University Grant Program Research Report

THE DEVELOPMENT OF NEW INDUSTRIAL PRODUCTS IN CANADA. (A SUMMARY REPORT OF PRELIMINARY RESULTS PHASE 1)

by

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The views and opinions expressed in this report are those of the author and are not necessarily endorsed by the Department of Industry, Trade and Commerce.

THE DEVELOPMENT OF NEW INDUSTRIAL PRODUCTS IN CANADA

A Summary Report of
Preliminary Results--Phase I

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THE DEVELOPMENT OF NEW INDUSTRIAL PRODUCTS IN CANADA

1.0 INTRODUCTION

This report summarizes the results of a preliminary analysis of data gathered in Phase I of an integrated research program to examine the process of product innovation by manufacturers of industrial goods in Canada. The prime emphasis of the research is on the role of marketing in the management of product development, rather than the role of technical development. The general approach was to study the management decision process for new product projects and to relate the process to factors describing the company and its market situation.

There are four sets of results in this report and each set is presented separately in summary form although there are obvious interrelationships. The results are reported, each set with introductory sections, under the following topic headings:

1. The Assessment of Markets for New Industrial Products--An Overview.
2. The Extent of Market Assessment for Projects.
3. The Use of Primary and Secondary Information Sources.
4. The Role of Government in New Product Development.

The results shown here should be read with the fact in mind that they represent the preliminary analysis of data--some variables discussed may be remeasured and subjected to more refined analysis--and implications drawn from such analysis are thus subject to qualification. Further analysis is not, however, expected to change substantially the basic thrust of these results.

Preceding the four sections summarizing the results is a description of the research methodology employed in the study. The report concludes with an outline of where these Phase I results fit in the overall research program being conducted.(omitted)

2.0 RESEARCH METHODOLOGY

During the months of June, July, and August 1971, interviews were conducted with management personnel in 152 industrial products manufacturing firms located in Ontario and Quebec. Most interviews were with one person

only, although in a number of instances other management personnel were brought into the discussion; in all cases the interviewers attempted to deal with persons most familiar with the firm's overall new product development activities. Interviews lasted from two to four hours and were based on a lengthy printed questionnaire.

Information about new product development activities were obtained from companies on two levels of detail: first of all, descriptions of company new product development practices were obtained at a general level along with information describing overall company operations; then the histories of specific new product projects were obtained in some detail.

The companies studied were chosen, first, on the basis that they manufactured industrial goods in specific industry segments, and second, that they were known to have engaged in at least some new product development work. Beyond these first two criteria, companies were sought which would represent a limited number of manufacturing industries and a range of sizes. In addition, preference was given to companies located near main transportation routes between Windsor and Quebec City. The main source from which the sample was selected was: Directory of Scientific Research and Development Establishments in Canada, Department of Industry, Trade and Commerce, 1969. Other private lists of companies were the source of part of the sample. A description of the sample by industry and size is shown in Exhibit 1. Certain industries are not represented in the sample, such as mining and smelting, wood products, pulp and paper, food product, apparel. New processes were specifically not examined, although it was recognized that process development was an important part of product development in some cases, such as in heavy chemicals.

The title of this report and the presentation of results implies that the data obtained in this research is wholly representative of new product development in Canada. In fact, it is not, since the sampling procedure was not random. In addition to the geographic and industry boundaries, no very new firms (less than two years old) were contacted. It is likely that the bias in the sample is toward an over-representation of the more innovative, better managed firms. (Note especially that consumer goods firms are not included in the study.)

Exhibit 1

Description of Firms Studied
By Industry and Annual Sales.

Industry	Annual Sales ($ Millions)						
	No Resp	Up to 2	>2 to 10	>10 to 40	>40 to 100	>100	Total
Electrical Equipment, small and large; Electronic products; Scientific Instrumentation; Process Instrumentation.	2	17	16	4	1	3	43
Chemicals, heavy; Specialty; Pharmaceutical; Protective and Coatings.	1	4	12	5	3	6	31
Equipment, light industrial, components; Machine Tools and Supplies; Material Handling, Vehicles and Equipment; Air-conditioning and other Building Equipment.	0	12	13	9	4	2	39
Automotive, Aircraft, Agricultural Vehicles Components, and Fabricated Metal parts.	1	2	3	10	3	3	24
Miscellaneous, including Industrial Textiles; Plastic and Rubber Fabricated Parts, Construction Materials, Packaging Materials, Other Raw Materials.	2	0	4	5	4	1	15
Totals	6	35	48	33	15	15	152

The cooperation extended to this research project by Canadian industry was outstanding. Interviewers were well received and information was given fully and willingly. Confidentiality of individual company data was promised and was upheld throughout the study. With this assurance, only a few companies felt it necessary to withhold certain pieces of company information. Only three companies contacted were unwilling to grant an interview and one other company which granted an interview was uncooperative in providing data. In two of these unsuccessful contacts the managers expressed an antipathy for "academic research". The high level of acceptance of this research project by Canadian managers and the enthusiasm for the topic which they exhibited in the interviews is indicative of their concern for the new product process and their interest in seeking improvement.

In spite of the cooperation of the studied companies, the data contain a number of limitations. In the first place, the answers provided by an individual manager may not be truly representative of the facts of an organization, knowledgeable and experienced though that individual may be. Secondly, some data represent past history, and although in a number of instances these data were supported by documents, in other instances they represent the memory of the interviewee. Finally, some information was gathered with questions that the interviewee had not himself addressed while engaged in new product development problems; they sometimes required him to think about his business from an unfamiliar framework. The problem of interviewer bias was addressed by having extensive interviewer training prior to the main data gathering phase and holding frequent discussions among the interviewers during the course of their data gathering. It is quite possible, however, that there remains in at least some areas of the data the effects of the selective perception of the interviewers, and the effects of their interaction with the interviewees.

3.0 THE ASSESSMENT OF MARKETS FOR NEW INDUSTRIAL PRODUCTS--AN OVERVIEW

3.1 Introduction

The successful development and marketing of new products is vital to the success of most firms and important to the stability and growth of Canadian industry. A number of studies have reported the high extent to which companies rely on new products for profit and sales

growth,[1] and the Science Council has recently outlined the importance of innovation in Canadian namufacturing.[2] The development of new products generally involves high costs, high risk, and long delays in the development process.[3]

A key to successful new product development, an important way to reduce the risk and delay inherent in new product development and market introduction, is the accurate assessment of the nature and extent of the market for a new product. In one survey, lack of information about potential customers and competitors was the major reason given by manufacturers of industrial products for their past new product failures.[4] In another study, over half the reasons given for abandoning R&D projects were connected with market factors, assessment of which took place, presumably, some time after considerable expenditures of R&D funds.[5]

Despite the evidence pointing to the importance of market assessment activities, the inclination of managers in industrial goods firms to undertake extensive market assessment in tackling marketing problems in general and new product development problems in particular, and the ability to do so, is often lacking, especially in firms dominated by technology-oriented managers. The approach in many such firms seems often to be to focus on developing product technology from the technologist's viewpoint and then to consider how a market can be developed for the technology. The Science Council report displays a little

[1] See for example: "The Marketing Executive Looks Ahead", Experiences in Marketing Management, No. 13, National Industrial Conference Board, 1967; A Study of Forty Companies and How They Grew, Time magazine Marketing Information Report No. 1306, 1964.

[2] Innovation in a Cold Climate: The Dilemma of Canadian Manufacturing, report N. 15, Science Council of Canada, Oct. 1971.

[3] See for example: The Management of Research and Development, Booz, Allen and Hamilton, 1960.

[4] "Why New Products Fail", The Conference Board Record, Oct. 1964, p. 11.

[5] On The Shelf, Centre for the Study of Industrial Innovation, London, July 1971.

of this approach when it discusses factors which must be favourable for innovation to be a practical proposition: "For one thing, the accessible market must be large enough and complex enough to accept and support a high proportion of the innovations that might be offered".[6] On the other hand the report does recognize the value of market research and other marketing activities in product innovation:

> The true role of market research is to identify a needed new product, relate this need to R&D, and (in concert with the responsible corporate departments) design, test, engineer and set up the pilot operation on the new product. A market research department with a more limited view represents a gap in the innovative chain.

3.2 Results

3.2.1 Full time market assessment

The study revealed most clearly that market assessment activities enjoy a relatively minor role in the operations of Canadian manufacturers. Of the 152 companies studied, only 34 employed at least one person who was actively involved full-time in market analysis and assessment. Of the 34 firms who did employ such persons, 20 employed 3 or fewer. Not surprisingly, larger companies more often had full-time market assessment employees than smaller companies, but what was surprising was the large number of very large companies that did not have any full-time market assessment employees. (See Exhibit 2)

Differences in numbers of full-time market assessment personnel could not be detected across industries, for companies of similar size. There were differences, however, between companies that usually developed products for a few customers or for individual customers and those that developed products for a large number of customers on more of a mass market basis. One hundred and two of the firms studied had developed over 70 percent of their

[6] Innovation in a Cold Climate, p. 25.

[7] Ibid, p. 34.

Exhibit 2

Number of firms employing persons who are actively involved in full-time market analysis and assessment, by size of firms.

No. of Full-Time Market Assessment Persons Employed	Annual Sales ($ Millions)						
	No Resp	Up to 2	> 2 to 10	> 10 to 40	> 40 to 100	>100	Totals
None	6	35	44	26	5	2	118
1-3	0	0	4	5	5	6	20
4-6	0	0	0	2	3	1	6
6-10	0	0	0	0	1	3	4
More than 10	0	0	0	0	1	3	4
	6	35	48	33	15	15	152

new products for a mass market. Thirty of these mass market firms had full-time market assessment employees. Of the remaining 50 firms, only 4 had such employees, and this tendency held within each company size category. It is, of course, reasonable that there should be more commitment to market assessment where markets are more extensive.

Those employed full-time in market assessment were for the most part in marketing research or other marketing staff positions. Twenty-two of the firms had established market research departments (including one-man departments), but other positions were also involved full-time in market assessment, including planning staffs, sales management, technical staff, and in one case, general management.

3.2.2 Part-time market assessment

In nearly all companies studied, a large number of employees in a variety of positions were considered to make contributions to the market assessment task on a part-time basis, very often on an informal basis. In 125 companies, for example, sales personnel were the source of some market assessment data. Sales management was involved part-time in market assessment in 119 companies, general management was involved in 69 companies, technical staff in 57 companies, distributors' representatives in 16 companies, and so on.

3.2.3 Type of market assessment

The most common type of market assessment activity for companies with full time market assessment employees was the study and analysis of secondary data--published data on the past. Three-quarters of such firms utilized D.B.S. statistics; three-quarters used trade journal information; two thirds used a variety of other literature sources and internal records; one third used trade association data.

Most firms also reported using special visits to customers as well as routine sales calls--a primary data source--to assess markets and this practice was relative more common among those conducting market assessment on only a part-time basis.

Only a dozen of the 152 firms studied gained market information through development and testing of a prototype. Only a dozen firms sought market information through special mail out forms or questionnaires. Only six firms used the technique of circulating dummy specifications to assess the market.

In total, the picture of market assessment activities shows very few firms are actively engaged in generating original data through specialized market research techniques. Instead, firms rely on customer visits, mainly by salesmen, and on analysis of published historical data.

3.2.4 Market assessment for new product development

The limited role of market assessment in the operations of the manufacturing firms studied pales even further when that role is revealed as one aimed mainly at on-going short-term tactical sales problems rather than long-term marketing strategy development and new product development. One indication of this role is the lack of use of market research techniques to gather original data. Another indication is that of all the time spent on market assessment, on both a full and part-time basis, less than 20 percent is spent on examining new product ideas. Assessing markets for new product development is clearly not a major activity in terms of the resources allocated by the companies in this study.

3.2.5 Types of firms

There would be no need for concern about the state of market assessment for new products if it weren't for the fact that those firms which devote more resources to assessing markets for new products have introduced more new products, a relationship that holds for firms of different size. Moreover, foreign-owned firms in Canada were far more likely to devote resources to assessing markets for new products than were Canadian owned firms. In all size categories, firms that were foreign subsidiaries were much more likely than other firms to have higher levels of manpower devoted to new product market assessment, and privately owned Canadian firms reported the lowest levels. Thus, Canadian manufacturing is dominated not only by foreign ownership but also by higher levels of new product assessment activities for foreign-owned firms.

3.3 Summary

The commitment of industrial products manufacturers to the task of market analysis and assessment, particularly for purposes of new product development, is at an extremely low level. The commitment of Canadian firms is especially weak compared to that of foreign firms in Canada, especially U.S. firms. The low commitment is serious for the firms

involved and for the Canadian economy since high commitment to market assessment is related to high levels of new product introductions.

4.0 THE EXTENT OF MARKET ASSESSMENT FOR PROJECTS

4.1 Introduction

While necessary for sustained economic growth, new product development entails a high level of risk: considerable expenditures at a high level of uncertainty are typical of many new product ventures. Information tends to reduce uncertainties, and therefore many companies are using market research to reduce the commercial risks in new product development. However the millions spent on technical research in Canada stand in striking contrast to management's far lesser expenditures on market research.

In the analysis of new product decisions, expenditures on market research should be expected to result in additional revenues or reduced costs. However there are no widely accepted procedures for evaluating the profit from market research or for determining the appropriate amount of market research that should be done. With few guidelines, new product managers have difficulty deciding how much to spend on market research for new products.

In this analysis, the extent of market assessment, (the number of manhours expended on gathering market information) reported for the specific new product projects was related to the market situation of the new product project. The market situation was described by the factors which constituted the market risks facing the company.

4.2 Results

The extent of market assessment is closely related to:

a) the estimated cost to the company if the project fails

b) the level of anticipated sales of the new product

c) the perceived newness to the company of the market for the product

d) the degree of competition anticipated in the new product market

e) the expected number of customers for the new product.

4.3 Conclusions

Certain components of risk in a new product situation were identified as influencing the extent of market assessment which was conducted by managers. Other factors may also affect this judgement, but those identified are important. (Note that only the extent not the type or quality of market assessment was examined).

This analysis is continuing toward the development of a model to help managers determine the appropriate amount to spend on market assessment for any given new product project.

5.0 THE USE OF PRIMARY AND SECONDARY INFORMATION SOURCES

5.1 Introduction

In responding to market information needs during new product development, individuals involved in the new product process utilize a variety of information sources. Their choice of information source will be dependent on the specific new product situation, the regular information gathering conducted by the firm on a ongoing basis, and their own personal preferences and past experience.

In this analysis, data sources were classified as either "primary"--gathered first hand from the market--or "secondary"--published data on past events. Analysis was restricted to those companies in the study that developed products for a large number of customers rather than for one or a few customers.

5.2 Results

5.2.1 Primary information sources

Companies that have a greater dependence on new products (a high proportion of their current sales are from recently developed products), and companies that are more active and experienced in new product development (have developed a large number of new products recently) make much greater use of primary information sources when working on a new product project than do companies less oriented toward new products. The new product based companies also collect a greater amount of their regular ongoing market data from primary sources.

5.2.2 Secondary information sources

Companies that do more market assessment for new projects through secondary information sources tend to have:

a) a higher proportion of employees in (non-selling) marketing tasks,

b) a more formal sales force information system,

c) a higher proportion of employees in R&D,

d) a greater amount of market information continuously generated from secondary information sources.

5.3 Conclusions

Certain relationships between company organizational factors and choice of type of information source were identified. These relationships serve to raise questions for individual firms about the balance between primary and secondary data use.

This analysis is continuing and will explore further the preferences of managers for various kinds of data gathering in given new product situations toward the goal of determining the appropriate assessment activity for specific projects and firms.

6.0 THE ROLE OF GOVERNMENT

6.1 Introduction

There is a growing concern, expressed by many Canadian businessmen and politicians, that the Government of Canada should develop a national industrial strategy which will allow us to make rational decisions about such things as which industries to support, which products to develop, which skills to acquire, and so on. The Science Council of Canada in its report, Innovation in a Cold Climate, states:

> Unlike many other countries...Canada has never explicity stated an overall industrial policy. From time to time, various segments of it are promulgated: a policy for the textile industry, for example, or for automobile production.

> As a consequence, we have a variety of individual industrial strategies. Some of these effectively cancel one another out, others are mutually incompatible. It is now becoming clear that this patchwork of strategies often fails to support the very industries most likely to satisfy national expectations; this happens, not by design, but by default. All too often, national support is used to rescue failing industries instead of to back viable ones.[8]

As a major component of industrial policy, the Science Council report recommends that the federal government "should develop a coordinated industrial strategy which recognizes the significance of innovation and gives priority to industries of high innovative potential."[9] The government does, of course, give expression to an implicit industrial strategy through its day to day operation of a number of incentive programs for encouraging industrial innovations. These programs involve substantial sums of money and if they are "self-defeating and ineffective" as the Science Council report suggests they might be, then the situation demands the strong concern of business and government and the taxpayers at large.

In this analysis, companies were divided simply into two categories--those that had and those that had not received federal government assistance in new product development. Then, specific projects were similarly divided. No further analysis was made as to the amount or type of assistance given--all programs offering incentives were aggregated as "government assistance".

6.2 Possible Results

There were three basic themes that might have emerged from the analysis and it was difficult to develop in advance an indestructible argument for any single hypothesis. The first possibility was one that supporters of present government schemes might predict--that the government plays a very positive role and successfully discharges the directive given for such programs as PAIT, that firms

[8] Innovation in a Cold Climate, p. 38.

[9] Ibid, p. 39

receiving government assistance develop products of advanced technology and do so successfully, more so than firms not receiving government assistance.

The second possibility, one that the government program cynic might support, is that companies receiving government assistance would tend to be poorer performers, that projects would tend to be less risky, less significant, less successful than average. The reasoning here is from two sides. First, civil servants are likely to be risk averse since their careers depend upon their careful use of public funds, and playing the role of the risk-taking venture capitalist is not an image a prudent, taxpayer-sensitive civil servant would play. Moreover, government employees are unlikely to be able to translate program ideals into practice. They are unlikely to be competent judges of business opportunities, given their restricted contact with industrial realities, and would opt for minor, secure projects they could comprehend. At the same time, firms receiving government funds will be less aggressive and less attentive to their projects since (in the words of one manager) "it's their money, not ours--we're just spending 25¢ dollars". With most of the financial risk in the project removed, the project will be poorly managed, and the company will put nearly nothing of itself into the venture.

The third hypothesis is that government funding plays a neutral role, that there is no difference between firms or projects that do and don't receive new product development assistance. This hypothesis rests on the argument that incentive programs are self-defeating and ineffective, that there is no consistent direction in the administration of such programs, and that, in any event, government employers are not skilled in selecting projects even if their criteria were clearly established. (Of course, the new product failure rates of industry bring into question the project selection skills of even the most experienced and competent industrial managers, so the hypothesis of a neutral effect is perhaps justified solely on the grounds of the difficulty in picking winners.)

6.3 Results

6.3.1 Companies

Of 152 firms in the sample, 83 (55%) had received government R&D assistance during the preceding three years, 58 firms (38%) had not, and 11 did not know or

would not reveal whether they had. (Half the foreign owned firms did receive assistance; 61% of Canadian owned firms did.)

In partial support of the "positive hypothesis" is that firms receiving government funds:

a) were more dependent on new products (a higher proportion of their sales from products developed during preceding five years

b) had higher levels of R&D expenditures.

6.3.2 Projects

Of 152 specific projects described by respondents, 36 (23%) were assisted by government funds, 109 (72%) were not, and 7 respondents did not know or reveal whether or not their projects were assisted.

Further support of the "positive hypothesis" emerges from the finding that projects receiving government funds:

a) more often required the developing firm to acquire new skills

b) involved much longer development time

c) involved much higher development costs

d) more often required the developing firm to acquire new manufacturing skills

e) were more likely to result in high financial loss for the company if the product was a failure.

f) were more often perceived by the developing firm to be a high risk venture.

In summary, then, the foregoing results indicate that government assistance tends to go to companies that have past success and to projects that involve technology advances that are significant for the firm and financial risks that are significant for the firm and significant in absolute terms.

The assistance goes to projects where considerable effort input is involved--but the apparent level of output from the effort tends to support the "neutral hypothesis", if not the "negative hypothesis". Projects receiving government funds:

a) involved entry into new markets (new for the developing firm) only slightly more than for non-funded projects

b) were estimated to have the same level of annual sales as those not receiving funds

c) were for markets with lower growth rates and lower long run market potential than non-funded projects.

If it is true that the effort, especially the technical effort, put into government funded projects was great but the results of the efforts disappointing, the reason may lie in the competitive companies' resource strengths. Government funded projects were from companies who perceived their new project competitive position to be:

a) equivalent to competitors in R&D strength

b) slightly weaker in manufacturing strength

c) much weaker than competitors in financial strength and marketing and sales strength.

6.4 Conclusions

The role of government in new product development appears to be to support technical effort with little or no attention paid to marketing and financial factors. This role is consistent with the view that successful product innovation can be achieved by pressure at the technical end of the process, the assumption being, apparently, that commercialization is an inevitable (and almost incidental) consequence of technology development. Such a view is seldom stated explicity by those involved in technology development (and may even be denied), but it is a view that is implicit in many prescriptions being offered to improve innovation. It is a view that fails to comprehend the total new product system.

UNIVERSITY GRANT PROGRAM RESEARCH REPORTS

RAPPORT DE RECHERCHE SUR LE PROGRAMME DE SUBVENTIONS AUX UNIVERSITES

	AUTHOR(S)/AUTEUR(S)	UNIVERSITY/UNIVERSITÉ	REPORT TITLE/TITRE DE L'OUVRAGE
1.	I.A. Litvak C.J. Maule	Department of Economics, Carleton University.	Canadian Entrepreneurship: A Study of Small Newly Established Firms, October, 1971.
2.	Harold Crookell	School of Business Administration, University of Western Ontario.	The Transmission of Technology Across National Boundaries, February, 1973.
3.	M.H.E. Atkinson	Faculty of Graduate Studies, University of Western Ontario.	Factors Discriminating Between Technological Spin-Offs and Research and-Development Personnel, August, 1972.
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5.	Blair Little R.G. Cooper R.A. More	School of Business Administration, University of Western Ontario.	The Assessment of Markets for the Development of New Industrial Products in Canada, December, 1972.
6.	F. Zabransky J. Legg	School of Business Administration, University of Western Ontario.	Information and Decision Systems Model for PAIT Program, October, 1971.
7.	K.R. MacCrimmon W.T. Stanbury J. Bassler	Faculty of Commerce and Business Administration, University of British Columbia.	Risk Attitudes of U.S. and Canadian Top Managers, September, 1973.
8.	James C.T. Mao	Faculty of Commerce and Business Administration, University of British Columbia.	Computer Assisted Cash Management in a Technology-Oriented Firm, March, 1973.
9.	J.W.C. Tomlinson	Faculty of Commerce and Business Administration, University of British Columbia.	Foreign Trade and Investment Decisions of Canadian Companies, March, 1973.
10.	G. Kardos	Faculty of Engineering, Carleton University.	Case History of Three Innovations: Webster Mfg. (London) Ltd; Spectrac Limited, and The Snotruk, 1973.
11.	I.A. Litvak C.J. Maule	Department of Economics, Carleton University.	A Study of Successful Technical Entrepreneurs in Canada, September, 1972.
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13.	Carl Prézeau	Faculté d'administration, Université de Sherbrooke.	The Portfolio Effect in Canadian Exports, May, 1973.
14.	M.R. Hecht J.P. Siegel	Faculty of Management Studies, University of Toronto.	A Study of Manufacturing Firms in Canada: With Special Emphasis on Small and Medium Sized Firms, December, 1973.
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16.	A.R. Wood J.R.M. Gordon R.P. Gillin	School of Business Administration, University of Western Ontario.	Comparative Managerial Problems in Early Versus Later Adoption of Innovative Manufacturing Technologies, (Six Case Studies), February, 1973.
17.	S. Globerman	Faculty of Administrative Studies, York University.	Technological Diffusion in Canadian Manufacturing Industries, April, 1974.
18.	M. James Dunn Boyd M. Harnden P. Michael Maher	Faculty of Business Administration and Commerce, University of Alberta.	An Investigation into the Climate for Technological Innovation in Canada, May, 1974.
19.	K.R. MacCrimmon A. Kwong	Faculty of Commerce and Business Administration, University of British Columbia.	Measures of Risk Taking Propensity, July, 1972.
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22.	I. Vertinsky K. Hartley	Faculty of Commerce and Business Administration, University of British Columbia.	Project Selection in Monolithic Organizations, August, 1974.
23.	Yvan Allaire J.M. Toulouse	Faculty of Management Sciences, University of Ottawa.	A Comparative Study of the Values and Needs of French-Speaking and English-Speaking M.B.A. Students, August, 1973.
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27.	Blair Little	School of Business Administration, University of Western Ontario.	Wrecking Ground for Innovation, February, 1973.
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29.	Blair Little	School of Business Administration, University of Western Ontario.	The Role of Government in Assisting New Product Development, March, 1974.
30.	R.G. Cooper	Faculty of Management, McGill University.	Why New Industrial Products Fail, January, 1975.
31.	M.E. Charles D. MacKay	The C.E.R.C.L. Foundation, 200 College Street, Toronto, Ontario. M5S 1A4	Case Studies of Industrial Innovation in Canada, February, 1975.
32.	M.R. Hecht	Faculty of Management Studies, University of Toronto.	A Study of Manufacturing Firms in Canada: With Emphasis on Education of Senior Officers, Types of Organization and Success, March, 1975.
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