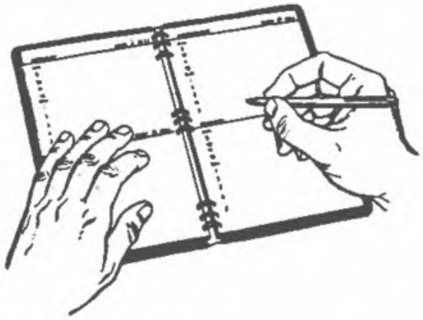
As the Canadian economy continues to bump along, as North American business looks overseas for its innovation and quality models, as we come to recognize the economic challenge this country faces - we have been inundated with studies (by banks/credit unions, governments, think tanks, advisors) all trying to diagnose the present malaise. Among the most provocative and perhaps compelling of these in relation to Canada's situation is a recent study for the Business Council on National Issues and the Canadian government prepared by Harvard Professor Michael Porter (whose model on competitiveness has found wide international acceptance).

Much of the editorial comment on Porter's work (released October 24th and followed by a visit to Vancouver in November) has been critical on these bases: he's just another expert (i.e. someone from out of town); he says nothing new; his views are captive to largely big business interests. We would encourage all of you to read the study synthesis (it's only 101 pages) and form your own judgement. Assuming that a few of you may not rush out and get a copy, we would like to focus on some of Porter's conclusions which have not been widely reported but which are vital to understanding the value of his work to this debate. First, ***the work is more comprehensive than it might appear***; 25 sectors were studied in detail with the results (forthcoming) in a 600 page text of what Porter believes are the facts on performance and prospects within these sectors.

And respecting these facts, it is clear that Porter sees our competitiveness needs more in reference to ***keeping up with, rather than catching up to,*** the leading industrialized nations in the world. This is an important distinction and one that ought to spur us to prompt action (knowing that catching up will be a far greater challenge). To keep up, Porter does not argue that ***social programs*** need to be scrapped, that ***wages*** need to be cut and our ***environment*** sacrificed. Quite the opposite. His analysis reveals that social programs (eg. health, training/education) help to give workers the sort of security which is essential if we are to embrace the vital notion of ***continuous change and improvement*** in our economy - these programs though need to be linked in a positive way to improving overall productivity. This is a design challenge, not an invitation to abandon the social safety net.

Porter contends that ideas of competitiveness which hinge on cheap labour or other low input costs are ***obsolete*** - they are based on static advantages which other competitors around the world can quickly undercut. What is essential are the ***dynamic factors*** of innovation (driven by skilled people and technology) which becomes a process of continuous and cumulative upgrading of the economy. On the question of environmental standards (and standards generally), Porter is equally clear, "Stringent standards and regulations for product performance and environmental impact can create and upgrade competitive advantage by pressuring firms to improve product and process quality".

You may also have gained the impression that Porter has a bias against (variously) the resource sectors, or against diversification, or against foreign investment. The position the Study takes on these issues is more complex than that. ***There is nothing, the Study attests, undesirable about resource industries, as long as they "continually upgrade their sophistication through product/process improvements".*** On the question of diversification into high-tech industry, Porter frowns, on the one hand, upon efforts to force growth, to introduce sectors/firms where there is no ***sustainable competitive base*** for these



Calendar of Selected Events

industries. On the other hand, he feels that high tech sectors can be and should be built around what we do best. For BC., that's a high tech sector which is rooted in and clustered around resource-based industries - and then is able to evolve across a range of products (this is the root of the success of companies like MDA). On foreign investment, Porter appears neutral - it matters less where the investment comes from as it does what foreign companies do once they're here, i.e. do they ***upgrade and innovate***. And the answer is yes, if the environment is right.

A final observation we would make has to do with the perception that Porter offers no solution, is not prescriptive enough. Beneath the veneer though, he does offer an expansive list (the Globe reported 26) of actions not only by governments but by business and labour, which would set in place greater acceptance of change and encourage the dynamic improvements which our competitors are already making.

There are some strong messages in "Canada at the Crossroads" which will be very difficult to deny. A new economic vision is required in Canada, one that is resolved to breaking down the "systemic barriers" to innovation, to training, to R&D, to reform, to restructuring, to interprovincial trade, to labour-management cooperation, to technology diffusion, to business-government and inter-governmental coordination. And also a vision upon which people are willing to act, and act simultaneously. The obligations on government, business and labour (and consumers, to include the balance of the population) are profound. They will only be met if we move quickly beyond the rhetoric of cooperation and on to action.

Single copies of the Summary Report are available at the ISTC Business Services Centre, 666-0266.

Europe 1992 & Telecommunications Industry Sector Seminar, January 1992, Vancouver. Part of a series of cross-Canada seminars sponsored by External affairs & ITC. Contact Jacalin Crosfield, 666-1440.

Food Labelling Seminar, February, 1992, Vancouver. Seminar for processed food exporters regarding new labelling requirements from the US FDA. Contact: Rick Stephenson 666-1443.

Women Doing Business in Asia Seminars, January-March 1992. Contact: Lynda Peach, 666-1426.

AQUATECH'92, March 1-3, Halifax. Annual conference of the Canadian Aquatic Biotechnology Network. Contact: Ron Farris, 666-1409.

Mining Week, March 9-13, Vancouver. Annual conference and career fair. Contact: Roger Bryenton, 666-4905.

GLOBE 92 Trade Show & Conference, March 16-20, Vancouver. An international trade show and conference focusing on the environmental sector. Contact: Jacalin Crosfield, 666-1440.

Tourism Career Expo'92, April 6&7, Vancouver Trade and Convention Centre. An opportunity for students to investigate tourism as a career. Contact: Diane Marcoux, 682-8000.

This newsletter is published quarterly. For more information contact:

Dr. Brian Anderson
Director
Policy and Operations

Sandy Steward
Economist
(604) 666-1419