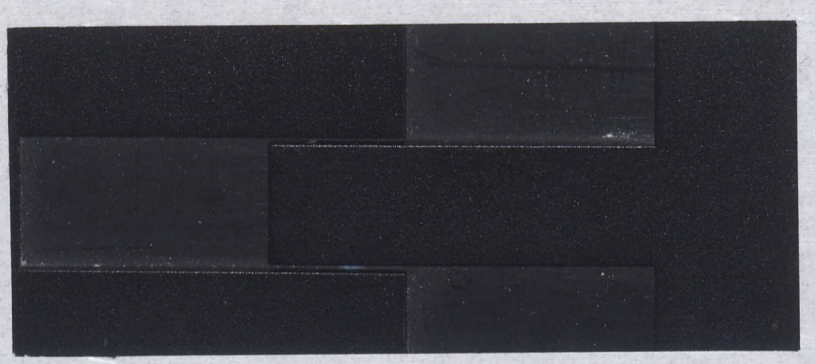
CREATING VALUE

FOR EXPORT



CREATING VALUE

FOR EXPORT

Success Factors, Obstacles and Challenges in the development of 20 innovative export firms in Nova Scotia and PEI

June, 1994

DRM ADVISORY GROUP

This report is the result of interviews with a group of innovative export companies, primarily located in Nova Scotia. These companies are drawn from both the manufacturing and service sectors. Nineteen of the 20 firms included in the study are based in Nova Scotia; one is based on Prince Edward Island.

These companies derive a substantial portion of their revenues from outside the Atlantic region, and their businesses each include some unique and innovative components. They are all locally owned or managed. The interviews were designed to understand some of the key factors affecting their successes and development to date.

We would like to express our appreciation to all the companies who participated in this work. Their interest, enthusiasm and willingness to discuss their experiences contributed immeasurably to the project. We hope we have done justice to them both in the profiles prepared for each company, and in identifying key issues in the discussion and analysis section of this report.

This project was sponsored by Industry Canada, Halifax and undertaken by:

DRM Advisory Group
1718 Argyle Street, Suite 810, Halifax, NS B3J 3N6
Tel: (902) 422-1100 Fax: (902) 422-0999

CREATING VALUE FOR EXPORT

Success Factors, Obstacles and Challenges in the development of 20 innovative export firms in Nova Scotia and PEI

DRM Advisory Group

June, 1994

How to Read this Report

This project looks at the experiences and development of a group of innovative firms, a significant portion of whose revenues are derived from exports outside the Atlantic region. The project was qualitative in nature, and the purpose of this report is to inform and provoke discussion. The aim has been to present the information in an acccessible way, and point to underlying themes.

The factors that are helping and hindering the companies in this project are too complex for simple prescriptions. However, a number of implications are suggested by this review of their experiences. These are discussed in later sections of the report.

It is the hope of the study team that the work done in this project will help others to focus more clearly on the nature of some of the core issues affecting companies like those profiled here. Changes in the approach, attitude, policy and/or institutional structures in the region will require a broad understanding of these issues.

The best way to approach this document is to sit down with it for an afternoon or an evening and read it in full. However, due to its length, some readers may wish to review the report briefly or read only parts of it. The following provides a reading guide.

Part I: Overview

- The *Highlights* section provides a summary of the most provocative issues that arose during the project.
- The *Background* introduces the perspective from which the project was initiated.
- The *Overview of the Companies* provides brief background information on the participating companies.

Part II: Company Profiles

This part of the report represents the essential core of the work. It provides anecdotal information on the key success factors, challenges and obstacles experienced by the individual companies during their development, drawn from interviews with CEOs and staff.

This section can be easily "dipped into" by reading those company profiles of particular interest. The profiles are divided for convenience into three groups:

- The Smaller Companies (under 15 employees)
- The 'Mid-Size' Companies (15-50 employees)
- The Larger Companies (over 50 employees)

Part III: Discussion and Analysis

This part of the report highlights some of the main issues that emerged during the interviews.

- To read about how companies have been successful in developing their businesses, turn to the section entitled *Overcoming Obstacles – Making Things Work.*
- To explore issues relating to effects of the government and policy environment on these companies, refer to the section called *The Government Presence – A Mixed Blessing.*
- To review the implications for creating a better environment within which innovative companies can prosper, turn to the concluding section, which is entitled *Movement and Change: Threat or Opportunity?*

CONTENTS

PART I: OVERVIEW

REPORT HIGHLIGHTS 1

BACKGROUND
- Introduction 5
  - Underlying Economic Challenges 5
  - Impending Threats 6
  - Taking Charge 6
  - The Role of Innovative Exporters 7
  - A Uniquely Regional Issue 9
  - Creating the Right Ground 10
  - Innovative Companies Create New Wealth 11
- Objectives 13
  - What this Project is About 13
  - Uses of the Project Information 14
- Methodology 15
  - How the Study was Conducted 15
  - The Project Team 16
  - Sponsorship 18

OVERVIEW OF THE COMPANIES
- Some Surprising Innovators 19
  - The Companies and their Challenges 20
  - The Types of Companies Profiled 21
- The Companies at a Glance (Table) 23
- Brief Descriptions of the Companies 25
  - A. The Smaller Companies 27
  - B. The 'Mid-Size' Companies 31
  - C. The Larger Companies 35

PART II: COMPANY PROFILES

COMPANY PROFILES: The Smaller Companies
- Atlantech Extrusion Inc. 40
- Canadian Fishery Consultants Limited 46
- CanJam Trading Ltd. 52
- Orion Electronics Limited 58
- Precision Biologicals Inc. 64
- Spots Pots Inc. 70
- Worthington Software Company 76

COMPANY PROFILES: The 'Mid-Size' Companies
- Fenwick Laboratories Limited 82
- Focal Technologies Inc. 88
- Metals Economics Group 94
- Prograph International 100
- Salter Street Films 106
- Tri-Star Industries Limited 112

COMPANY PROFILES: The Larger Companies
- Acadian Seaplants Limited 118
- Diagnostic Chemicals Limited 124
- Efamol Research Inc. 130
- GN Plastics Company Limited 136
- Jacques Whitford and Associates 142
- Nautical Electronic Laboratories Limited (Nautel) 148
- Sarsfield Foods Limited 154

PART III: DISCUSSION AND ANALYSIS

OVERCOMING OBSTACLES -- MAKING THINGS WORK
- Introduction to the Discussion 159
- Why are these Companies Here? 161
  - Intangible Attractions 161
  - Location not Necessarily an Obstacle 162
  - Canada in the Global Environment 163
- The Primary Resources -- People 165
  - Key Leadership Traits 165
  - Desirable Employee Qualities 168
- Accessing Human Resources 171
  - Positive Characteristics of the Workforce 171
  - Negative Characteristics of the Workforce 173
  - Employee Participation and Incentives 175
- Accessing Technical Resources 177
  - Drawing on a Valuable Local Resource 177
  - Working with Institutional Issues 178
- Accessing Financial Resources 179
  - The Lack of Risk Capital 179
  - The Self-Financing Option 180
  - Getting the Most from Government 180

Going Outside the Region for Capital 182
Working with the Banks 184
Getting to Market 187
Identifying a Niche 187
Focusing on Core Strengths 187
Establishing an Export Base 188
Forging Linkages 189
Developing a Good Reputation 189
Building on Relationships 190
Overcoming Obstacles in the Environment 193
Dealing with Physical Obstacles 193
Dealing with Man-Made Obstacles 198

THE GOVERNMENT INFLUENCE -- A MIXED BLESSING
About this Section of the Report 203
The Large Government Presence 205
The Military Presence 205
Multiple Layers of Government 205
Benign in Intention, Debilitating in Effect 206
Effects on the Business Environment 209
The Financing Environment 209
The Tax Environment 211
Public Sector as Competition 213
Effects on Efficiency 217
The Bureaucratic Factor 217
The Border Issue 218
Structural and Regulatory Burdens 220
Government: Policy-Maker or Implementer? 221

MOVEMENT AND CHANGE: THREAT OR OPPORTUNITY?
Key Issues: Problems with Flexibility, Movement and Change 223
Many Spheres are Affected 224
What is a Good Business Environment, Anyway? 227
Quality of Life 227
Access to the Right People 227
Responsive Suppliers and Supporting Services 228
A Supportive Investment Environment 229
Positive Government Policies 230
A No-Nonsense Bureaucracy 231
Concluding Comment 232

APPENDICES
A: Size and Growth Rates of the Companies
B: Exporting Issues
C: Innovation Issues
D: People and Human Resource Issues
E: Financing Issues
F: Location and Supporting Infrastructure
G: Issues Related to the Role of Government

PART I:

OVERVIEW

REPORT HIGHLIGHTS

Report Highlights

The individual company profiles in the centre section of this report provide information on the experiences of the 20 firms participating in this project. These profiles are at the heart of the project.

The following are some of the key issues and conclusions addressed in the discussion and analysis sections of the report.

Background

- There is increasing pressure on public-sector finances in Canada, which provide a significant contribution to the economy of the Atlantic region. This pressure will affect the ability of the current system to deliver the services which we have come to expect in this part of the country.

- The region does not presently earn its own living from the products and services it exports, making it especially vulnerable to any reductions in financial transfers from the federal government.

- In order to maintain standards of living and public-sector services, new revenues and economic wealth have to be created within the region by providing valuable products and services to people outside it.

- Export companies -- and especially those which add value -- are the prime generators of new revenues and wealth.

- There is a surprising number of small innovative export companies in the region which are successfully creating new economic wealth. However, they are not well understood and are largely ignored in the public perception.

How Companies in this Project Make Things Work

- The vision, creativity and determination of the entrepreneurs and key staff in these companies are absolutely essential to success.

- The attitude, energy and skills of the people working in innovative export companies are their main asset. When these are available, such companies can flourish here despite a host of obstacles. In cases where firms are unable to locate this key resource, their health, growth and potential is adversely affected.

- Many of the employees available in the region exhibit very positive qualities, and the workforce is often stable, loyal and skilled. At the same time, there are some problematic characteristics of the workforce, and it can be hard for energetic companies to find people with the attitudes, experience and skills required to help build their businesses.

- There are many technical resources available in the region, if they can be accessed effectively. It can take considerable effort and persistence to activate these resources.

- Each of the companies reviewed focuses on a very specific market niche, which is the only way to succeed in highly competitive export markets, especially given the disadvantages associated with a small population base and a remote location.

- It takes energy and time to overcome obstacles related to the small population base, such as lack of the suppliers, supporting services and financial resources which are more readily available in populous areas.

- Isolation provokes companies to find world markets in which they can excel, and requires them to be very skillful in accessing all the necessary resources.

- Nothing happens without intelligent action by groups of smart, creative people who can bring all the necessary elements together.

Physical and Structural Obstacles

- Specific problems associated with physical isolation and the small population base in the region include issues such as inadequate or expensive transportation links, and a shortage of efficient and competitive support systems.

- However, obstacles associated with dependence on the various government-driven structures are often more intractable than the physical ones, and affect wealth-generating activities in many ways. Areas of concern include:

  - the multi-layered government infrastructure
  - bureaucracy and slow responses in many areas
  - the lack of private-sector financing options
  - disincentives inherent in the taxation structure
  - competition of various kinds from the public sector
  - some lack of relevance and responsiveness within the educational system.

- The investment culture regarding local companies is very under-developed. Without a dynamic private investment culture, companies must either:

  - grow slowly, using internally-generated resources;
  - rely on government financing, at considerable cost in time and efficiency; or
  - go outside the region for capital, which naturally tends to move key decision-making away.

- A number of other artificial burdens (such as regulations and bureaucracies which inhibit movement of goods, people and new ideas in the economy) are a further drain on scarce resources -- resources which could be better used in creating new value, new revenues, and new wealth.

- These observations raise questions about the best role for government in future.

Implications

- To create an environment in which new wealth can be generated in the economy, it is vital to educate, encourage and attract people with the right attitudes and skills.

- In order to compete effectively in world markets, it is also vital that regulatory, bureaucratic and tax burdens are minimized.

- Obstacles to creating a supportive environment often involve unhealthy patterns of relationship between various institutions in the region, and a lack of movement and flexibility within the system in response to changing conditions.

- The obstacles in the way of bringing key resources to bear need to be mitigated or removed, and clear incentives need to be put in place to encourage the formation of the most desirable kinds of firms and support structures.

- Innovative companies demonstrate the ability to adapt in response to shifting conditions. They therefore provide valuable lessons in how change can be successfully accomplished.

Action Items

Some of the possible areas for action are identified by a ▼ in the body of the report, as well as in the concluding section.

BACKGROUND

Introduction

Underlying Economic Challenges

Nova Scotia, and the Atlantic Canadian region as a whole, face enormous economic challenges. Perched at the edge of the North American continent, and with a population of a little over two million, the region does not have a large enough internal market to support a significant manufacturing base. And yet it also does not fully earn its living through the export of products and services generated here.

In order to support a North American standard of living, the region is dependent on a variety of sources of money from the Canadian federal government. Many of these are made under the well-established Canadian principle of providing roughly equal levels of service in the different regions, regardless of regional earning power. These include various kinds of transfer payments, which provide over 40% of the provincial budgets. In addition, the federal government spends money in the region on maintaining military bases, the large federal government infrastructure itself, support for unemployed individuals, and a host of subsidies in agriculture, transportation, industry, etc.

The region exports some of its best and brightest people. Many choose, or are forced, to leave for economic reasons. Private investment capital is also a big export item. Most of the investment dollars available in the region (including over $10 billion in public-sector pension funds) make their way to apparently safer havens in Toronto, New York, London, Tokyo or elsewhere. Very little of this locally owned resource is invested in the region. Is it possible to build a dynamic economy when people and money are among the biggest exports?

Those with capital, good professional jobs or healthy businesses can live a very pleasant life here. But the overriding economic themes are tied to the question of how to divide up a finite (or possibly shrinking) economic pie.

Impending Threats

Due to a number of political and macro-economic factors (increasing government debt, changes in the nation's military commitments, questions about the Canadian social contract regarding equalization payments, and political instabilities in Quebec, to name a few), the amount of federal money making its way into the region is increasingly under threat. The current pressure on federal, provincial and municipal budgets -- and the closure of military bases in the region -- are probably only a taste of things to come.

There is not much room to move on the provincial front. Nova Scotia has the highest debt service commitment of all provinces in Canada -- about 24% of all provincial revenues now go to debt service. As a percentage of revenues, this is over a third higher than New Brunswick, PEI, or Newfoundland, and three times higher than British Columbia. The increasing debt servicing costs will exceed education expenditures in Nova Scotia for the first time during 1993-94, and are expected to squeeze the funds available for program expenditure in virtually every single category over the coming years.

All in all, it's a pretty dismal picture. Are we doomed to witness a slow but steady decline in the region? Will the standard of living here deteriorate for all but the lucky few?

Taking Charge

To make a go of things economically against the backdrop of the restructuring that is taking place at the national and international levels, a host of things will need to change. First and foremost, new earnings need to be generated in the region. This means finding more ways to provide products and services regarded as valuable by people well beyond the region's borders. The exchange of goods and services within the region -- effectively "taking in each others' washing" -- is simply not enough, since fundamentally it only recycles what money is already here and does not generate new wealth.

Tourism, the ports and related transportation activities, and the universities and research establishments are all important revenue earners in that they bring in people and/or money. But

for many years, the region has depended to a large extent on two principal activities to earn "foreign" revenues:

- the export of resources (fish, lumber, pulp, agricultural and mineral products, etc., in a more or less processed state)

- the operation of branch manufacturing plants.

The export of resources will no doubt remain an important revenue generator and job provider for many years -- although commodity products do not generally yield high values in today's world. In addition, some of the natural resources (such as parts of the fishery) have been mismanaged.

Among the branch plants are included some of Nova Scotia's major private-sector employers. These are important contributors to the economy, but they are always subject to decisions made in some other part of the globe -- decisions based on a worldwide view of business strategy unrelated to the concerns of any particular region.

Each of these sources of revenue is vulnerable in changing times. The relative value of resources is likely to decline in real terms, and foreign-owned plants could easily decide to move if profitability declines.

Is it possible for the region to "take charge" of its own economic future, without being dependent on the priorities of governments in Ottawa or owners in the US or Europe?

This study points to ways in which some smaller firms here have indeed taken charge of their destinies, generating new revenues for both themselves and the region -- often in unique and creative ways.

The Role of Innovative Exporters

It is a premise of this study that the health of innovative export companies is vital to the economic future of the region. Firms like these are among the few bright spots on an increasingly bleak and threatening economic horizon. They lay a burden on no-one, and they create benefits on many fronts.

- First, *they bring in real money.* These companies are all working in very competitive environments, in which smart solutions and good service are the keys to success. In one or more important ways, they are delivering value in the eyes of their customers and clients. They truly earn the income that they generate. It is not dependent on government largesse.

- Second, these companies *have taken the view that they can be players in the world at large.* As such, they have found a way forward; they do not see themselves as victims of circumstances thrust upon them. They are flexible in their response to events and are good at finding gaps and niches.

- Third, by virtue of succeeding in foreign markets *they become standard-bearers for quality products and services coming out of the region.* They help to put us on the map.

- Fourth, *they not only pay their own way; they also provide spin-off jobs* for others in the community whose services they utilize in their own daily lives. They thereby help support the internal economy at home.

Incidentally, these companies rarely compete with each other. They apply their specific skills and expertise to serve very distinct market niches, and there may sometimes be opportunities for collaboration between them.

Despite their importance, for the most part, companies like these are largely ignored in the region. At times they are showcased by ACOA, in the newspapers or on TV, but there is no broad level of support or interest in what they are doing. They are either not well known, or are even sometimes viewed with suspicion.

But these companies are *net contributors to the local economy* from every point of view. Could a government agency do what they are doing better? No. Do they take away jobs that would otherwise be there? No, they create their own. Do they drain resources from more worthwhile activities? No, they contribute value. Absolutely nothing is lost at the regional level by the success of these companies; everything is gained.

It could be argued that if there were hundreds, or thousands, more of such companies, the economic problems of the region

would pale behind the light of their collective success. Their activities would produce a real foundation for tax revenue at all levels, which in turn contribute towards funding better education, better health care, better roads, and better cultural amenities. They help to create a more stable economy, which is less dependent on the vicissitudes of government finances.

A Uniquely Regional Issue

Within a national economy, it may be possible to provide most of the products and services used by the entire population. In a large economy like that of our neighbor the United States, the diversity of people and talent -- and the depth of infrastructure, capital and resources -- is such that the question of self-sufficiency is not ever an issue.

But in the small regional economy of Atlantic Canada, it is really not an option to produce most of what is consumed here. Not, that is, unless the way of life were to change drastically, reverting back to that of a simpler age when local foodstuffs were brought to local markets, local building materials were used in local dwellings, and local horses were used to haul local logs.

Assuming that the option of backtracking on the material front is not desirable, it is essential for the region to be producing tradable goods and services which have high value to people in other parts of the world. As the fiscal squeeze gets tighter, and Ottawa's ability to deliver support declines, there will come a growing realization that there is simply no other way to support the level of public services we have come to expect. It is up to those who live here to figure out how to carve out a niche in the world at large.

It is difficult to see how services can possibly be maintained at current levels -- let alone be improved -- unless we find ways to generate the means to pay for them ourselves. We have to create new wealth -- new wealth in the sense of new earnings, new capability, and new value within the society.

Creating the Right Ground

Put simply, the alternative to creating new wealth is a decline in living standards. If we do not provide a good environment in which innovative businesses can prosper, new ones will not be formed, young ones will be unable to grow, and established ones will leave. We will then be left to deal with the consequences of less wealth generation, fewer jobs being created, and further declines in services and amenities.

There are many elements required to create the right ground on which innovative companies can flourish. Some of these include:

- access to a skilled, creative and stable workforce
- responsive suppliers and service-providers
- flexible technical resources
- a dynamic and supportive business financing system

A competitive tax regime is also an important factor. Governments everywhere are discovering that unusually high taxation rates make for unattractive (and therefore uncompetitive) places to live and work. The example of the 11% sales tax introduced last September on business services in Nova Scotia is a case in point. Engineering, accounting and other service firms reported that this uncompetitive tax was sending business out of the province; the government's decision in the April budget to rescind the tax is an indication of the vital importance of creating a competitive tax environment.

Just as individual consumers will cease to patronize an uncompetitive retail store, so businesses will eventually reject an unsupportive working environment. Companies are mobile, and in an increasingly open global economy, they will *have to* find the best place in which to operate, as a matter of survival.

Atlantic Canada is facing a radically new situation. This calls for a fundamental review of how the various institutions in the region work together, what explicit and implicit disincentives are now in place with respect to the development of innovative firms, and what needs to be changed to enable the creation of new wealth to take place.

Innovative Companies Create New Wealth

In order to find a viable alternative, some questions need to be asked:

- How is this kind of new wealth created? And more specifically, how can new wealth be created in a region such as Atlantic Canada, with its own particular set of geographical, cultural and historical characteristics?

- In a regional economy which clearly cannot be all things to all people, what are the activities most suited to ensuring a sustainable, long-term standard of living coupled with a desirable lifestyle and culture?

Wealth is created primarily at the level of the individual business enterprise. The focus of business activity is to deliver value which is meaningful to other people. Through properly managed combinations of human, physical and financial resources, businesses provide new value where none existed before. Hence, dynamic, well-run, innovative businesses are part of a virtuous "value chain", each link of which adds a little piece of value in a continuous process of wealth creation.

Business entities are a particularly potent form of wealth creation because they specifically exist to provide service to their customers. In some sense, all businesses provide *nothing but service;* even a manufacturer of machinery really only provides solutions to its customers' needs. Few other entities in our culture provide so much leverage in the creation of new wealth. Ensuring a healthy and supportive environment for individual business entities is therefore beneficial to the entire society within which they exist.

The outstanding thing about companies like those profiled in this study is that they *are* generating new wealth. These companies may be small, and their overall contribution may not yet be significant, but the small size of their current impact is deceptive.

The 20 companies in this project -- together with scores of others doing similar things here -- are evidence of the fact that change can be welcomed and that challenges can be met. These examples also provide indications of some of the ways in which new wealth can be generated in Nova Scotia, and the Atlantic region as a whole.

Objectives

What this Project is About

Economic stories in the region are not all full of doom and gloom. In this project we have identified some of the energetic companies based here who are successfully generating revenues from outside the region through the application of their skills and ingenuity in a business context.

The idea behind the project was to look in some depth at a group of innovative export companies, with a view to identifying key success factors as well as commonly experienced obstacles and challenges. The purpose of this is to gain insights that might enable other companies to grow with the kinds of "creative breadwinner" characteristics exhibited by these firms, and to begin to identify strategies for success in overcoming obstacles.

The criteria used in selecting companies which were invited to participate in the research project were that:

- A substantial portion of their revenues comes from outside the Atlantic region.
- Their business incorporates one or more innovative components. These may be in their product or technical expertise; it may also be in the way they have approached their markets or managed their people.
- There is substantial local input through ownership and/or management. It is important that they are not just a branch plant operation.

The 20 companies selected range in size from under 10 employees to over 300. They are between 5 and 25 years old, and they represent the following sectors:

- Resource-based manufacturing
- High and medium-tech manufacturing
- Gift products manufacturing
- Software products and services
- Consulting and information services
- Commercial research and development
- Export trading services
- Media production

Uses of the Project Information

When this project was initiated in late 1993, considerable enthusiasm was expressed for it by members of the Halifax Board of Trade and the Dartmouth Chamber of Commerce. At the same time, some skepticism was expressed about the value of another study. "Haven't things been studied to death already?" was a question asked by some. The hope is that this project will lead to more than just another report which gathers dust on somebody's shelf.

The results of the project could potentially be used in a variety of contexts, for example:

- In follow-up forums with the companies themselves, to identify and explore implementable activities which would assist in their further development.

- In follow-up workshops involving firms in the project and other companies in related sectors who are in the process of developing their export business, perhaps in a "mentoring" relationship.

- By private-sector groups such as Boards of Trade and Chambers of Commerce in the development of business networks.

- In some kind of publishable format.

- By government agencies in designing and implementing more relevant economic development activities.

The nature and form of appropriate follow-up activities are yet to be determined.

Methodology

How the Study was Conducted

The companies were selected using a broad range of information sources, including business and trade associations, government data, public media, professional support firms, and by simply "asking around."

A list was compiled of over 100 companies that broadly met the criteria. The issue was not whether such companies exist, but which ones to include in the project. Selections were made to include firms from a variety of sectors, sizes and stages of development, with a view to creating a mix that would be most instructive overall. (For this reason, some seemingly obvious large companies were not included.)

Some of the firms in the project are well established and profitable, while others are in the early stages of development; still others are going through a process of revitalization.

Two companies that were asked to participate declined to do so due to management time constraints; one declined for competitive reasons. One or two important examples could not be included due to the busy travel schedules of their senior people.

On-site interviews were conducted with each of the participating companies during February and March, 1994. These usually involved the founder or CEO in addition to one or more staff people. The interviews were designed to:

- Find out how the companies developed
- Profile the success factors
- Catalog the constraints they experience
- Examine their "people characteristics"
- Identify where the innovation originates
- Explore the growth opportunities
- Understand the obstacles they foresee
- Find out how they finance growth

Information gathered in the interviews was transcribed into note form, often amounting to 15-20 pages per company. From this, the most significant threads were extracted and incorporated into individual company profiles. Each of the profiles includes sections describing:

- What the company does
- How it developed
- Key success factors
- Some of the challenges and obstacles faced
- A brief look towards the future

Some amendments to the profiles were made following review of a draft by the individual companies. In all cases, the aim has been to arrive at an accurate, succinct and relevant picture.

The discussion and analysis section of the report was prepared following extensive meetings among all members of the study team to review the company material. Despite the varied nature of the companies, a number of common themes emerged. These are discussed in the context of comments made by individual participants.

This is not an academic study. The material is presented in an informal style, in an attempt to capture the flavor of the individual companies in addition to the actual information about their activities.

The Project Team

This project has been conducted by DRM Advisory Group, a Halifax-based consulting group. The study team was assembled specifically for the project. Members of the team include:

- **Michael Scott – Project Leader**, who has considerable direct management and investment experience in the development of young, technology-based businesses in both Canada and the US, including several innovative Nova Scotia-based export companies.

- **Valerie Baker – Principal Researcher**, a marketing and training consultant with extensive experience in business analysis, planning and development in both Nova Scotia

and the US, including work assisting the city of Chicago in encouraging firms to relocate there.

- **Maryanne McLorie – Research Associate,** a researcher for government and private industry in the field of small business development, who has worked in the evaluation of a number of entrepreneurship programs, as well as on *The Leading Edge* TV series which highlights entrepreneurial successes in the Atlantic region.

- **Julia Sagebien – Special Advisor,** a marketing professor at Saint Mary's University with hands-on experience working for companies such as Lotus Corporation and Fidelity Investments in Boston, who has just completed a PhD thesis at the London School of Economics entitled *Competitive Strategy and Economic Development: A Regional Case Study -- Atlantic Canada.*

- **Phillip Rosson – Special Advisor,** a professor at the Dalhousie School of Management Studies and the Centre for International Business Studies, who co-authored a 1990 case history study entitled *The Export Edge,* which profiles the success factors and challenges identified by Canada Export Award winners.

- **Debra Ross-Webster – Survey Advisor,** a management and communications consultant with over ten years' experience in managing qualitative and quantitative market research studies in a wide variety of industries in Canada, the US and Australia.

- **Barry Campbell Boyce, of Victory Communication** in Halifax, who provided an important contribution to the writing process during the latter stages of the project. A professional business writer and editor for 15 years, Mr. Boyce has written many detailed economic and financial reports in both Canada and the US.

- The study team would also like to extend appreciation to **David Spriet,** an MBA student at Saint Mary's University, who assisted with data collection and analysis of the results as part of his Masters Research Project.

Sponsorship

The project has been sponsored by Industry Canada, with endorsements by the Halifax Board of Trade, the Dartmouth Chamber of Commerce and the Nova Scotia Chamber of Commerce. Additional support was provided by DRM Equities Limited of Halifax.

The project team wishes to extend special appreciation to Charlotte Murray of Industry Canada for her energetic support of the project since inception; and to Rob Dexter of the Halifax Board of Trade, who was instrumental in leading the Board of Trade's interest in this work.

In addition, appreciation is extended to John Dick of the Economic Development Committee of the Halifax Board of Trade, whose enthusiasm and encouragement helped initiate the project; to Nancy Conrad and Valerie Payn at the Halifax Board of Trade, for their ongoing assistance and support; to Terry Norman, who met with the team on behalf of the Board of Trade during the review process; to Miles Sweeney of the Dartmouth Chamber of Commerce, for his interest and support; and to Bob Taylor of the Nova Scotia Chamber of Commerce for his endorsement of the project.

OVERVIEW OF THE COMPANIES

Some Surprising Innovators

The companies in this project are by nature outward looking and dynamic. Many of them have the potential to grow substantially if they can bring the right factors to bear on their development. Most of these firms derive 90-100% of their revenues from exports. Many of them are growing at rates of 15-50% per annum and are a source of sustainable new employment.

- How do they do this? *They continually create and deliver new value in the eyes of their customers.* Many of them do so through a process of deliberate and repeated acts of innovation -- whether in the way they make products, the way they deliver service, or through the creative solutions they provide to their customers. (The word *innovation* is derived from the Latin *innovare,* meaning to renew or alter; to make new; to change; to bring in new methods.)

The stories behind these companies are really stories of the vision and energy of a group of entrepreneurs with very varied backgrounds. But these are not just stories about business owners making a success of things for themselves. They also involve the relationships with people which the founders have built along the way.

These companies are not in the business of job creation; they are in the business of discovering ways in which to realize the potential in situations through the effective contributions of their people. They do not build bureaucracies; rather, these companies encourage thinking aimed at breaking the rules they find all around them.

By making their way through a host of obstacles and challenges -- physical isolation from markets, shortages of human and financial capital, distance from suppliers, government red tape -- they are finding ways to provide products and services that are highly valued by people all around the globe.

In doing so, they are bringing new revenues into the region, creating dynamic employment opportunities, and drawing together fresh ideas and possibilities for further growth.

Needless to say, none of the companies in this project is a "perfect" firm. Many of them face considerable difficulties and their futures are not necessarily secure. But they have all done something unique and powerful, whether in a small way or a large way. Each company is a gem in its own right. There may be unpolished facets, but all these firms shine because they have forward momentum.

The Companies and their Challenges

- The small group of companies in this project are generating more than $100 million in new revenues for the region every year.

- They have an average age of under 12 years.

- They directly employ almost 1,000 people generating new wealth coming into the region. With the multiplier factor related to other employment they help support, this probably translates into the creation of almost 2,000 sustainable jobs.

Without exception, the people running these companies have a tremendous amount of energy, drive and enthusiasm for what they are doing. They are eager to find solutions to problems and get on with the job.

They often face substantial obstacles and challenges in their businesses. Some of these are inherent to the competitive environment in which they are doing business. Some are connected with the region's isolation from major markets, the lack of supporting infrastructure due to the small population base, etc.

Other obstacles are derived from factors such as:

- Difficulty finding people with the right attitude and skills
- Tax and regulatory disincentives
- Problems getting quality support from local suppliers
- Difficulty in obtaining expansion financing
- Lack of flexibility in academic institutions
- Restrictive customs rules
- Government bureaucracy
- Problematic transportation links

The particular blend of problem areas in the region presents unique hurdles for innovative companies. Many of these negative factors could be changed if they were properly understood and if the will to do so became firmly established.

The Types of Companies Profiled

The 20 companies in the project may be categorized as follows:

Manufacturers of products based on local raw materials:	2
Manufacturers whose main raw materials are not local:	9
Software developers:	2
Providers of other services:	7
Firms in Halifax-Metro area:	11
Firms in other locations:	9
Firms with less than 15 employees:	7
Firms with 15-50 employees:	6
Firms with over 50 employees:	7
Firms whose founders grew up in the region:	9
Firms whose founders grew up elsewhere:	11

Further aggregated data on the companies is contained in the appendices.

The Companies at a Glance

Company	Product or Service	Manufactured Products	Services & Software	Under 15 Employees	15-50 Employees	Over 50 Employees	Halifax Metro Location
Acadian Seaplants	Seaweed-based Products	●				●	●
Atlantech Extrusion	Vinyl Windows	●		●			
Canadian Fishery Consultants	Fisheries & Port Services		●	●			●
CanJamTrading	Specialized Food Products		●	●			●
Diagnostic Chemicals	Chemical & Biological Products	●				●	
Efamol Research	R&D - Pharmaceuticals Industry		●			●	
Fenwick Laboratories	Environmental Testing Services		●		●		●
Focal Technologies	Rotary Joints & Slip Rings	●			●		●
GN Plastics	Thermoforming Machinery	●				●	
Jacques Whitford	Engineering Services		●			●	●
Metals Economics Group	Information and Consulting Services		●		●		●
Nautel	Radio Transmitters	●				●	
Orion Electronics	Electronic Tracking Equipment	●		●			
Precision Biologicals	Medical Laboratory Products	●		●			●
Prograph International	Visual Language Software Products		●		●		●
Salter Street Films	Film and TV Productions		●		●		●
Sarsfield Foods	Frozen Fruit Pies	●				●	
Spots Pots	Decorative Giftware Products	●		●			●
Tri-Star Industries	Custom Ambulances	●			●		
Worthington Software	Fax-Data Software & Service		●	●			●

Brief Descriptions of the Companies

A brief overview of the activities of the 20 companies in the project is provided on the following pages.

- This is intended to "orient" the reader to these companies.
- **Readers are strongly urged to review the individual company profiles in Part II of this report, which highlight the particular success factors and challenges associated with each company.**

Both the following section and the company profiles themselves are divided for convenience into three groups:

A. The Smaller Companies (under 15 employees)

B. The 'Mid-Size' Companies (15-50 employees)

C. The Larger Companies (over 50 employees)

Within each group, the companies are arranged alphabetically. Each group includes companies in both the manufacturing and service sectors.

A. The Smaller Companies

Following are brief summaries of the activities of the smaller companies included in the project -- those with less than 15 employees.

Atlantech Extrusion Inc.

Atlantech Extrusion Inc., located in an industrial mall in Sydney Mines, Cape Breton, manufactures high-quality vinyl windows using technology licensed from one of the top three German companies specializing in this field. The vinyl extrusion process used by Atlantech produces a much higher quality product than is available using other technologies, including aluminum. The company's focus is on "tilt turn" windows, a type of window which is very popular in Europe, but which is new to many North American builders. Most of the company's production is exported to Montreal and British Columbia. Atlantech currently employs eight people full-time and another eight part-time, and the company anticipates substantial growth if it can persuade North American customers of the benefits of its high-quality products.

Canadian Fishery Consultants Limited

Canadian Fishery Consultants Limited (CFCL) is an eight-person consultancy based in Halifax which provides expertise and advice in the fishing and aquaculture industries in over 60 countries around the world. The company's activities include work on financial and technical feasibility studies; the design, evaluation and retrofitting of fish processing plants; resources analysis; site selection; and the design of fish culturing facilities. Some 60% of CFCL's business is in the Caribbean, and the company frequently conducts projects in South-East Asia, the South Pacific, the Philippines, China, India, Pakistan, South America, South Africa, the UK and other EC countries, and the United States. CFCL sees a host of opportunities in front of it, some of which promise to bring work to other Nova Scotia enterprises.

CanJam Trading Ltd.

CanJam Trading Ltd. is a five-year old company based in Dartmouth which specializes in buying under-utilized sources of protein, primarily for Jamaica. Under the energetic leadership of its founder, Grace White, CanJam has grown from its initial 1989 contract to deliver mackerel to a buyer in Jamaica into a $7 million business which trades in such products as chicken backs and leg quarters, turkey necks, beef offal, ewe mutton carcasses, pork feet and pickled pork tails, pickled and frozen mackerel, frozen herring, frozen and dried squid, and salt pollock. Grace White, who was winner of the 1993 Canadian Women's Entrepreneur of the Year Award, anticipates significant growth and is planning expansions into other markets in which her proven ability to address customer needs is valued.

Orion Electronics Limited

Based in an industrial mall near Windsor, Orion Electronics Limited provides a wide array of compatible direction-finding devices used in tracking things that move. The company serves a number of markets, with a focus on buoys used to track oil slicks and vehicle tracking equipment used by law enforcement agencies. The company also produces devices used in tracking ocean currents, ice flows, boats, people and animals. Orion went through a period of steady growth during the oil boom years but retrenched to a 2-3 person operation in the late 1980s. The company is now in a period of strong re-building in response to inquiries coming from a host of potential new customers. Employment has grown to about 12 people over the past 2-3 years and revenues are expected to quadruple in the next year or so.

Precision Biologicals Inc.

Precision Biologicals Inc., located in the Burnside Industrial Park, has developed a unique line of fresh-frozen plasma controls used in coagulation tests conducted in hospital laboratories and clinics across North America. The products are sold by telemarketing from Dartmouth, and shipments are made in insulated containers by overnight courier. After unsuccessful attempts in the mid-1980s to market "me-too" equivalents of products available from several major multinational companies, in 1991 Precision initiated

an intensive "customer listening" campaign, and identified key customer requirements for a new product line in collaboration with a pilot group consisting of a dozen top-flight hospitals across Canada. Sales of the resulting products are growing at rates of over 20% per quarter and now account for 75% of the company's revenues.

(It should be mentioned for the record that an affiliate of DRM Advisory Group has a minority interest in this company.)

Spots Pots Inc.

Since 1988, Spots Pots Inc. has been making a line of gift products based on the principle of hand painting an array of bright, attractive designs onto otherwise ordinary clay pots. The company was started by two students from the Nova Scotia College of Art and Design. It now employs seven people in its Burnside manufacturing facility, and exports 90% of its products out of Nova Scotia, about half of which go to the United States. Sue Klabunde and Sharon Davis, the founding partners, were new to business when they began the company, and have learned all the basics along the way. Spots Pots sales have been growing rapidly and will soon be approaching $1 million per annum. The company is currently working on expanding the line into tableware, vases, decorations and a range of other giftware products.

Worthington Software Company

Worthington Software Company has designed and developed a proprietary software system by which users with a simple fax machine can make inquiries to sophisticated corporate databases which can otherwise only be accessed through on-line terminals. An end user fills in boxes on a form and faxes this to Worthington's *I-Fax* system, which is housed on computer installations in Halifax, London (England) and locations in the US. Almost all of the company's business comes from export markets, 60% from the UK and most of the rest from the US. The company now employs some 15 people in various locations. Since 1989, the company has grown from a standing start to annual sales approaching $5 million.

B. The 'Mid-Size' Companies

Following are brief summaries of the activities of the 'mid-size' companies included in the project -- those with between 15 and 50 employees.

Fenwick Laboratories Limited

Fenwick Laboratories Limited employs some 40 people in its laboratories and offices on the second floor of a medical building in the south end of Halifax, from which it provides a wide range of environmental testing services to clients both inside and outside Atlantic Canada. Almost 30% of its revenues now come from outside the region. Fenwick was formed in 1990 through the merger of two local companies providing different kinds of testing services. The four-year old company has been growing at about 20% per annum since inception, and currently generates revenues in the order of $3 million per annum. Through a strategic relationship with an Ontario-based group, Fenwick anticipates playing a key role in the development of a North American environmental laboratory network, to which it will contribute its systems, techniques and know-how, in addition to being the main training and new product development centre for the group.

Focal Technologies Inc.

Focal Technologies Inc. was established in 1983 to develop applications for fibre optic and electro-optic technologies in marine and other severe environments. Focal, which currently employs about 30 people at its Burnside facility, incorporates leading-edge fibre-optic technology in its rotary joints, and is now the world's leading producer of marine "slip rings." Since 1988, the company's sales have grown to about $3 million per annum. More than 95% of Focal's sales are made outside the Atlantic region, with the majority of products going to EC countries, the US and Asia. The company anticipates continued growth through its commitment to quality and responsiveness to customer needs.

Metals Economics Group

Metals Economics Group is one of the world's leading providers of information services to the international nonferrous metals mining industry, with a focus on the exploration and development end of the business. The company gathers key corporate and economic information from a wide variety of primary and secondary sources, which it incorporates in strategic studies and other products -- including an on-line interactive database -- for use by clients during their internal acquisitions and development planning. MEG employs some 18 people, including 13 writers, researchers and analysts working in a "think tank" atmosphere in pleasant offices in the Canada Trust building in Halifax. MEG has no local business. About two-thirds of the company's sales are made to North American clients, with the balance coming from all around the world.

Prograph International

Prograph International has developed an award-winning group of commercial software products which enable programmers to write software applications without the use of textual code. Initially developed for use on Macintosh computers, the Prograph products are widely acknowledged as industry leaders in the field of visual programming, and have twice won the *MacUser* magazine *Eddy Award* in recognition of innovation and program excellence. Enthusiastic Prograph user groups around the US now publish their own newsletters on the company's products, and Prograph's development partners include Apple Computer and Hitachi. Prograph currently employs some 40 people, including a research and development group located near the Maritime Life building in Halifax as well as a sales and marketing group based in the San Francisco Bay Area of California. Sales have been more than doubling in each of the last three years.

Salter Street Films

Salter Street Films is unique in the Canadian film and television scene, having been producing films and television shows in Halifax since 1981. The company is the producer and developer of the highly acclaimed CBC series *Codco*, as well as the more recent political satire *This Hour has 22 Minutes*, which is aired nationally on CBC. The company has also produced a number of

award-winning films, including *George's Island* and *Buried on Sunday*. Salter Street's productions are sold into English-language markets around the world. The continuing health of the company is based on nurturing a pool of local talent to produce its successes. Salter Street is currently engaged in developing a cable television movie listing channel, to be launched and run from New York, with Toronto-based financing and management direction provided from Halifax. A European film distribution company is also in the works.

Tri-Star Industries Limited

Located in Yarmouth, Nova Scotia, Tri-Star Industries Limited employs some 45 people manufacturing custom ambulances for sale in over 25 countries. Tri-Star takes basic vehicle configurations, which it customizes, rebuilds and adapts to suit specific end-user needs, and has thereby carved out a niche for itself which is largely unchallenged by the major manufacturers. With its relatively remote location, Tri-Star has had to cultivate and develop many of its local suppliers, which has paid off when the relationship works well. In some instances, when local suppliers have been unavailable, the company has initiated in-house divisions to provide the necessary services. In the past few years, Tri-Star has focused almost exclusively on the export side of its business, and works with a network of international distributors working under the Tri-Star name. The company regularly generates sales in the $5 million per annum range.

C. The Larger Companies

Following are brief summaries of the activities of the larger companies included in the project -- those with over 50 employees.

Acadian Seaplants Limited

Acadian Seaplants Limited is the largest independent manufacturer of seaweed products in North America. The company produces a range of products manufactured from various kinds of natural and cultivated seaweeds grown in the Maritimes for use as additives in the food industry, in fertilizer production, in animal feeds and in the brewing process. The company is headquartered in the Burnside Industrial Park in Dartmouth and operates four processing plants in Nova Scotia and PEI. Over the past 12 years, Acadian's core staff has grown from about 10 to 50, with production employment reaching 100 people at peak times; in addition, the company provides part-time employment to over 1,000 independent seaweed harvesters. More than 95% of Acadian's production is now exported out of the region.

Diagnostic Chemicals Limited

Diagnostic Chemicals Limited (DCL), the only company in the project based outside Nova Scotia, is located near Charlottetown, PEI. The company produces specialty organic chemicals for use in the medical diagnostics field, as well as synthesized chemicals used in the production of pharmaceuticals, adhesives, advanced electronics and synthetic rubbers, and pure proteins extracted from animal tissues for use in analytical tests and research. With a PEI-based staff of 65 and a 20-person US office in Connecticut, the company is the largest Canadian manufacturer of diagnostics products. The company's sales have quadrupled over the past five years, and are currently approaching $10 million per annum, 75% of which are made in the US. DCL was a 1992 winner of the Canada Awards for Business Excellence and ranks among the Financial Post's "100 best companies to work for in Canada."

PART II:

COMPANY PROFILES

The Smaller Companies

Following are profiles of the smaller companies included in the project -- those with less than 15 employees.

Atlantech Extrusion Inc.

Canadian Fishery Consultants Limited

CanJam Trading Ltd.

Orion Electronics Limited

Precision Biologicals Inc.

Spots Pots Inc.

Worthington Software Company

Atlantech Extrusion Inc.

Atlantech Extrusion Inc.

Atlantech Extrusion Inc., located in Sydney Mines, Cape Breton, provides high-quality extrusions for vinyl windows and doors. The technology is unique in this market and was brought to the company through a strategic alliance with a German manufacturer, Brugmann. The company focuses on 'tilt-turn' windows, a type of window readily found in European markets, but new to many North American builders. Atlantech exports most of its product to Montreal and British Columbia; recently, some new product lines have been marketed in Europe and the Far East.

The company was spun off from a Montreal-based parent in 1988. Sydney Mines was chosen for the new company headquarters for many reasons, including government sponsored financial incentives, quality of the electric power supply and a shorter shipping distance to Germany.

Atlantech's vinyl extrusion process produces a product of much higher quality than other technologies, including aluminum. Unfortunately, vinyl is not a material of choice in some North American markets because of misperceptions about the quality of the product and lack of building code specifications for vinyl products. Without these specifications, builders in some markets can not build to code when using Atlantech's windows, even though Atlantech's products outperform the code regulations. These market conditions have presented sales challenges for the company.

"The Regional Hospital building, for example, was specified for all aluminum windows with absolutely no vinyl allowed -- the old standard. We approached the hospital and said that we would fund the research for the testing, which cost us $10,000. We knew our product would surpass their standards and in the end, we did win the contract. We continually have to fight the old perception toward vinyl. Ignorance about the material contributes to misinformation about our windows."

The company is located in the Northside Industrial Park. The building and offices are well-designed and pleasant. The main offices are set off from the plant, board room, and a coffee area. An attractive entrance area displays samples of various Atlantech windows.

How the Company Developed

In the mid-1970s, two brothers started what became the parent company to Atlantech. That original business started by making high quality pine furnishings. From there, the company moved into making fine wood casements for windows. In the early eighties, the company moved into vinyl window production. Vinyl window products in Europe had moved to control about 50% of the total market, leaving traditional aluminum windows with less than 10% of the market.

As the company moved into the vinyl window market, they solicited the expertise of a German company, Brugmann. Brugmann, was, and remains, one of the top three German companies producing high-quality vinyl window components. Brugmann leads the industry in window extrusion technology and was the first to develop many accessory window products.

The two companies were similar in their beginnings: a family run business, owned and operated by two brothers, quality products. These similar world views made it easier to enter into an alliance. Brugmann signed an agreement allowing the Montreal firm the licensing rights for Brugmann products and the accompanying technology. In exchange, Brugmann receives royalties on sales.

Atlantech was set up as a separate company in 1988 in order to focus on the vinyl extrusion technology and the production of vinyl window casements. The company had the option of remaining in Montreal or seeking a new location. Atlantech started looking for a new location, in part because government incentives offered in Quebec were substantially lower than elsewhere, and in part because of problems with the location of the province and some infrastructure.

Important concerns in the relocation were (a) the best assistance package available from government; (b) a location close to Germany for shipping reasons; and (c) a location with a stable, reliable, surge-free power supply. Sydney Mines offered the best choice with regard to these factors.

Transportation of goods into Atlantech from Germany was much better at the Cape Breton location. Atlantech is able to receive goods from Brugmann only one day after they arrive in Canada; transportation to and from Germany is only six days. While the speed of transport is very good, unfortunately transferring each container from Halifax to Sydney adds another $800 to the shipping fee.

Government assistance in Cape Breton was essentially double that of the Province of Quebec; the overall package, including tax credits, was much more advantageous and helpful to Atlantech in starting its new company. Finally, the power supply, which had been a problem in Quebec, was much more reliable -- essential to obtaining efficient, quality production from the extrusion machinery.

As a result of the deal with Brugmann, Atlantech received all the tools required for the manufacturing process. Brugmann made recommendations on how to set up operations in the most efficient manner and provided training at the Brugmann plant in Germany for four key Atlantech employees. Brugmann is also available for technical advice and support free of charge.

Atlantech has done an excellent job of streamlining its operations and improving efficiency. Key advice from Brugmann has helped cut costs and also enabled the company to survive a market downturn during the recent recession.

Atlantech's high-end product is a difficult sell in the cost conscious residential market. "People still want the cheapest price they can get -- even if they will have to pay it again in five years when the lesser product fails. We cannot offer the cheapest price at this point. However, the market seems to be moving in favor of quality products." The company has been successful in staying in compliance with standards in over 15 countries, which will facilitate sales in those areas.

Atlantech plans to continue its development of new products and to expanding marketing efforts, especially in selected European markets (due to their relationship with Brugmann, Atlantech will stay out of certain markets) and the US.

Key Success Factors

While Atlantech is still in early stages of growth, it has made notable progress in the

last year, increasing sales by over 20%. As a manufacturing company relocating to the region, Atlantech offers a unique perspective to this project.

- ***Superior technology in a growing segment of the building materials market.*** The alliance and licensing agreement with Brugmann clearly has been a critical factor in Atlantech's growth. Identifying vinyl casements as a fast-growth market, deciding to look for the expert in a technology , and entering into a licensing agreement which provided technology and on-going support, were all strategic choices for Atlantech. Choosing to develop the technology in-house would have been very costly and might have caused the company to miss the window of opportunity to enter the vinyl casement market.

- ***Willingness to improve upon the existing technology and new product development.*** "Each year we try to develop something new in the industry. Right now, we are developing accessories and trying to find ways to overcome customer misconceptions about vinyl. We have improved upon some of the techniques that we originally got from Brugmann. The laminating process, for example, used to take two workers 10 hours for set-up. Our process now takes one worker two hours. This innovation in the production was developed by one of the youngest and least formally educated workers. We give our employees total freedom to change systems if they can improve productivity or quality."

- ***Government financial assistance.*** The company received assistance in the form of capital investment and R&D and other tax credits. When a bank credit line was suddenly revoked, the province assisted the company with emergency funding, without which the future of the company would have been uncertain. "Government funding helped us tremendously and we are grateful for it. However, it did have a price."

- ***The ability to find technical talent*** has been very useful. Atlantech participates in a co-op program with UCCB which brings students into the company for a work term. These co-op placements have given the company the advantage of working with a variety of people and providing an opportunity to evaluate their potential.

- ***Decisions made on sound business principles.*** Michael Maroun, CEO, feels it was a critically important decision "not to take full advantage of the amount of money offered to us by the Federal government. We had decided that the market had slowed to a virtual stop and that we should hold at the current level of production and staffing in order to see how our products would do before we extended ourselves to what we thought was our full potential."

Obstacles and Challenges

Atlantech has experienced a number of obstacles to doing business in the region. Many have related to banking and government. Michael Maroun, CEO says, "Aside from our superior technology, our ability to overcome obstacles of all types has been the key factor in our success."

- ***Government agencies and financing.*** "I have had many good experiences with government and government officials. However, there have been some problems which have cost the

company substantial sums of money and at least one situation where, if we had given in to pressure from the government officials, we would have gone bankrupt." Michael is referring to a situation in which expanding based on accepting the amount of loan money offered by the government would have been an unsound business decision. The officials involved were naturally interested in increasing job creation, but Atlantech felt strongly they needed to maintain a more modest pace of growth in keeping with the market.

- *Government's ability to work with business and understand business issues.* "Few government officials have worked in the private sector. Another big problem is that the government does not have specialists to evaluate proposals. One day an officer might be looking at a tourism grant and the next he might be assessing a manufacturing plant." Michael Maroun feels that many government incentive programs put more emphasis on large-scale, dramatic proposals than on more modest but better-researched, market-sensitive ventures.

- *Banking relationships and access to adequate lines of credit.* "At the beginning, the banks wanted our parent company to secure everything, even though we were a stand-alone, separate company. For 15 years, our parent company has had a good relationship with the bank, yet when the company had a bad experience -- one of the first in 15 years -- the bank decided to pull its money out." Michael Maroun regards this as an abrupt about-face on the bank's part. "The Nova Scotia government stepped in and gave us some much-needed funding. If they hadn't done so, the bank's action could have driven us out of business."

Atlantech has also found customer service at their bank to be inadequate, condescending and paternalistic. When the bank made a mistake causing a foul-up in the company's pay cheques, they initially blamed Atlantech, and then never so much as apologized when the error was brought to light.

- *Duty charged on raw materials received from Brugmann.* "We must pay a 10% duty on all our raw products and materials. If we were sourcing from the US, we would not have to pay any duty. However, we can not source from the US and maintain the quality standards that Brugmann offers. It is a hefty price to pay and we have actually considered sourcing from the states to lower costs at the expense of quality."

- *Transportation by land presents difficulties.* "Trucks work on full loads. Often we have small shipments and for this service, we pay a premium. These extra transportation charges drive up the price of the shipment. There is an extra cost when we ship small loads in that the shipments are consolidated by the trucking company. In that process, the goods are often damaged." Atlantech would like to see the transport companies come up with more accommodating arrangements for small loads.

Looking to the Future

Atlantech's challenge is to expand marketing efforts for their quality products. The US market has proven difficult to penetrate for several reasons. In the US, tilt-turn windows are still a novelty. Though architects love the design and the windows have many benefits, such as being very easy to clean, customers are unused to the

windows. Educating the market is a difficult endeavor.

In addition, the US does not have uniform regulations or building codes. This hinders acceptance of Atlantech products and makes it difficult for builders, who may wish to use the product, to do so. Brugmann has developed a technology for producing the double-hung windows that dominate the US market. However, re-tooling to take advantage of this technology would cost Atlantech $500,000. Michael Maroun says, "While we have access to all the research and tools for these windows, we want to secure a customer prior to incurring the tremendous capital costs needed to supply this potentially lucrative market segment."

Due to the tendency of the US construction industry to buy on a big scale, finding one or two major clients could increase Atlantech's business dramatically. The company will pursue that market first, while continuing to explore innovative products and introducing them to new markets. For example, the company is showing a tilt-turn window fitted with a screen in the European markets -- up until now, screens have been rare in European construction.

Atlantech believes in finding gaps and filling them with products that customers need or will realize that they need once they see them. "We understand that we always have to innovate to stay on top of things. If we let ourselves get out of touch with the market and new trends, we would quickly lose our share of the market. It is costly, but ultimately worth it."

Canadian Fishery Consultants Limited

Canadian Fishery Consultants Limited

Canadian Fishery Consultants Limited is a locally owned consultancy that provides expertise and advice in fishing and aquaculture industries in over 65 countries around the world. The group's expertise lies in the culturing, harvesting, processing and marketing of fish species. Projects encompass a diverse group of specialist services in the fisheries, aquaculture, and plant and process design. CFCL is also affiliated with Canadian Marine Consultants, which provides services around the world in support of port development, with a particular focus on improving operating productivity.

CFCL's projects include activities such as financial and technical feasibility studies; business plans; design, evaluation and retrofitting of fish processing facilities; resource analysis; site selection; and the design of fish culturing facilities. Canadian Marine Consultants serves the port and container sectors of the marine transportation industry, conducting work in areas such as ocean traffic studies and operational assessments, in addition to developing staff training and preventative maintenance programs.

From its modest suite of offices on Queen Street, just opposite the Halifax Infirmary, CFCL conducts a substantial amount of business with Caribbean countries, and has conducted projects in South-East Asia, the South Pacific, the Philippines, China, India, Pakistan, South America, South Africa, the UK and other EC countries, the US, and the Middle East.

The company has deliberately remained fairly small (with a core staff of eight people) in order to maintain flexibility and prevent bureaucracy. They call on a range of outside services and collaborators for specific projects. In the course of their work, they are often required to source equipment, suppliers and other elements of the total package of solutions they can bring to their projects. As a result, they have frequently been instrumental in finding opportunities for other Nova Scotia companies in far-flung parts of the globe -- opportunities that those firms themselves would otherwise never have known about.

CFCL generates about 75% of its revenues from outside the Atlantic region. Over half of this comes from the Caribbean, and about 10% from the US. The rest comes from all over the world.

How the Company Developed

CFCL was formed in 1980 by Don Fraser, a mechanical engineer who had previously worked for a firm called CanPlan -- Canadian Plant Processing -- which had gone out of business in 1976. Bryce Fisher, the other main principal in CFCL (who had also worked for CanPlan in the mid-1970s), joined the company in 1983. He brought with him several years' experience in container terminal planning and operations, having been the manager of the Fairview Cove container operation.

The two principals had known each other over a period of many years. One of the key reasons for linking up was the fact that they liked working together and had already developed a strong trust in each other's abilities and character. This compatibility was essential in order to build a successful consulting business.

The initial focus of the company was on the local fishing industry, which was booming in the early 1980s. All the major fish processing companies -- including Clearwater, National Sea, and many others -- were expanding. Business was good. Both Don and Bryce realized, however, that it would not last. They foresaw that the harvesting practices would eventually lead to a crisis in the industry. Accordingly, they began looking for international business as a hedge. By applying the experience they had gained in the local industry, they began getting some contracts from overseas. CIDA (the Canadian International Development Agency) was instrumental in getting them started. The previous local experience of the principals has been very appropriate in developing the international work, and Nova Scotia was viewed as a natural place as a source of expertise in the field. They tend to stick primarily to work in an English-speaking environment, since the complexity of dealing with technical details in a foreign language can be a barrier in a business which depends so much on good communication.

They created Canadian Marine Consultants in order to apply Bryce's port management expertise. The new company -- a subsidiary -- and the adoption of this name was primarily done for marketing purposes, since no client was about to give ports management contracts to a company proclaiming itself as a fisheries expert. Several container port management contracts were won.

There are only a few firms in the world doing the range of work that CFCL undertakes. There are thousands of firms working on the marine side of things, including myriads of project engineers and support staff. CFCL would never attempt to compete directly with a company such as SNC, for example, which can draw from a pool of 3-4,000 employees. CFCL avoids the well-serviced areas completely by focusing on their particular expertise in fishery and port management. While competition certainly exists, they have managed to find a place for themselves by narrowing their focus and serving a well-defined niche.

As a result, while many other fisheries consultants in Nova Scotia have retrenched significantly over recent years -- or have disappeared entirely -- CFCL has consistently continued to get business over its 13-year life to date.

Key Success Factors

Some of the key factors contributing to CFCL's success include:

- *Focus on quality.* CFCL reckons the quality of its work is second to none. What they do stacks up very favorably with services offered by the best firms based in the US, the UK or Germany. "We don't try to be all things to all people," says Bryce, "we do what we do best. We select the best available people to work on our jobs, so that our quality is never questioned."

- *Going the extra mile.* CFCL always looks for extra ways in which it can provide service. For instance, in some cases they help people get the financing they need for a project. "This might not be unique but it has contributed to our success a great deal. We are very familiar with the policies of CIDA, the World Bank, and other development banks. We share that knowledge with our clients and help them put their entire package together." This has paid off in repeat business. "We are at the point now where some of our clients simply call and ask us to do a job without re-

quiring any company specifications or proposals. They trust us to do a good job at a reasonable price." The firm always tries to use innovative approaches to solve problems.

- *Leveraging a baseline of expertise.* CFCL works in joint collaboration with various other experts on most of its projects. Pieces of the work are parcelled out, with CFCL acting as a kind of project manager. There is a tremendous network among specialists. This is a two-way street. Often, a specialist can be on the ground, keeping CFCL informed of any problems that arise. This also helps in the marketing arena. Everyone helps each other out. The international fisheries industry is a small network and much of the work is generated by word-of-mouth.

- *Keeping in the circuit.* Basic marketing is done by keeping up with various publications, especially those put out by the international financial institutions ("IFIs" in the lingo). But it is essential to "keep in the circuit" in order to stay abreast of developments taking place all over the world. This requires constant travel; personal contact is essential. According to Bryce, "If they see you, they can determine that you are a person of your word." Every available opportunity is taken to drop in on key players in Manila, Singapore, Karachi, Jamaica, and so on. (Bryce spends about half the year out of the country.) Many projects take time to come to fruition, so it's important to keep a lot of irons in the fire.

- *Flexibility and small size.* This is essential for responsiveness and survival. Having seen the dangers associated with large size (CanPlan went from 12 people to 140 people to zero people over a period of a few years), the principals of CFCL are sensitive to their ability to stay on their toes. A small, flexible organization, with strong connections into an international network, has helped them achieve this.

- ***Relationships with other suppliers and benefits to other Nova Scotian firms.*** An important spin-off benefit of the kind of work CFCL does (which is rarely recognized here) is the role they can play in bringing other business into the province. On several occasions, the firm's activities in a distant land have led to supplier contracts for other Nova Scotian firms, such as the ABCO group in Lunenburg. Bryce says that Nova Scotia bidders on these projects have been excellent. On more than one occasion, the Nova Scotia firms "just blew the competition out of the water" in terms of both price and quality. As a vanguard for business that would never otherwise come their way, CFCL's activities provide additional business in a very significant way. Not only does it create new revenue in Nova Scotia; it also exposes Nova Scotia firms to an international and competitive marketplace.

- ***The importance of home-based support.*** Bryce Fisher is adamant about the need to provide a home base in which potential exporters can hone their skills. One of the big problems in the Maritime economy is the fact that so much work is done by the government. According to Bryce, "Governments are never going to build bridges or provide engineering services overseas. But private firms can. The private firms need the chance to do work at home first. Otherwise they'll never have the strength, the credibility or the skills to ever get started in any other markets."

Obstacles and Challenges

The company experiences a wide range of obstacles and challenges in the course of doing its business. Some of the primary ones include:

- *The way the banks relate to the tradable services sector.* CFCL has encountered some very frustrating experiences with the Canadian chartered banks. Because of the nature of its business, the company has a very small amount of tangible assets to offer as collateral. The firm's assets lie in the proven expertise and track record of its principals and staff. But the banks have no interest in this. Consequently, development activities are difficult. Up-front travel costs have to be covered without any financial support from the banks. "It has really crimped our ability to get out and generate new business, and at times has caused unnecessary hardships for us," says Bryce Fisher. Getting a small line of credit has been challenging, even though the business has been consistently healthy. "If we could get financing up front, it would allow our business to grow substantially."

- *Frustration with government.* Government has "frustrated us with their slow turnaround on invoices," in Bryce Fisher's experience. PEMD has assisted the company by helping in the development of all-important personal relationships with clients. However, the application and administration process has been a bureaucratic nightmare. In CFCL's case, when an opportunity comes up, they need to get on a plane and visit the client immediately. There is no time for filling out forms and waiting for weeks. What is required is a simple, long-term commitment on the part of PEMD, which can be called upon as necessary. Poor coordination among the various levels of government is also cited as a frustration.

- *Difficulties working with CIDA.* The administration methods of CIDA have in many instances been frustrating and inefficient. "For some projects," says Bryce Fisher, "CIDA hires an expert, and then proceeds to tell him how to do his job. CIDA officials will sometimes require consultants to take on responsibilities without providing the matching and necessary authority, making successful achievement of goals and objectives impossible." A recent approach on CIDA's part is the Private Sector Development Initiative (PSD), wherein complete financial and administrative authority are given to the consultant. Payments are made upon completion of progress milestones. CFCL is nearing the completion of a PSD project in Pakistan; this project is one of the few CIDA bilateral projects which, in CFCL's experience, will be completed on schedule and within the original budget -- primarily because they contracted an experienced expert, provided him with the necessary authority, and paid him only on the completion of project milestones.

- *Figuring out who makes the decisions.* It is a constant challenge to understand where the decision-making power lies with respect to any given project. It takes real strategy to make the right relationship with a new client to whom you are as yet unknown, and to develop it to the point where they decide to hire you. Sometimes it can be useful to work with an affiliate in the local area, but care must be taken to ensure this affiliate is not simultaneously working with other service providers. Keeping in close touch with key decision-makers

in various parts of the world is important.

- *The difficult Boston access.* In discussing weaknesses of the Nova Scotia location, the poor air connections into Boston was the first thing mentioned by Bryce Fisher. "We're being held to ransom by Air Canada here in Nova Scotia. We absolutely have to get rid of the stranglehold that they have on the air route to Boston."

- *Local services.* CFCL is not a big user of local support services. As a highly travelled group, they are aware of a host of services available elsewhere, with better quality and lower cost. For example, the company's attractive brochure was printed in Singapore (upon the recommendation of another world traveller). Proofs were faxed over within a few days, and the whole job was sent over by air within two weeks -- at *one third the cost* of local printing! Bryce comments that things like printing are now available on a global basis. This an international commodity; only the most efficient providers in the world will survive.

Looking to the Future

Having worked hard over the past 12 years or so to build its reputation and network, Canadian Fishery Consultants sees a host of opportunities in front of it. The firm is in the process of building on its existing expertise by bringing in new talent. There are no plans for major staff expansions, but the depth and strength of the firm's capabilities are growing.

Many of the new opportunities are in Asia, where CFCL's overall expertise on the operating side can be put to use even when the money for major capital expansions in the fishery is not available. In fact, money shortages can sometimes provide a boost to the demand for the firm's services. They can help people run a more efficient operation by working on the 'soft' side rather than specifying capital-based hardware solutions. In Bryce Fisher's eyes, "the world is our stage."

CanJam Trading Ltd.

CanJam Trading Ltd.

Formed by Grace White in 1989, CanJam Trading specializes in supplying unusual and under-utilized sources of protein. The company deals in such items as chicken backs and leg quarters; turkey necks; beef offal; ewe mutton carcasses; pork feet and pickled pork tails; pickled and frozen mackerel; frozen herring; frozen and dried squid; and salt pollock. CanJam also does a brisk business in fish bait. Over 75% of the business is international. Jamaica, a country of 2.5 million people, is CanJam's primary market at present.

On the basis of specific customer needs, the company purchases appropriate products from a selection of reliable suppliers, which are then packed and shipped for sale to customers. CanJam focuses on developing long-term relationships with both suppliers and customers rather than on isolated trades. These relationships have been built on trust by repeatedly providing exactly what the customers require at consistently fair prices. Much of the product comes from suppliers in Atlantic Canada, but as the business has grown, many other sources have been tapped elsewhere in Canada, the US, New Zealand and Ireland.

From an initial contract five years ago to supply Atlantic mackerel, Grace White's company now does approximately $7 million in annual business, operating from pleasant, newly renovated offices in the basement of her home in Dartmouth. On one of the walls is displayed a testament to her enterprising spirit: the 1993 Canadian Women's Entrepreneur of the Year Award. Remarkably, the entire business is run by three people.

Grace White attributes her success to the fact that she has made the effort to fully understand the needs of her chosen markets. CanJam accumulates a large amount of information on its customers' requirements and sets about finding the exact products to suit their needs. The high level of attention and service that CanJam provides has generated great loyalty among the company's customers.

How the Company Developed

CanJam started when Grace White was visiting Jamaica in 1989. She was introduced to a pickled mackerel producer who mentioned his difficulties in sourcing a year-round supply of Atlantic mackerel at competitive prices. Since Grace was from Nova Scotia, he wondered if she could help. With a marketing degree under her belt, a previous career in financial planning, and a family background in the food brokerage business, Grace thought she might just be able to do something.

At the time, says Grace, she hardly knew what a mackerel looked like; so she studied up on the subject. Upon her return to Nova Scotia, she contacted the Department of Fisheries and got the names of all the fish plants which were possible sources of supply. She targeted the 10 most likely companies, called them and found out everything about their product: how much they expected to have available and when; what their average prices had been over the previous year; what kinds of freezers they used; how they packaged their product; and so on.

Grace invested $44,000 to purchase products for her first shipment. However, her customer needed a regular supply, and she needed more money to finance these purchases. Despite her customer's commitments and a well-thought-out business plan, she was unable to get any help from the bank. The father of a friend offered to purchase a 20% interest in her start-up business for an investment of $50,000. She accepted the deal and went forward from there. There has been virtually no financial involvement by government in CanJam.

Originally, the business was based solely on mackerel. At the end of the Canadian mackerel season in her first year, Grace was seeking sources of supply for the rest of the year. She sought contacts with the top 10 potential suppliers in the US through the US Department of Agriculture, and connected with a large New Jersey supplier who had a problem: a large shipment of Illex squid in Nova Scotia which needed to be sold. Grace made a deal, agreeing to sell the squid for a commission, while the US supplier agreed to fulfill her mackerel requirement, with financing terms built into the bargain. Illex squid is used extensively as bait, so Grace set about finding fish plants around Nova Scotia who needed this product. She was now in the bait business. In this way, CanJam simultaneously expanded both its customer base and its supplier base.

Since that time, the business has been built through constantly gathering detailed information on what customers need and what suppliers have to offer, providing precise solutions to specific needs in an ever-widening range of related products. CanJam always takes ownership of the products it deals in, and arranges for all the necessary shipping and documentation in order to deliver to a customer's location.

Key Success Factors

Some highlights of the key success factors in the development of CanJam include:

- ***Ability to really understand customer needs.*** CanJam is interested in developing *customers*, not orders. Grace attempts to ensure that each party gets maximum satisfaction out of the transactions she enters into, and considers her company to be unique in the level of service, knowledge and information she brings to her trades. This has resulted in many customers who trust CanJam's understanding of what they require. As Grace puts it: "A customer is someone who lets you take care of their needs." The very high levels of customer service do not require any special technology. "We know our product line, and we know how to supply the demands of our customers. I am convinced that the service we give to our customers is second to none -- and the competition will just make this more evident."

- ***Fair dealing and a focus on developing long-term relationships.*** Grace White is not interested in "quick deals" and does not take advantage of her customers by charging short-term premiums just because the market could bear it; rather, she focuses on providing ongoing value over extended periods of time, passing onto customers the benefit of bargains she obtains on the supply side. This generates a high level of trust and leads to customer acceptance of price increases if they become necessary.

- ***Knowledge and up-date-information.*** CanJam makes maximum use of computers to keep track of key customer and market data. Typically, CanJam starts a relationship with a new customer by providing just one of the products they need. Grace finds out

everything possible about each customer's needs profile, then explores everything there is to know about the relevant product category, including historical data, price data, major players in the market, data on suppliers and dealers, etc. This information is input into the computer system, which provides an ever-growing database to assist in future decision-making.

- *Creative problem-solving.* Problems can emerge in many ways in this business. For example, a supplier might pack a shipment poorly. It is crucial to deal with such problems quickly and effectively. Doing so provides an opportunity for strengthening the trust in both customer and supplier relationships, and CanJam makes every effort to find solutions which work for all the parties. "We don't run and hide from problems. We negotiate fairly when they occur, and we try to mitigate the impact on both the customer and the supplier at the same time." As Grace White says, "you really establish your credibility when your customers have a problem."

- *Tough financial management.* "I'm a risk taker, not a gambler," notes Grace White. Following one bad experience in the early days, she has learned the necessity of being tough when it comes to financial terms. She prefers the flexibility of dealing on the basis of quality relationships to working with letters of credit. The most important thing is that the customer keeps their end of the bargain. "I don't want a customer who doesn't do what they say they are going to do," says Grace. In the event of problems, CanJam requires subsequent payments up front. The company has only ever had one bad debt.

- *Standing behind the company's word.* "There is never any question in the minds of the people we do business with that we will be true to our word. We always meet or exceed our customers' expectations." This has assisted the company when dealing with banks, suppliers and customers alike.

- *Not quitting.* "Business is a process of problem solving," says Grace White. "There are a bunch of hurdles to be jumped, but I'm a good hurdler. The only time you fail is when you quit."

- *Sharing the company's financial success with employees.* Prior to each new year, Grace sits down with her employees and establishes goals for the year. If agreed-upon goals are met, significant bonuses are paid to the staff, on top of base salary levels which are in themselves relatively high. "I want our pay to be at the top of the scale," says Grace White. "I have a staff who give 130%, because they are empowered, and because they know I see the value they contribute."

Obstacles and Challenges

Some of the obstacles and challenges cited by Grace White include:

- *Taxes.* "High taxes are a big deterrent to growth." She notes that the current system in which corporate earnings in excess of $200,000 are taxed at much higher rates restricts the growth of small businesses. The effect is to encourage the distribution of earnings to shareholders, which weakens the retained earnings base of the company, and therefore its ability to grow. Grace considers that tax burdens on small companies act as a strong encourage-

ment to go offshore -- a move which would be very easy for a company like CanJam to make.

- *Finding suppliers that can provide products with a high quality of service and integrity.* CanJam seeks long-term relationships with suppliers who have a similar value set as it does. Notes Grace: "We don't want to waste our time buying from a company we can't develop a relationship with." This can sometimes create difficulties, since some suppliers take a short-term view and seek to make the highest possible return on one particular transaction, at the expense of long-term good relationships.

- *When times are tough, some people will go to any length to get business even if it means using unethical practices.* In some markets, CanJam runs into situations where an aggressive competitor under-invoices its products in order to avoid duties imposed by the importing country. CanJam occasionally suffers from the resulting unfair competition, but Grace White considers that trustworthy relationships built on a high level of consistent service are the best policy.

- *Finding people with adequate overseas experience to help build the business.* CanJam would like to hire an experienced trader, or train someone with a good background. This requires an understanding of how things work in different cultures. Grace White would like to see more young applicants with greater experience in working outside North America. Many of the prospective employees she talks to do not have the exposure and breadth of experience she feels are necessary to succeed in the business.

- *Learning about prospective markets can be difficult.* CanJam is very selective in entering new markets. Several years ago, Grace attempted to win some business in France, but did not get very far because the packaging requirements were unfamiliar. Gathering up all the necessary information on new markets is time-consuming and requires on-site trips, which can be difficult to orchestrate while simultaneously servicing the existing customer base.

Looking to the Future

In the next two years CanJam expects to increase sales to $10 million or more, by doing exactly what the company has been doing in the past. Also, Grace would like to get more control over some of her supplies, in order to enhance quality and delivery capabilities. This could involve a joint-venture relationship or strategic alliance, perhaps coupled with an investment on CanJam's part. "If I could find a company that would be a good match with us, I would invest," she says.

CanJam is also looking to expand into other markets in which conditions are similar to the ones the company is already familiar with. They are beginning to gather information on the Korean market, but Grace plans to approach new markets on a very focused basis, one at a time. As in the past, she will build new business on the basis of intimate knowledge of specific customer needs.

Orion Electronics Limited

Orion Electronics Limited

Orion Electronics has been designing, developing and manufacturing electronic direction finding devices since 1975. Orion offers a wide array of compatible direction-finding transmitters, receivers and antennae -- all the technology used in tracking things that move, whether that be oil spills, ocean currents, ice flows, cars, boats, people or animals. While its primary products are buoys used to track oil slicks and vehicle tracking equipment used by law enforcement agencies, new opportunities in this cutting edge market arise on a regular basis. The company operates from a small industrial mall near Windsor and has a modest production facility in Church Point, on Nova Scotia's French Shore.

Orion is now well-known worldwide for its oil spill tracking applications. In 1993, a partnership arrangement with Trimble -- a multi-million dollar California company which is one of the leading world players in Global Positioning Systems (GPS) -- greatly expanded the distribution and development of its oil-spill tracking system. This alliance provides greater security for the main segment of Orion's product line, allowing it to look to other markets.

What makes Orion so interesting is how it has weathered storms that have sent so many companies of its type out of existence. Orion almost disappeared in the late 1980s when employment dropped to 2-3 people. Today, after a period of sustained losses, the company is now on the rebound. Employment has grown to 12 people over the past 2-3 years, and the facilities are currently being doubled through expansion into an adjacent space in the existing building. A new marketing person joined the company in 1992, and the major challenge now is to find suitably skilled and talented people to respond to the many opportunities that are presenting themselves.

How the Company Developed

Orion Electronics was started by the principal owner, Hugh Roddis, in 1975. Since his youth in England, Hugh had been fascinated by electronics. Originally, the company was "an outlet for my own interests." He had first visited Nova Scotia, where his father worked as a NATO liaison officer, in 1962. After graduating from university in England, he happened to return here to work for what is now Hermes Electronics. After several years away from the area -- including periods sailing around the Caribbean, and running a desalination plant in Nassau -- he moved to Clare municipality on the French Shore. A friend at the Nova Scotia Research Foundation came up with the idea of producing buoys to track oil spills, and using his special expertise in radio transmitter technology, Hugh Roddis set about developing a system for the federal government.

During the offshore drilling boom in the late 1970s, Orion had no trouble getting customers. They sold systems to major oil companies operating all around the globe, including in the North Sea, Alaska, China and Singapore. "We happened to hit a niche there" reflects Hugh Roddis. The key was selling a complete solution, providing one-stop shopping for their clients.

In the early 1980s, Orion was approached by some US police forces to develop

systems for tracking drug smugglers. This led to other systems used for finding military equipment that had been dropped by parachute -- "it's very embarrassing for the army when they've dropped expensive gear in the bush and they can't find it." The company grew until it reached the limit of its environment in Church Point. Communications were a big problem at the time (this was in the days of telex, not faxes), and there was no supporting infrastructure for this kind of high-tech work.

By the mid 1980s, the company was involved in too many things and became over-extended. The recession hit. Dome Petroleum, a major client, went bankrupt. A US distributor got into financial difficulties. An Ontario businessman raised money on the TSE to develop tracking systems based on their technology for use in hospitals. The company was facing serious problems. They cut back to three people, and Hugh Roddis himself went to work for Litton, becoming engineering manager of the Aerotech plant for three years. Orion itself continued as a tiny operation, with very little overhead and no selling costs ("when a distributor would order, we would make the products"). They were small but profitable, they paid off their debts and made it through a difficult time.

In 1990, Hugh Roddis left Litton to rebuild Orion. He set up shop in the Windsor facility and began developing new products. In 1992, with assistance from ACOA, he hired a new marketing manager, who has been invaluable in identifying and developing opportunities. Orion is profitable, and anticipates quadrupling sales to about $2 million in the coming year, based on the business that is now in the works. The company exports the vast majority of its output, about 90% of which goes to the US.

Key Success Factors

Orion is a company in the process of rebuilding itself. How is it doing this? There appear to be a number of factors at work:

- ***A new focus on building the marketing strength of the company.*** It used to be that Hugh's bright ideas were implemented into products, but the marketing aspect was very weak. The addition of Allison Maher, the energetic new marketing manager, has been critical to the change in the company's fortunes. "Since Allison has been here," says Hugh, "it's different. Now it's often the market pull that drives product development. Information comes from an agent or distributor she's working with." This is starting to help make a business success of the innovative products that Hugh Roddis designs. As Allison Maher puts it, Orion has now started to "show our heads -- we've waved a flag. We just appeared, and people are starting to know we're here." The company is now focusing on marrying market intelligence with knowledge of new technologies. Meetings between Allison, Hugh and the R&D group take place at least once a week to keep track of market opportunities.

- ***Forging the right linkages in the marketplace.*** The new linkage Orion has made with Trimble promises to yield a lot of new business. It also enhances their position in the marketplace -- Trimble is one of the top three GPS firms in the world. (They met Trimble, who already used Orion's products, at a trade show.) But Trimble themselves are "too bureaucratic" -- and to Hugh's surprise, they are looking to Orion to develop a lot of new things for them.

- *Making the right distributor choice.* Orion has had trouble in the past with distributor choices, especially in its law enforcement work in the US. Finding the right distributor -- which is not easy to do -- is seen as "the most important decision you can make." In the past two years, the company has made new relationships with several US distributors, resulting in a dramatic increase in sales. Part of this involves working with distributors who can provide access to end users. "We're a long way from the customer here," says Allison Maher, "and finding the right distributors helps us get one step closer to the market. We need the opportunity to talk with customers. Face-to-face contact with end users is absolutely critical."

- *Flexibility, approachability, and speed.* One of the unique things a small company can deliver is fast response. A primary factor in the company's reputation in the industry is the ability to be fast. "Orion is known for quick turnaround," says Allison. "We get unsolicited calls because we're fast. We're small enough that if we decide to do something, we just do it. We have to be the first with the best at the least cost." Customers also appreciate the approachability and internal visibility of Orion and its staff. Competitors tend to be much more difficult to deal with. "People like the fact that they can talk to the guy who built the product. This is very unusual. Although some people look down their noses at us because we don't have a huge R&D department, most people really appreciate how easy it is to talk to us."

- *Being in a defined niche; the importance of word-of-mouth.* By focusing properly on its core strengths -- expertise in the field of tracking systems and the inventiveness of Hugh Roddis and the R&D team -- Orion has gained recognition within some very defined market niches. "We're establishing a position for ourselves as the company to go to for tracking vehicles -- then we look at the applicable new technologies and incorporate them into our products," says Hugh. Orion has a worldwide name in its chosen niches. The company has a good reputation among its customers and word-of-mouth is a key marketing tool.

Obstacles and Challenges

Orion has encountered many obstacles in its history, and big challenges lie ahead. The following are some of the key issues identified during discussions for this project:

- *Lack of infrastructure in Nova Scotia.* Hugh Roddis identifies this as the single biggest weakness of operating out of Nova Scotia. Sourcing components is slow and expensive. He is unable to take advantage of the choice and cost savings available if the company were operating, say, in California, where there are electronic component supermarkets bigger than Sobeys. Even paint is a problem here. "We can't find anyone who can paint our things properly. No-one in Nova Scotia can do it. We've had customers complain that the paint is coming off their buoys -- so we have to get this work done elsewhere, which is time-consuming and expensive to organize."

- *Attracting people with appropriate skills.* Attracting good people is hard. "We need people who are interested in what they're doing -- who get obsessed. You need to do this to succeed. We don't want people who have taken a

trade school course and know something about electronics," says Hugh. The irony is that the company is being inundated with opportunities which it can't respond to. "Most of the people we see don't have the skills needed to develop new products. It's the new products that create the opportunities for us." Key elements being sought are *commitment, enthusiasm, and intelligence.* Appropriate technical training is a basic requirement, but not at the top of the list. Allison agrees. "We need good R&D bodies. But the people aren't available. We recently got 300 résumés, but there was no-one suitable among them. We don't need test technicians. It's terribly hard to find the people with the right mind-set and the right experience. We could expand like gangbusters if we had the people." A positive aspect of the situation is that the workforce is very loyal. The company's pay rates are average for the area, but "one of the problems is that government has inflated expectations of what people are worth. We've got a situation where there's a two-class system: there are the government employees (plus the banks and other institutional employers) -- and then there's everyone else."

- *Canada Customs*. Getting things in and out of the country is a réal obstacle. "We can spend $150 in brokers' fees, duties and related costs for a $150 item. It's ridiculous." Free trade has not helped any, because "they haven't done away with the paperwork." The customs barrier discourages US customers. "Americans don't want to send things through customs," comments Allison, "it's a pain in the neck for them. It's an additional burden, and a disincentive for them to do business with someone outside the US." The customs issue shows up in getting components into the country, as well as when items need to come back for repair, upgrading or replacement.

- *Isolation from markets*. This presents difficulties for Orion, as it does for many companies in the project. The fact is, they're a long way from their customers. Travel is expensive, and regular face-to-face contact is hard to maintain. Hugh Roddis points to one advantage of this, however. He notes that firms in more populated places can find plenty of business without going too far afield. "Operating from here has forced us to go out into the world markets. As a result we've become well known in the niches we're in. In the long term, it's possible to build a strong world image if you focus on those niches. So the isolation can be made to work for you."

- *Banks, financing and ACOA*. Financing the new growth opportunities is a challenge. Orion raised a little venture capital in the late 1980s, before it went through its downsized phase. Growth is now financed through a combination of internally generated funds and all the government R&D funding it can get, plus R&D tax credits. But working with ACOA has not been easy -- "they're too slow," says Allison, "and there are too many different departments which have to be satisfied. The headache of working with them is just monstrous. Our time is better spent doing what we need to do to build business." Growth is presenting cashflow challenges -- financial outputs have to be made before inputs arrive. The banks are not helpful. "They don't like to see you expand," says Hugh, "if you go into your line of credit to finance new work, they start to ask what's happening to the business."

Looking to the Future

Orion is suddenly growing very rapidly. Numerous opportunities are appearing. "Right now," says Allison Maher, "we have more markets open to us than I could shake three sticks at." Unsolicited calls are coming from a host of new potential customers who have heard about their capabilities. They simply cannot respond to the all the demands in a timely way.

Part of this challenge has to do with finding key product development people; part of it has to do with having access to appropriate financing; and part of it has to do with managing the process.

If the company can manage to transform itself from its existing R&D and small manufacturing base into an organization with the capability and depth of skills that will be required, it appears to have a very promising future in front of it.

Precision Biologicals Inc.

Precision Biologicals Inc.

Precision Biologicals Inc. sells a unique line of fresh-frozen controls (*Cryo-Check*) used in coagulation lab tests. These controls are used to check the systems required for blood coagulation testing -- a procedure done routinely in thousands of hospital laboratories each day. Since its inception in 1983, Precision has undergone a number of changes, moving from selling me-too products at low margins to its present position of steady growth selling an innovative product. More than 75% of Precision's sales are made outside the Atlantic region; of those sales, about 80% is from the rest of Canada and 20% from the US.

Cryo-Check is unique. It is the only fresh-frozen product of its type and was developed through a customer listening and observation process. Competing products are "freeze-dried," which means they have to be reconstituted at the lab site before use. Such products are easier to ship and store, but Precision's customers like the "natural" quality of the fresh-frozen product, as well as the great convenience it offers. The products are manufactured in Dartmouth from raw materials sourced in the US. Products are shipped overnight to hospitals across the continent.

PBI is located in the Burnside Industrial park. The offices and labs are small, pleasant and bright. The laboratories all have windows. Equipment is modern in the laboratories and simple and functional in the rest of the facility. The company is small, with six employees; the working atmosphere is described as "like a family."

How the Company Developed

PBI was started in 1983 by Tony Bebbington, an entrepreneur with a technical and business background. He developed a line of products aimed at the coagulation laboratory in hospitals -- particularly reagents and controls. He spent two years developing the products, with financing from a local venture capital source (under the provincial venture capital program). Initial sales were in the Maritime region and the company developed several hundred thousand dollars in sales in the first few years.

Some sales were made into Ontario and also Italy, Spain, South America and Mexico, but the company did not develop a real sustainable competitive advantage. The main competitors were multinational companies with large sales forces and extensive product lines. Precision was competing mainly on price: products were as good as, but not better than, those of the big competitors. They were me-too products. Growth was difficult to achieve.

In the late 1980s, Tony Bebbington attempted to expand Precision's product line by manufacturing other products used in hospital labs -- including petri dish media and a line of parasitology transport products sold in the Maritimes and Ontario. These were all commonly used me-too products; the idea was to deliver them to regional customers on the basis of local service plus competitive price.

It didn't work. A price war developed with a large US competitor who did not take kindly to a small company making inroads into its Maritime markets. The US competi-

tor dropped prices by 40% over a 2-year period. Despite attempts to get local hospitals to "buy local," Precision came under increasing pressure. Margins were eroded in order to maintain the modest market share that had been developed. It became clear that there was no future in this business. By this time, Precision's founder had left, and despite attempts by staff and shareholders to put things on a new track, the company was slowly but steadily losing money. Something radical and drastic had to be done if it was to survive.

In 1991, a vigorous effort was made to find new product alternatives in which Precision could have a real and sustainable competitive advantage. Under the leadership of a new shareholder group, an extensive "customer listening" program was initiated to find out what users in the labs Precision served found frustrating about existing product offerings.

Out of this process, the *Cryo-Check* product line was developed over a period of less than six months. Precision worked very closely with a group of 12 pilot hospitals across Canada in developing the product line, checking that the design, performance, format and delivery were exactly what the pilot hospitals wanted.

The product was launched in Canada in April, 1992. Having been so closely involved in the development process, the pilot group readily became the first customers and were enthusiastic supporters. The pilot group helped generate sales through word-of-mouth advertising.

Massachusetts General Hospital in Boston was an early supporter, and their interest helped to get others to look at the product. Development of initial US sales was accomplished entirely through developing a network of people who knew each other well -- composed mainly of recognized leaders in the field.

Precision hired a new sales person in August, 1993 to help develop the US market (primarily through telemarketing). Since then, sales have been growing steadily. Almost all the initial customers are repurchasing on a regular basis, and new purchasers are coming into the pipeline at a good rate. Sales of the product line have grown at a rate of 20-25% per quarter, and now represent over 75% of the company's revenues. Other lines have been phased out as this new area of business has started to come into its own.

From a position three years ago of selling uncompetitive products with poor margins, the company is now focused, growing and profitable.

Key Success Factors

A number of factors have contributed to the turnaround, new product development and growth at Precision Biologicals:

- ***Focused customer listening*** -- without it, Precision would not have discovered the need for the *Cryo-Check* product line. If Precision had not talked to key people at laboratories and observed how products where being used, the company would most likely have continued to spiral downward with low-margin products.

- ***Listening is taken further by acting immediately on valid customer concerns***. Precision maintains a book where all customer comments, positive and negative are listed. In the course of a routine follow-up call, a customer mentioned that she was very satisfied with the product, but her hands were very cold at the end of unpacking it.

(*Cryo-Check* is shipped frozen, on dry ice.) The company's operations manager immediately went out and found four possible types of gloves. "Our lab staff tried each of the gloves and chose the best ones. Within a matter of days, we were shipping the gloves with every order -- complete with a 'Warm-up to *Cryo-Check* label'. Now customers can wear the gloves before they touch anything cold. Our customers were very impressed. These little details mean a lot."

- ***Willingness to change and re-evaluate has been essential.*** Steve Duff, company president, says "I was almost ready to leave on a cross-country trip to try to market *Cryo-Check* -- that kind of direct selling is the way many medical products are sold. But we realized that by starting an evaluation process with a number of well-qualified labs and following up by phone, we could reach more potential customers in a meaningful way than on any door-to-door sales trip." The new sales approach has proven successful and is the basis for the current telemarketing campaign targeted to the customers.

- ***Involvement of the whole staff in innovation and listening has been important.*** All members of the staff, including the technical staff, are encouraged to talk to customers. "One of our staff members needed to have more contact with the customers, so he became involved in a simple survey effort we did to check on customer satisfaction," says Steve Duff. "Even though his training and expertise is in the technology and production, he is becoming skilled at customer listening."

- ***Excellent service*** -- essential from Precision's point of view. And the customers seem to agree. The customer comment notebook revealed quotes such as: "I have to say that your service is simply spectacular" (Toronto's Hospital for Sick Children); "Precision has gained a reputation for a high level of customer service...why can't all companies treat us this way?" (Health Sciences Centre, Newfoundland); and "Have you folks taken a course in customer service or something?!" (Maine Medical Center, Portland, Maine).

- ***Going the extra mile.*** Precision ships its products overnight via Federal Express. However, Precision doesn't stop there. One staff member tracks each shipment to its destination, ensures that it arrives in good condition and calls the laboratory as soon as the product has been delivered. It is very important that the product not sit in a hospital's shipping department any longer than necessary due to the perishable nature of blood products. This is done using a Federal Express tracking terminal located in Precision's offices. Customers are invariably amazed. Steve Duff mentioned, "When we make the follow-up call to tell the lab that the shipment arrived an hour ago and was signed for by such and such a person, they are shocked. We know that the shipment arrived before the lab does. After they retrieve the shipment, we always call again to be sure everything was in excellent shape and that the customer has no problems."

- ***The right investor group at a critical time in the company's development.*** The current investor group provided Precision with both financial resources and much needed business acumen. Government financing has been beneficial in capital purchases and funding a marketing position, but the active input of concerned investors has been invalu-

able in helping direct the company in a new way of approaching its business.

Obstacles and Challenges

Precision has faced a number of challenges in its development to date. Reviewing the obstacles related to being located in Nova Scotia, the following stand out:

- *Keeping in touch with markets in the US is difficult.* Although Precision has instituted a telemarketing plan which is showing signs of success, Steve Duff believes that keeping tabs on the needs of potential customers is very difficult. "Understanding just who our customers are and their needs and points of view is hard. Qualifying the market and doing market research are difficult tasks to do from Nova Scotia. There are fundamental differences in dealing with hospitals in the US and hospitals in Canada. It takes time to understand what approaches work in each market."

- *Maintaining and expanding sales throughout the US market is a critical challenge* -- finding the right employees and the funds to support a concentrated sales effort in the US is challenging. "We know that once we get potential customers into our product evaluation pipeline, 90% will become actual customers. And virtually all of our customers re-order. We know there is a large untapped market in the US for us, but we have yet to expand the sales effort to take full advantage of it."

- *No Canadian source for human plasma.* The raw material for the *Cryo-Check* product is human plasma and in Canada, only the Red Cross collects plasma; none is available to small firms like Precision -- only to large pharmaceutical firms with whom the Red Cross has an "arms-length" relationship. This increases production costs for Precision.

- *Finding staff members with good business sense and technical skills.* Precision has had success to date in finding the type of employee needed to work closely with the customers and to provide the kind of attention to detail that is a large part of the company's competitive advantage. However, future development will depend on finding more of these key employees and this is a challenge. "We see people right out of university who have virtually no business skills. It is at the level of not knowing what a purchase order or an invoice is. In our experience, both business and science graduates are often ill-prepared for the realities of the business world."

- *Ensuring that shipments clear US Customs in a timely manner.* The company now has this under control but for a time many of Precision's shipments were held up at US Customs in Memphis, the Federal Express hub. This could have been a disaster as the products will only last for three days in transit. "It took a long time to get to the bottom of the problem -- it turned out to be a problem with the Customs codes being different in the US and Canada. There isn't anyone to turn to help with customs problems. In fact, Federal Express told one of their customers in Newfoundland to call us so that we could explain how to handle the customs requirements for the US."

Looking to the Future

Steve Duff sees customer listening as the key tool to Precision's future development. While the market potential for *Cryo-Check* is good, it is a limited market. And though

Cryo-Check is not in immediate danger of being copied by a major competitor, Precision believes that the company's future is in a diversified product list.

"We have pursued a pricing policy that makes us very attractive to the marketplace and less attractive to other potential producers," he notes. "However, we are very aware that we could face a copycat version of *Cryo-Check*. Our dedication to customer service and quality is essential to maintaining a lead, as is listening for new problems that need to be solved."

Those products will have to be developed through the same kind of customer listening and customer observation that yielded *Cryo-Check*. Market and new product development will require more capital and staff -- both significant challenges.

The company will continue to focus on expanding sales to the US market through developing its sales staff. At the same time, the company is looking towards a number of related new product opportunities which it hopes to develop in collaboration with some local university researchers.

Spots Pots Inc.

Spots Pots Inc.

Spots Pots is small manufacturing operation located in the Burnside Industrial Park. The company produces a unique line of products based on the principle of adding a hand-painted glaze to otherwise ordinary clay pots. Spots Pots was founded in May of 1988 by two art students from the Nova Scotia College of Art and Design (NSCAD), Sharon Davis and Sue Klabunde. Since starting with only $200 in the bank and 50 clay flower pots, the company has grown steadily. It now employs seven people full-time, has opened a retail outlet in Halifax, and has good prospects for future growth.

More than 90% of the company's products are exported out of Nova Scotia -- 40% to the rest of Canada, and 50% to the United States.

The cornerstone of Spots Pots' development has been the uniqueness of its products. Since everything the company makes is hand painted, flexibility to change the product look has given Spots Pots its edge. This flexibility allows for a relatively short turnaround time, enabling the company to set (rather than merely follow) trends. Some of these trends involve expanding the product line to include such items as tableware, vases, woodware to hold the pots, napkin rings, and other table-top accessories.

All of Spots Pots products are made by taking clay (whether it is a pre-made flower pot or clay that is shaped into some other form) and then glazing and hand painting the product to predetermined designs. Because everything is hand painted, no two products will come out exactly alike.

Both Sue Klabunde and Sharon Davis were brought up in Ontario, and exhibit a friendly, humorous mentality that leaves one with a refreshed feeling. Each outwardly joke about their business style or lack of it. The company's present location is somewhat confining. The makeshift office is more like an extended warehouse, where everyone has access to a room called "the office." While both Sue and Sharon are primarily responsible for marketing Spots Pots, each still spends time overseeing different aspects of the business. Sue oversees production and shipping; Sharon looks after the accounting, payables and receivables.

How the Company Developed

As students at NSCAD, Sharon and Sue came up with the idea to add a glazed finish to a clay flower pot. Interestingly, they did not make the original clay pot, but simply put a nice glaze on a regular store-bought pot. After some discussion, the two decided to go to a craft show to see if there was any interest from the public for this type of product. When the response was favorable, they decided to rent some space in a second floor office on Barrington Street.

The next major step was taken when they joined forces with an Ontario giftware sales representative. This gentleman was instrumental in assisting Sue and Sharon gain market exposure and experience, helping them with the important basics about the giftware industry. The first recommendation was to have Spots Pots join the Canadian Gift and Tableware Association, for a fee of $300, giving the

company access to Canadian trade shows and lower shipping rates.

The move to join up with this Ontario sales agent immediately paid off, when he generated orders of approximately $10,000 from a single giftware trade show. This, however, created a whole new series of problems that Spots Pots needed to overcome.

First and foremost, they had very little money. They approached the banks, but few would even contemplate dealing with them, citing too little equity as the reason. After several attempts, the Credit Union agreed to deal with them, providing a line of credit equal to $1.00 for every $2.00 of receivables Spots Pots had, for a line of credit of approximately $5,000.

The next move was to look into the possibility of obtaining government funding. ACOA was very helpful and provided the company with some grant money. Their accountant suggested that Sue and Sharon approach a female account representative at the Royal Bank who turned out to be very helpful in enabling them to obtain bridge financing.

With the financing matter somewhat addressed, the next key issue was the production facility. The company's location on Barrington Street created some real logistical problems. When the first shipment of clay pots -- a skid with 3,000 of them -- came in, Sue and Sharon had to carry the pots off the truck into the elevator. Once they got the pots upstairs they spread them out all over the floor for fear it would collapse. They decided to move the production operation to Burnside in 1990, which is the company's current location. Since the move to Burnside, Spots Pots has been able to build company sales steadily from $99,000 in 1990 to $430,000 in 1993. This has been accomplished by adding new products and pushing forward into export markets.

The first export market they decided to explore was the United States, with Boston as their first target. The idea came to them that Boston would be a logical place to begin exporting because of its proximity to Nova Scotia and the close ties that area has with Nova Scotia. They went on a NEBS ("New Exporters to Border States") mission, a government-sponsored visit to a trade show and the city of Boston, and not only did the trip illustrate the potential of the market, but they also were introduced to another giftware sales agent who has now become Spots Pots principal sales representative.

Key Success Factors

A number of factors have contributed to the development and growing success of Spots Pots:

- ***Spots Pots' ability to design and flexibly change the product to meet customer needs*** has been the cornerstone of the company's success. Simply put, the products are high-quality, the glazes are bright, and the designs are colorful and very attractive. But Spots Pots has not rested on its laurels, content with the success of the current product. Instead they have constantly changed the product line, adding new and exciting products. This is a key factor in maintaining a presence in the giftware market. "We can change and update, that is our edge, because everything we make is hand painted," said Sue Klabunde. This ability to be flexible in their product design has given the company its market niche.

- ***The energy and drive to succeed*** of both Sharon Davis and Sue Klabunde has

enabled the company to come this far. It has not been easy for these two women to get their foot in the door, but they have. Both partners believe being women has made business dealings much more difficult, but the desire to succeed has kept them going. "We eat, sleep and breathe our business daily -- 28 hours a day." Both work extremely hard and ask that their employees do the same. Sharon and Sue combine this leadership-by-example with a strong ability to listen and keep in touch with employees and customers. Without benefit of formal training, they have developed a leadership style that works.

- *Government assistance has been extremely helpful.* Having to start out with virtually no funds in their pockets, any financial support they could receive was critical. ACOA has been their biggest supporter, helping the company with such things as printing their first and second brochures (instrumental in the business' development), and assisting in the initial move to Burnside. Other government agencies, such as the Canadian Consulate in Boston, PEMD, and the Small Business Development Grant Program, have also helped.

- *The attitude the customers have regarding Nova Scotia has helped promote the products.* Nova Scotia is viewed as a quaint place. People in the United States like the concept of a product line like Spots Pots coming from Nova Scotia. It seems a perfect fit. Nova Scotia represents the "real thing," homey and cozy, as opposed to coming out of a big place like Toronto or California, where they pretend to develop products which look as if they were made in a small quaint place.

- *Location.* In Nova Scotia, operating costs for this type of business tend to be lower than in many other places. Proximity to the US market has proved to be beneficial, but it has taken a lot of work to establish a distribution channel from Nova Scotia into the US market.

Obstacles and Challenges

The company has faced several obstacles in its development to date. The following stand out:

- *Shipping the product,* especially to the United States, was a big problem in the beginning. The first order Spots Pots shipped ended up costing the customer 40% for the shipping, which obviously displeased the customer. Shipments to the United States were originally going through Buffalo and then back down the New England coast. "It just wasn't logical." After some digging, Sue and Sharon finally figured out a more reasonable shipping route. Now, Spots Pots ships the products destined for the United States via a ground carrier through Calais, Maine. Their broker transports the products across the border, and then freight-forwards the products via UPS to customers throughout the rest of the US.

- *Obtaining acceptable service from the banks* has been a problem. Whether it has been because of the nature of the product or because Spots Pots is owned and operated by two women, the fact remains that the banks have been less than cooperative. Only once have Sue and Sharon experienced a cooperative bank representative (who was a woman). Since their account has been moved to a new representative, (due to their growth into a larger credit and loan category), things have not

improved at all and actually have changed for the worse. "We really believe that if we were selling bolts, he would treat us differently."

- *A Nova Scotia location makes it difficult to deal with certain distant markets.* It is difficult for Spots Pots to deal with the West Coast of North America, which is important since 30% of the company's business is done there. They communicate by fax, but it is hard to talk directly with these customers when all you have is a 4-5 hour window in which to do business.

- *The Atlantic Craft Trade Show.* Spots Pots was denied admission to the Atlantic Craft Trade Show during their first years in business because they did not hand-make their base products; so even though the company was wholesaling across Canada, it could not sell at the only craft trade show in its own territory. The catch to this was that if a company does not go to this show it cannot participate in any government-sponsored trade initiatives for crafts. Spots Pots appealed this decision until they were granted admission; they now work with the Provincial government sharing a permanent showroom in the Gift Mart in Atlanta, Georgia.

Looking to the Future

When one listens to the future plans that Sue Klabunde and Sharon Davis have for Spot Pots, it is not hard to agree with the potential that exists for expansion. The flexibility of the company to come up with new products and product designs has served them well to date, and sales are growing at a healthy rate.

Future plans to add such products as tablecloths, stationery, and an entire line of giftware products seems to be a logical progression for a company that has built its current level of success on the foundation of product design.

Expanding their markets geographically is also another very real possibility. Australia, the UK, Portugal, Sweden and Norway are potential markets that may open quickly through joint ventures and with the help of a European sales agent.

With a new location from which to coordinate this expansion, increased access to capital, and the continued drive of two talented entrepreneurs, further success seems to be a foregone conclusion.

Worthington Software Company

Worthington Software Company

Worthington Software is, as president Cristian Worthington puts it, a company of "infopreneurs." Worthington Software makes its business based on information. The company has designed and developed a proprietary software system by which users with a simple fax machine can make inquiries to sophisticated corporate databases which can otherwise only be accessed through on-line terminals.

An end user fills in boxes on a form and faxes this to Worthington's *I-Fax* system, which is housed on computer installations in Halifax, London (England) and locations in the US. The *I-Fax* system translates these inquiries into formats readable by the database being queried, and subsequently re-translates the answers for faxing back to the end user. Thousands of inquiries are automatically processed by the system around the clock.

A client's corporate database can thereby be made available to many more customers, who only need a fax machine to obtain information from the database. Consequently, the market size is increased; likewise sales and profits are increased for the Worthington client who owns the database.

In its five years since *I-Fax* was born, Worthington Software's sales have grown dramatically and now approach $5 million per annum. Almost all (97%+) of the company's revenues are derived from sales outside the region. About 40% of those revenues come from the US and about 60% from the UK. Barriers to doing business in Canada have encouraged the company to focus on business development outside the country. However, the company is now starting to do some business in Canada.

Worthington Software is located in a converted older home on Hollis Street in Halifax. The pleasant offices take up the entire top floor of what was clearly an elegant home in the past century. As is frequently the case at many software companies, computers seem to outnumber the staff. Adjacent to a large meeting room on the ground floor is a custom-designed, air-conditioned room which houses the thousands of dollars worth of hardware required to operate one of the *I-Fax* system facilities. The meeting room itself has a large white marker board on the wall, which retains the faint impressions of notes and key points from many working meetings.

How the Company Developed

"Being here was an accident of birth," says Cris Worthington, whose family relocated to Nova Scotia from Argentina when he was young.

Cris had started a software consulting business in the mid 1980s, and had the idea for the *I-Fax* system while he was working on a problem for a client. "I provided a solution to my client's problem by creating what essentially became the basis of the prototype to the *I-Fax* product. Within about a hour, I realized that I had also solved a much larger problem. *I-Fax* was conceived in 1989 and during the next two years, the product was refined and we got a working prototype together. Two of us

worked on this, living off cash flow. It was bloody insane."

The company funded further development to the software from cash flow, as well. While the prototype was crude, it worked, and Worthington Software found a client in the Department of Fisheries. After that, Cris Worthington faced the problem of marketing the product.

In the Fall of 1990, the company ran out of money. Cris met the crisis with a creative solution. "First, I carefully selected and called people who might be interested in this technology. I did intensive qualifying and follow-up to determine who should be invited and who was likely to show up at the meeting. I got Unitel to join me, since at that time they were entering in the marketplace and trying to present an alternative long-distance service for business. Unitel helped sponsor the meeting, and graciously shared the costs; their name gave me credibility. I held the meeting in a small room at the Barrington Inn -- and it was packed. It was clearly a success since people were standing in the back! Would-be investors turned up, and from that meeting I found the investors I now work with."

At this meeting, Cris met an investor from British Columbia, who put him in touch with a group of high-profile investors in Western Canada. Those investors, in turn, put him together with investors in the UK and US. The company's board now includes several prominent business people, such as the CEO of Hanson Trust in the UK. Throughout the financing process, Cris Worthington has retained a controlling interest in the company.

Deciding how to market the product was difficult. Some unfortunate business arrangements caused setbacks for the US operation, but Cris learned from that experience that "you can delegate some of the work, but never the responsibility." Marketing *I-Fax* technology was an "evangelical experience." But, fortunately, fax technology enjoys a high degree of understanding among older businessmen and investors. The *I-Fax* concept itself is very easy to explain.

The company now enters into licensing agreements and generally takes a controlling position in companies set up to provide the *I-Fax* service in different locations. In the UK, this approach is working well. Efforts are underway to change the US operation to this way of doing business. The company is also pursuing strategic alliances, such as one with Apple Computer company in relation to the recent Newton technology.

Key Success Factors

Worthington Software attributes its growth and success to a number of factors:

- ***Marketing a service, not a technology.*** The company's technology is at the heart of the *I-Fax* product. Worthington Software continually works to ensure the technology is outstripping all competition. However, the company made a critical choice at the very beginning: choosing to position its product not as a technology, but *as a service*. "We are creative about how we view technology. Technology is just a tool. We create both a product and service. Others concentrate on just selling the software. We use our strength in solving problems for the client."

- ***Creating a situation where the I-Fax service is a profit centre for the company, rather than a cost.*** "We succeeded with this service in the midst of the recession," notes Cris. "To do so,

we had to choose a different sales and marketing approach, because during a recession companies have very low capital budgets. We noticed that customers were already spending money in related activities. It was a matter of presenting a way to transfer those dollars to us. We understood the psychology of our prospective clients' organizations. We could have continually lowered our prices, selling on price, but that results in a nickel-and-dime approach. We found that if our service enables clients to make money, rather than just save it, they are much more generous."

- *Focus on basic business principles.* The company puts emphasis on making a profit and creating alliances that work rather than focusing on the technology itself. "The principles for a high-tech company are identical to those involved in the management of any other business enterprise. It isn't special for technical companies. You have got to make a profit. You just produce a quality product and sell it."

- *Hands-on management.* Due to the design of the technology, Cris Worthington can monitor the use of the *I-Fax* system on a daily basis. "I monitor everything very carefully. I know the frequency of use, whether or not someone has stopped using the *I-Fax* service, and so on. I make calls to check on whether or not things are going well." The company uses statistical data to review usage patterns. This information is applied when seeking new customers and designing product enhancements.

- ***Willingness to accept the right investors at a critical point in the company's development.*** Active investors have helped shape the business. "My investor group has members with high-level, practical corporate experience. They have been extremely helpful, giving me excellent advice and important business contacts." Cris notes that it takes time to develop these relationships. "Choosing the right partnership arrangement is a lot like a marriage. A long courtship period is very useful to see if you are compatible. Breaking off a temporary arrangement is a lot easier than getting out of a firm partnership."

- ***Cris Worthington is unusual among many of the companies in this study with respect to his view on financing.*** "Selling equity is not regarded as objectionable in most parts of the world. In every other country, giving up a portion of the company in return for much needed financing is a perfectly acceptable and legitimate way of doing business. I am not a rich person and have no business gambling with the rent money. I should focus on my core areas of expertise; others have the money to risk. They work with me to help the company be successful. In return for that, they are entitled to a fair portion of the profits."

- ***Enthusiasm and drive of the entrepreneur.*** Cris Worthington is highly creative and willing to take risks. He spends over 70% of his time travelling to stay in touch with the market and to seek out and negotiate alliances. "I'm an immigrant kid," he says. "I work very hard and expect to do so in order to succeed. I have been successful in getting this business going because I got on a plane and left Halifax. I had the courage -- when I literally had nothing in the bank -- to take a risk and fly to the UK to meet with potential investors. I worked very hard to find

the right investors, sell the idea to them and make the business grow."

Obstacles and Challenges

Cris Worthington discussed many serious obstacles to doing business in Nova Scotia.

- *Cost and access to communication.* "Halifax is at the end of the information highway. In fact, it is in danger of becoming like those little towns by-passed by the main highway, where all the gas stations and businesses go broke. The major costs in our business are air travel, then telephone. It is ridiculous that there is no real distinction in rates for inter-provincial and international commercial telephone traffic. A database located in Toronto, sending out information to the rest of Canada and the world, would cost 50% less than providing the same service for the same database located in Halifax."

- *Doing business in Canada altogether is very difficult and expensive.* "It is terribly hard to export to the rest of Canada. The cost of communications here is artificially high. Inter-provincial trade restrictions create artificial boundaries. The multiple layers of government result in many incompatible sources of data, which don't easily lend themselves to the *I-Fax* service. For these reasons, we have only started to do business in Canada very recently."

- *Canadian Customs regulations present major obstacles to doing business.* Worthington Software has to buy all its hardware components in the US. The company builds the system platforms in Halifax and tests them before returning them to the clients. This involves re-exporting hardware for installation at Worthington's sites in the UK and the US. "Free Trade isn't effective. I pay thousands of dollars in GST and duty. Yes, you can get it back, but only about 3-4 months after the product has been returned to the US, and after you fill out a whole bunch of forms. The Customs people revel in tying up my money for months on end -- or else I am forced to pay a king's ransom to a customs broker. It is a barrier to adding value to any goods here in Canada."

- *Finding employees who have a strong work ethic and who can add value.* "Wages are lower here in Halifax than elsewhere, but in many ways you get what you pay for. We need people who are creative and willing to try things, people who *don't* do what they are told. We have given up on trying to have any meaningful marketing activity originating from Halifax because we can't find enough of the kinds of employees we need in order to be effective. It is extremely rare for us to find employees with a sense of urgency. It doesn't seem important to them to call a customer right back or solve a problem right away. It is a cultural thing -- a 'do-it-tomorrow' attitude."

- *Too much government and taxes, which discourage business growth.* Cris Worthington puts it bluntly: "Rich people can buy plane tickets. One of the important factors affecting companies which trade in a global environment is the local tax regime. To succeed, you need to have internal cost structures which are competitive with those in other places. Government needs to be more sensitive to the fact that businesses operating in global markets will have to leave if they are subjected to an unreasonable or uncompetitive tax burden. This also affects the real cost of wages. For example, personal tax rates in the UK

are lower than in Nova Scotia. Employees look at what is left in their pay cheque after taxes, so our ability to compete from here is affected by this."

- ***Lack of incentive to the crucial private investors***. Cris Worthington strongly believes that the active involvement of private investors is crucial to the development of young businesses. "It is not government's role to know how to grow a business -- government people don't have the experience or the mind set. Business people know about business. What we need are incentives to get private investors into the game. In the initial stages, you need 'friendly' seed money. There should be strong tax incentives to encourage this, so that lots of ventures are seeded. Only some of these will succeed; investors in those that don't succeed should get generous write-offs, since the entrepreneurs will have gained valuable experience, even through a failure. Those companies that go forward will need more money, from more sophisticated capital sources, which also need to be encouraged. It is important that this is *not* arm's length money. Most people want an investor to keep his distance, but this is foolish. They make the mistake of partnering with people who don't add value."

- ***The bureaucracies associated with administering government "investments."*** Cris also points out that the tax credit system applied to R&D tax credits is much more efficient to administer than the large bureaucratic structures of agencies like ACOA, whose overheads can eat up 50% or more of the available money. "The tax system is the best way to get this money into new business development. It's terribly important that this money is private money, because private investors can help guide an entrepreneur in ways no government agency ever can."

Looking to the Future

Worthington Software continues to develop new customers in both the US and the UK. The company expects to grow at the rate of at least $2 million per year in new revenues. Worthington only began doing business in Canada in the last quarter, but the company anticipates growth in its Canadian business this year and plans to open a data centre in Toronto.

Cris Worthington has considered various possibilities for the company's future, including more joint ventures, alliances and exploration of international markets outside the UK and US. "*I-Fax* is the poor man's EDI. In many countries, fax is the next available 'new' technology. We look forward to exploring the opportunities in new geographical markets."

The 'Mid-Size' Companies

Following are profiles of the 'mid-size' companies included in the project -- those with between 15 and 50 employees.

Fenwick Laboratories Limited

Focal Technologies Inc.

Metals Economics Group

Prograph International

Salter Street Films

Tri-Star Industries Limited

Fenwick Laboratories Limited

Fenwick Laboratories Limited

Fenwick Laboratories Limited, which occupies about 10,000 square feet on the second floor of a medical building in the south end of Halifax, provides comprehensive inorganic and organic analytical chemistry services for testing water, soil, waste, sludge, biota and leachate. The four-year old company, which serves markets both inside and outside Atlantic Canada, has been growing at a rate of about 20% per annum since its inception, and currently generates annual revenues of over $3 million based on its staff complement of 40 people. Fenwick's business was originally developed in Nova Scotia, but its primary growth is coming from outside the province, including services being provided in the other Maritime provinces, Ontario and, to some extent, the US. About 30% of its revenues now come from outside the region.

Fenwick is unique among the companies included in this project because of the way it has forged a key strategic relationship with a large company outside the region. This relationship provides access to a growing network of similar laboratories located around North America, which are being assembled with the help of the partner's credibility and financial strength.

Based on Fenwick's innovative and cost-effective approaches in the highly competitive environmental testing field, the Halifax lab is slated to become the main R&D, training and education centre for this entire North American network of service laboratories. Fenwick is also engaged in an extensive research and development program in collaboration with the National Research Council, related to shellfish toxins.

How the Company Developed

Fenwick has two principal forerunners -- Path Scientific Research, which had been providing testing services out of the Tupper Medical Building and Victoria General Hospital in Halifax, and OceanChem, a Dartmouth-based provider of laboratory services with a focus on ocean-related testing work. Path Scientific had been in existence as a commercial operation since about 1987. Ross McCurdy, a PhD in environmental science who is now president of Fenwick, had worked since the early 1970s doing environmental testing for the province of Nova Scotia. This work was conducted at an environmental lab housed at the VG hospital.

During the 1980s, there was an increasing demand for environmental testing services, based on the needs of both the provincial government and also those of private industry. It became clear that it would be best to establish a separate entity outside the umbrella of the VG and the province, with its own mandate and management. Path Scientific was therefore established as a private company to organize and manage the growing volume of work. The university, the VG hospital, and the VG Foundation were involved as team members. Between 1987 and 1990, the company increased its staff from 4 to 12 and, under Ross McCurdy's direction, developed some very innovative testing procedures using rapid chemical analysis techniques.

In 1990, Path Scientific was spun off from under its university/hospital umbrella, and joined forces with OceanChem to create Fenwick Laboratories. The partners

provided complementary skills and the merger made a lot of sense all round. The new company started out with a total staff complement of about 20 people.
Since its inception, Fenwick has steadily expanded the geographical range of its business to the other Maritime provinces and then to Ontario. This has been done on the basis of a continuous process of developing innovative techniques and systems. The company is now widely recognized as a very well-equipped, high-technology, environmental laboratory, and has made inroads into the extremely competitive Ontario market through differentiating itself from other labs in the field. Fenwick exceeds the expected baseline of service by providing *information*, not just data. Educational support for its clients also plays an important role in the "value-added" component of the business.

In mid-1992, recognizing the quality of the work Fenwick was doing and the potential for growth, the MDS Health Group Limited joined Fenwick's Board of Directors. MDS is a $1 billion Ontario-based medical services company, with a strong clinical laboratory business, as well as an aggressive venture capital arm focusing on the medical sector. MDS has a significant stake in the company, but the relationship with MDS was made in order to build linkages into the industry; not to raise money.

Key Success Factors

Ross McCurdy attributes the growing success of Fenwick to a number of factors. In particular:

- ***A high level of competence and extensive use of high-tech equipment.*** Ross McCurdy says: "You'd be hard pressed to find a better environmental lab anywhere in North America." The company's confidence in its abilities is evident upon entering the reception area. Whereas most service laboratories do their work behind closed doors, the physical layout of the space at Fenwick is open and inviting; the main lab work area is immediately visible as you enter, and technicians can readily be seen putting samples through batteries of tests on a range of sophisticated equipment. Fenwick is constantly enhancing its capabilities by adding new equipment, as well as custom-designing technologies to fit their particular system and needs.

- ***The company focuses on innovation as a key strategic weapon.*** There is significant over-capacity in the environmental testing industry at the moment, and the intense competitive pressures force innovation. An atmosphere of constant improvement has helped the company become a low-cost provider. Innovation has not only enabled Fenwick to survive, but to grow in this tough business climate. "The true advances tend to be made by a team of creative thinkers who are intimately involved with the science and who can see what's going on overall." This has become easier now that the company is bigger, since more resources can be brought to bear on finding solutions. An open management style contributes to the process. The company is run by consensus management, and teamwork is the norm. Ross meets regularly with small groups drawn from a cross-section of the staff (without department heads) to listen for concerns and opportunities -- an approach which he says works very well.

- ***Differentiation on the basis of providing more "intelligence".*** In this industry, competitors generally measure their performance based on

quality, turnaround time and price. In particular, price has become a factor which service providers in the industry often focus on. Many labs in the Ontario market, having grown up during better times in the 1980s, are highly leveraged due to past equipment expansions, and see no alternative but to compete primarily on price. While remaining cost competitive, Fenwick attempts to break away from that mold by adding further value to its services through providing more than just the results required by its clients. A range of data interpretation capabilities (including artificial intelligence applications) are at the core of this approach, with the common goal of enhancing the client's understanding of what the data mean.

- *An extremely definite focus, enhanced by customizing service delivery specifically for different sectors.* Fenwick serves a range of different kinds of clients, including (among others) government, consulting engineers, and industry. Each of these groups has different needs, and each views the world from a different perspective. Fenwick makes a point of trying to understand each set of needs based on listening to their clients, and customizes specific services accordingly. As a result, Fenwick is recognized as a knowledgeable and responsive group. This is something, says Ross McCurdy, which has been learned over time, basically through "the school of hard knocks."

- *The relationship with MDS.* Since MDS became involved 18 months ago, Fenwick is helping them build a network of environmental testing labs across North America. Fenwick represented the first strategic relationship of MDS in its path towards building this network. It is a testament to MDS' confidence in Fenwick that they have designated the Halifax location to play a key role in building a top-line service group across the continent. Techniques developed at Fenwick will be transferred into other labs across North America. The notion of building a network like this "has always been a dream of ours," says Ross. Working with a strong partner towards a common goal makes this a viable possibility. Plans include incorporation of robotic sample handling and an Automated Information Management System into the operations of each player in the network.

Obstacles and Challenges

The path in front of Fenwick is not without challenges. Some of the major ones include:

- *Uneven work flows.* The environmental testing business is quite seasonal by nature (the work reduces significantly in the winter months). In addition, there tend to be flurries of intense activity followed by lulls. These flurries of activity call for a fast and efficient system, since cost is always a big issue. At the same time, overheads have to be kept in line.

- *The role of government in this marketplace.* Ross McCurdy appreciates healthy competition -- it has helped strengthen the company by "forcing us to focus on our mistakes and making us think very smart. It has made us what we are today." However, one big problem lies in the fact that some government-backed laboratories offer similar services, often at considerably lower rates. One such lab, which receives about half its funding from federal and provincial governments,

routinely offers basic services at 20% below what Fenwick charges. These groups do not have to account for overhead costs related to buildings, equipment, or financing. In addition, they are exempt from paying PST. "They don't feel the pressure of the bottom line -- all they have to do is go out there and get another grant." In part, this has provoked the intense focus on adding value and improving efficiency to enable the company to compete elsewhere. But it represents a difficult area, and underscores a view that the attitude towards business here is generally unfriendly. "Many people here tend to think that for every private sector job created, we're taking one away from a government employee." While ACOA has been very helpful to Fenwick, the net effect of government's involvement in the sector is questionable at best.

- *Funding growth*. Despite these challenges, Fenwick has managed to fund about 70% of its R&D and equipment purchases from within. The Department of Economic Development, ACOA and the NRC have been very supportive with the balance. "The only problem is that it takes a long time to make things happen." Banking relationships are no problem. "We have a very cooperative bank," says Ross, "perhaps because we don't need to go to them."

- *Understanding clients and markets better*. Ross McCurdy thinks that Fenwick's prime mistakes have been in the area of client interfacing. "We listen to our clients better now, rather than forcing our ideas on them." Fenwick is bringing together a group of five key people (representing a range of client types) to help them identify shifts in direction that need to be made in serving different clients. The aim is to have most of the company's clients act as advocates.

- *Local services -- strengthening the marketing function*. One of the weaknesses Ross McCurdy identified in the local situation relates to the lack of good marketing capabilities and support here. Fenwick has had bad luck with some market studies performed by the management consulting arms of big accounting firms. In one instance, the result was, effectively "pure trash -- it's as if they filled in the blanks on a form." By contrast, Fenwick has received extremely good advice from a US-based marketing consultant who, through his applied experience in the field, was able to hit the mark again and again for them. "He was worth many times the $1,000 per day that we paid."

Looking to the Future

Fenwick is optimistic about its future. The development of the network with MDS has the possibility of making the Halifax facility into a generator of new ideas, techniques and systems for a large number of facilities. This is a welcome change from the norm; more often than not, innovations reach the region long after they've been implemented elsewhere in North America.

Despite (and perhaps in response to) the various obstacles, Fenwick seems to be finding a way to forge ahead -- by applying a lot of energy and smarts towards the goal of providing outstanding services in a very competitive business arena.

Focal Technologies Inc.

Focal Technologies Inc.

Focal Technologies Inc. is the world leader in the marine slip rings market. The company was established in 1983 to provide services in the application of fibre-optic and electro-optic technologies in marine and other severe environments. In the beginning, Focal was the brainchild of a group of individuals and organizations who saw an opportunity to create high-tech employment for the area. By 1988 an entrepreneur by the name of Graham Smith saw the potential in Focal and became the company's new majority owner, and began manufacturing products under a licensing agreement with the Nova Scotia Research Foundation Corporation (NSRFC).

Since 1988 company sales have grown to over $2.5 million annually from products that are sold worldwide. More than 95% of Focal's sales are derived from outside the Atlantic region, 90% of which are exported out of the country to locations such as the European Community, the US, and Asia. Since inheriting these markets from the NSRFC, Focal has been able to develop them further through customizing its products.

Unlike those manufactured by large US companies, the majority of Focal's products are not for industrial use but are rather targeted at more custom uses. Complementing this strategy to provide customized product is Focal's emphasis on a highly qualified research and development team that uses both in-house and external expertise to keep the company on the cutting edge. Some of Focal's R&D breakthroughs include the introduction of an optical plankton counter, which was invented at the Bedford Institute of Oceanography, and miniaturized fibre-optic rotary joints. By combining these investments in technology with a strong sense of customer needs, Focal has found a market niche for itself.

Focal maintains a staff of 30 -- a result of adding 4-5 employees each year as the business has grown -- and is now outgrowing its location in the Burnside industrial park. From his simple, clutter-free office, Graham Smith speaks proudly of what he and his fellow Nova Scotians have accomplished. Although not all employees have received their training in Nova Scotia, it is where all the employees are from and where all prefer to be.

How the Company Developed

The founders of Focal Technologies were a group consisting of the Ocean Industry Development Office (OIDO), a Dalhousie University professor, and an organization called SEIMAC (an acronym for this small firm's two founding partners). This group had no true product, or any knowledge of the market. They were essentially "solutions looking for problems." The company consisted of seven people whose work in R&D, though very interesting, never really generated any commercial growth. A major portion of the company's funding came from a pool of OIDO funding, provided to develop commercial technology. Things did not look bright in 1988 when the OIDO funding had dried up.

Fortunately, by this time the Nova Scotia Research Foundation Corporation had developed the technology for a marine slip ring, and Graham Smith stepped forward to buy Focal Technologies to manufacture

the slip rings under a licensing agreement with the NSRFC. This product line has gone on to become internationally known as "Nova Scotia Slip Rings," carrying a reputation for top quality and reliability. It includes electrical slip rings, fibre-optic rotary joints, and fluid rotary unions.

Since 1988, Focal has progressively broadened its product family. In 1990, its first three-way hybrid assembly (electrical/fibre/fluid) was delivered to the automotive industry. In 1991, Focal expanded its facilities to accommodate increased production levels. In 1993, single mode and miniaturized fibre-optic rotary joint technology was introduced by Focal. This "fibre-optic" rotary joint family secured the company's current niche in the marketplace.

Developing export markets has not come easily for Focal Technologies. According to Graham Smith, one of the main secrets to the company's success is that they "work like hell." Getting a product to market takes about one year, from the inception of the idea, to refinement of the idea, to creating a prototype, to re-evaluation, and then finally to marketing. Selecting which new markets to penetrate involves a system of opportunity analysis where each market's potential is sized up over a 5-year period, considering the net present value of the cash flows the market is projected to generate.

Expanding Focal's markets has been a combined effort of several people in the company. According to James Snow, Focal's Director of R&D, the company's success is due in large part to its responsiveness. "They're cliches, but we really do go that extra mile, and give 110%. Focal is viewed as a responsible and credible company. We do what we say we're going to do." To demonstrate that they will go "the extra mile," Focal has established a maintenance facility in both Aberdeen, Scotland, and Denmark (through alliances) to counter the perceived distance from its major market, the North Sea basin. In the Fall of 1993, Focal received ISO 9000 certification, as part of its quality assurance program. ISO 9000 certifications are a big selling advantage in Europe, but this competitive tool did not come cheaply. Focal invested approximately $100,000 in appropriate changes in order to ensure compliance with the standard.

Focal is now active in several defence applications of fibre optics, including undersea, shipboard, airborne and land communications. Other recent projects also include a Space Agency contract to evaluate the feasibility of using the interconnection of fibres embedded in advanced composite materials as sensors -- a highly advanced technology dubbed "smart structures".

Key Success Factors

Focal Technologies has been successful for a number of reasons:

- ***Investment in technology***. Focal currently invests roughly 15-20% of total company sales in R&D. This strong emphasis on R&D has provided the company with many technological breakthroughs, the most successful of which was the fibre-optic rotary joint family.

- ***Everyone at Focal has a strong sense of the customer.*** "Everything we do is directed at customer needs," says Graham Smith. As a result, the company is continually sending representatives to trade shows both as exhibitors and as walkers to seek out customers and listen to their needs. Encouraging customer suggestions has improved Focal's ability to be

responsive and deliver what the customer needs. Whether it means servicing their products being used on the North Sea or customizing a product to address the customers special needs, Focal puts the customer in charge.

- ***Signing the slip rings licensing agreement from the Nova Scotia Research Foundation Corporation.*** When the decision was made to obtain the slip ring technology, a critical choice was made. "Entering into this licensing agreement was a very big risk because it was a half-million-dollar agreement. However, we did work out good terms with the NSRFC," said Graham Smith. It was a move that required him to remortgage his house, and one that transformed the company into a true manufacturing operation. Graham notes that licensing the optical plankton counter has also been of great benefit.

- ***Government assistance in both R&D and marketing has been very helpful.*** Government organizations such as ACOA and PEMD have provided financial support and product development help (such as a subsidized computer loan). Graham Smith feels that ACOA were good partners in the early years and enabled them to break even. Assistance at trade shows has allowed Focal to double its marketing activities.

- ***Location in Nova Scotia, Canada.*** When close to 90% of Focal's total sales are derived from export markets it helps that "Canada has a fine image" when it comes to manufacturing high-quality marine products. Nova Scotia has a strong marine background and this association is not lost among Focal's customers throughout the world. Furthermore, the infrastructure in Nova Scotia meets Focal's needs; the company has little problem delivering its products by air.

- ***A pool of high-quality, highly skilled people.*** From technical to support staff, to production and assembly workers, Focal has put together a group of people that are both highly trained and motivated. According to James Snow, if you "put the right people together you can probably be successful in whatever you take on. If fibre optics were to disappear, I think we could survive." For the past several years, Focal has hired the top graduating students from the Institute of Technology campus. An emphasis on teamwork and a consistent attention to positive reinforcement have created a very dedicated and motivated group of assembly workers.

- ***Quality of the products and niche Marketing.*** Focal's $100,000 investment to obtain ISO 9000 certification demonstrates its commitment to quality. Focal's products are not targeted at the industrial markets dominated by manufacturing giants in the US. Instead, the company has carved out a niche in the market through providing high-quality, customized slip rings and its unique fibre-optic rotary joint technology.

- ***Commitment of Management.*** Focal's management is totally committed to doing what it takes to ensure continued success. One of management's programs to improve employee motivation includes a profit-sharing incentive plan. Other commitments on the part of management include supporting employee training or upgrading, and encouraging employees to take part in relevant government-sponsored seminars.

Obstacles and Challenges

The company has faced many challenges in its development to date. Several main obstacles stand out:

- *A short sales backlog resulting in seasonal fluctuations in demand.* This gives Focal some poor quarters without any warning. To counter this negative effect on the company's cash flow, Focal is continually researching ways to diversify the product line to improve stability.

- *Generating sales from Ontario and Quebec.* Selling products to customers in central Canada has been extremely difficult. According to Graham Smith, the attitude of some people in Ontario is that "nothing good could possibly come from the Maritimes. We don't even try to get into Ottawa now. It is a waste of time, even though our products could possibly be used in many military and other applications."

- *Clearing customs.* Getting the company's products through customs red tape has at times been difficult. To address this problem, the company now uses only a few points of entry in the various markets and has improved its awareness of the time constraints that the customs process can entail. Focal also uses brokers on occasion to act as an advocate for the movement of the products during the cross-border process.

- *Obtaining timely, low-cost information from government.* Graham Smith notes that the Trade Commissioners really do not have the type of information Focal needs; this is because the company sells "components," not systems. "The Trade Commission system is really a waste of time and money for us, and has not been particularly useful at all."

- *Less, more efficient government.* Graham Smith, like many people in Canada, is frustrated with too many layers in government. He took taxation as an example. "Simpler and less taxation. The provincial tax people can't even tell us if we need to pay taxes on a computer that will be used in our production. It's difficult to figure the whole thing out when the tax people can't even understand it."

- *Remoteness from suppliers.* There is only a very small base of local suppliers, and the local suppliers that Focal must draw on sometimes lack the commitment and attitude they are looking for. This is important because Focal is producing a quality product and needs quality supplies to make the products. Hence the company is accustomed to working actively with chosen suppliers to help develop their capabilities.

- *Perceived distance to markets.* To address this obstacle, Focal established its maintenance facilities in Aberdeen, Scotland, and Denmark. These facilities were developed through the use of alliances to address the perceived distance to the major markets. Together with representatives in many countries, this gives the company a presence in the area. Focal will need to pay consistent attention to this perceived logistical obstacle.

Looking to the Future

Focal's success and reputation have in large part been based on the responsiveness of its people to customer needs. A total commitment to a high standard of quality

in products and services has led the company to profitability in a very short period of time.

The future holds many opportunities for Focal. New products are continually being generated by an R&D department that receives a considerable amount of financial and management support. New markets are also regularly being unearthed, as management combs the coastlines of the world looking for new market opportunities.

With its proven expertise in fibre-optic technology and its eyes and ears attuned to customer needs, Focal Technologies expects to continue to experience healthy growth and expanding markets for its products.

Metals Economics Group

Metals Economics Group

Metals Economics Group is one of the leading providers of high-level information for the worldwide nonferrous mining industry. The company has built a reputation in the mining industry for high-quality, accurate, insightful and readable analysis and reports. Recently, MEG has expanded and improved its on-line database service, which has become the industry standard for real-time, up-to-date information on the status of significant mining projects throughout the world.

Metals Economics Group relocated to Halifax from Colorado in 1988. They are unique in this respect among the firms in this study. MEG also received no financial incentives to move to Nova Scotia; lifestyle concerns were considerable in the company's decision to move. The company moved here because the principals are associated with the large Shambhala/ Buddhist community in Halifax.

MEG found it difficult to negotiate the different levels of government in order to move to Nova Scotia. Company president Michael Chender notes that if he had not been personally motivated to move the company here, the attitudes in government that he encountered would have caused him to choose another location.

Virtually all the company's revenues are derived from outside the Atlantic Region. Currently, about 44% of MEG's sales are to the US, 21% to the rest of Canada and the balance to the rest of the world.

MEG is located in the Canada Trust building in Halifax in newly finished office space. The building was chosen for its location and amenities, especially air quality because the company noticed a decrease in productivity in its previous location due to poor ventilation. The offices are a mixture of private spaces and low cubicles. The office is quiet, filled with file cabinets, reference materials and reports and has a "think tank" atmosphere.

How the Company Developed

Michael Chender's father, Jules Chender -- a senior trader at a large New York metals trading house -- was a well-known figure in the mining industry; this had helped Michael gain the respect of people in the industry when he first worked in the business in New York in the early 1970s. Michael started Metals Economics Group itself in Boulder, Colorado in 1981.

In the beginning, the company had just two employees, Michael Chender and Dominique Di Gesu, now Chief Operating Officer. MEG started by publishing one newsletter. Later, a database on mineral projects was started. That database is the ancestor of the current on-line system available for subscription.

MEG built on the experience of the initial newsletter, expanding into studies on specific mining trends, minerals and mining operations. The company started and continues to do a great deal of research and fact-checking on metals exploration, development and production, acquisition and minerals markets.

The company used "a common sense approach" to deciding how the company should develop. There wasn't an overall grand strategy that MEG followed each

step of the way. Dominique Di Gesu notes that "there were a lot of failures. Sometimes we completely misread the market and a study did not sell." Michael Chender adds, "Sometimes we are just a few years ahead of the market."

Michael Chender says, "Our whole company is based on innovation. We have created everything that we do -- created new markets rather than competing in existing markets. For example, in 1982 we were the first people to do an on-line database. All the studies we've done have been responding to what we saw as needs that no one else was filling." Dominique Di Gesu points out: "Lots of people copy us, our advertising, our study topics, our writing style."

The company developed and maintained excellent relations with most major mining companies. These relationships and a comprehensive mines information database provide the raw material for all of MEG's studies and individual client consulting work.

Since moving to Nova Scotia, MEG has been trying to maintain market share and grow despite an industry-wide global recession. The company sees a need to focus on single client work, which is much more lucrative, and to find new markets. MEG has done extensive research into China's mining industry. "We have the potential to become the experts for Chinese mining industry information, if we can properly exploit the advantage we currently have."

In addition, Michael Chender has created a sister company, Eastern Resource Capital, to focus on single-client work and other opportunities. MEG can provide research expertise to Eastern Resource Capital. ERC primarily exports its services to the US.

Key Success Factors

Michael Chender and Dominique Di Gesu both see tremendous opportunities in the market that MEG is not yet addressing; they therefore hesitate to call MEG a complete success, despite its longevity and ability to retain market share during the recent recession. Various factors have made MEG stand out from the competition:

- ***Intelligent analysis with attention to detail and accuracy.*** Mining companies rely on MEG's reports for accuracy and the ability to get to the heart of the important issues. Each member of the MEG staff that we spoke with reiterated the company's commitment to accuracy and insightful analysis.

- ***Insight into underlying themes, trends, and issues in the industry, clearly presented.*** Without insight, the data is not worth the paper it is printed on. MEG adds value to the data by sifting it for relevant issues and writing about the salient points in clear, understandable language and an easy-to-use format.

- ***Personal connections in the industry*** have been very helpful. Michael Chender has achieved recognition in the industry over a period of many years. Because of this, he is in a position to listen to the market, predict market needs and identify products which the company can provide for the industry.

- ***By virtue of the trust that has been earned over many years, MEG has access to information that is not available elsewhere.*** "We take confidentiality very seriously. For example, if saying three mining companies are involved in such and such an endeavor would inadvertently reveal their identities to a knowledge-

able reader, we don't include the information in that form."

- ***Personal energy of the entrepreneur and the right associates.*** Michael Chender clearly has great interest in the industry and is the creative force behind the company's development. Many of the new product ideas have originated with him, arising from personal meetings with members of the industry, company visits, or his own business experience. Dominique Di Gesu has been active in the hands-on management of the company, and has also more recently become involved in new product development. During a period of over 15 years, Michael and Dominique have established an excellent working relationship, each focusing on their respective areas of strength. Both say that without the other, MEG would not be where it is today.

- ***Being in the right place at the right time.*** Michael Chender correctly anticipated the mining acquisitions boom of the late 80s. Consequently, "MEG acted early and led the market in producing very successful studies addressing the acquisition boom." Being in constant personal contact with mining company key employees and industry trends has been essential in MEG's decisions to enter untried market segments.

- ***Anticipating market demand.*** "We are responding to customers, but that's not exactly how we get all the ideas. We try to be one step ahead of the customers. Often we provide something that the customers never thought of and when they see it, they discover it's something they needed. We are always looking for what will appeal across a broad spectrum," says Michael Chender. If MEG relied purely on asking people about ideas, they could find themselves out of step with the market. A study takes 3-9 months to complete. But according to Michael, "The mining business shifts so fast and very much operates on a herd mentality, so the herd goes off in a different direction in each year -- and those changes often take place before the new study comes out. Consequently, the study, which was in demand a few months before, is no longer wanted."

- ***Moving to Nova Scotia fulfilled life-style needs for the principals and key employees.*** While MEG encounters a number of obstacles to doing business here, the quality of life has been an important factor in employee satisfaction. "Families feel that this is a better and safer place to raise children. The pace of life is very sane. It is shocking how pleasant the people can be here. Every day you have a pleasant exchange in business situations."

Obstacles and Challenges

MEG experienced a number of obstacles and challenges specifically related to the company's move to Nova Scotia. Dominique Di Gesu was quite specific and fluent when discussing each of these problems:

- ***Client perception that Nova Scotia is a backwater.*** "Clients ask 'what on earth are you doing there?' We aren't sure if this perception hurts our image or not." MEG generally explains that, as a research and consulting firm they do not need to be in a mining center. Once quality of life is cited, many of the clients understand.

- ***Expense of living and working in Nova Scotia.*** "Initially, this was very shocking -- we seem to be getting used

to it now. Taxes are so much higher, especially from the staff's point of view. The salaries that we pay don't go as far here because of the tax burden. This makes it difficult to pay people well."

- ***High communication costs.*** "Most of our research is done by phone and we found that our phone costs doubled after the move to Nova Scotia. We now use *Airways*, which has brought costs down to a more reasonable level."

- ***Airfares doubled.*** "In Colorado, we were centrally located and could go to prospective client sites cheaply. Connections are difficult from Halifax and extremely expensive. The cost of airfare limits our access to the marketplace. For example, flying to Toronto for a meeting at the last minute is prohibitive. It was cheaper to fly to Toronto from Denver than it is to fly to Toronto from Halifax."

- ***Taking trips to client sites and trade shows is difficult -- both due to cost and time.*** "It isn't just the cost of airfare. The time involved is an important cost. Making connections from Halifax adds to the cost. A trip to Denver is a two-day trip. If you ask employees to make the trip in one day (which is just barely possible), we pay the costs in reduced employee effectiveness. If the employee stays overnight somewhere to break up the trip, we incur additional costs."

- ***Finding supplies of every type is very hard.*** "There is much less choice of quality supplies here. Often there is a several week delay because supplies must be ordered from Toronto or Montreal. For example, ordering computers was a horrific experience. There was virtually no selection locally. We just wanted to look at a variety of equipment. In fact, we almost sent someone to Toronto on a shopping expedition. Eventually, we found a local supplier and everything turned out all right, but we spent a lot of time on this project that could have been used to produce products."

- ***Finding quality support services, especially printers, is a constant battle.*** "Printing companies!!! Getting things printed correctly is very difficult. This applies to everything -- binding, quality of paper, inks, design. The printers try but they can't pull off quality work. In fact, it is difficult for many of them to recognize quality work." MEG has its printing of covers and spines for its reports done out of the region and then has the finished work shipped back to Halifax. Often, there are problems. "One study was ready for delivery to customers, but the spines for the study didn't arrive for 10 days, so the study was delayed." The printing problem has become so critical that MEG has considered doing its own in-house printing.

- ***Slowness of mail and much higher shipping costs than in the US.*** MEG finds the mail service in Canada to be much slower than in the US, for incoming and outgoing correspondence and documents both within Canada and across the border. It is vital that MEG's material reaches clients quickly; as a consequence of the slow, unreliable postal service, the company has had to rely on couriers much more frequently than before the move to Canada. This makes for much higher costs in communicating with and shipping to customers.

Looking to the Future

Michael Chender and Dominique De Gesu both stress the need for continued contact with the industry and the markets through travel, client visits, ongoing research and trade conventions. "We see a lot more potential out there for studies and single-client work, and we are pursuing this."

"We need to evaluate new markets, both for research and study development as well as sales potential. For example, we find Japan impossible to sell to, as do many of our competitors. We just can't quite break into the market due to the Japanese way of doing business. It would be very helpful to have some seminars or expert instruction on how to do business in countries new to us."

Evaluating and learning to operate in new markets as creatively as they have in their existing markets is MEG's biggest challenge.

Prograph International

Prograph International

Prograph International started as a small consulting company, TGS Systems, in 1983. Phil Cox and Tomek Pietrzykowski, were doing research in using picture icons as a way to develop computer programs. The company has expanded to include 45 employees and generates over $2 million in sales revenues. Virtually all of the company's products are sold outside the region: 4% is exported to locations within Canada, 80% to the US, about 6% each to EC countries and Japan, and the balance to Australia.

That initial research led to the development of a commercial software product, Prograph, which allows programmers to complete software development without using textual code. Working with Prograph offers programmers tremendous time and cost savings when developing software, whether for in-house or commercial use.

Prograph is recognized as an industry leader in the field of visual programming. The technology has been well-recognized for its innovation and cutting edge application of new concepts. Prograph products have won the *MacUser* magazine Eddy award, (an important industry award for exceptional Macintosh products) twice. The company competes with large software firms from around the world.

Making a transition from its start in pure research to its commercial product has been difficult for Prograph. Development of new software tools of this type is very labor-intensive and costly. The company has had many difficulties in bringing the product to market, attaining sales and profitability projections, and developing a management style and internal resources that foster long-term growth.

Prograph International (a recent name change from TGS Systems) has two main offices. The company headquarters, located in Armdale, is home to most of the programming team. The company also maintains a sales and marketing operation in San Francisco, near the Silicon Valley, the heart of the computer and software industry in the US.

The offices just off the Armdale Rotary near Halifax's Northwest Arm are spacious and pleasant, especially by software industry standards. It is a very busy environment, with most staff members glued to their computers or involved in design and planning for the next versions of Prograph and related products.

How the Company Developed

Phil Cox and Tomek Pietrzykowski, now both professors at TUNS, were involved in research on the theoretical feasibility of using icons as a way to develop computer programs. This was prior to the introduction of the Macintosh's graphical user interface and the subsequent products built on the principles of GUI's, such as Windows. Neither of the professors expected any commercial application to result from their research -- at least not at that time.

Once the Macintosh computer appeared on the scene, it became evident that their theoretical concept might have a practical application. The advent of the Mac

platform provided a major breakthrough for TGS Systems.

At this point, the founders decided to pursue a commercial application. Continuing research was a priority and they received an NRC grant worth about $30,000, which allowed them to hire one full-time and one half-time programmer. Work on a commercial prototype began.

In 1987, the founders brought in another person to assist with the company and especially with financial support. Unfortunately, this partnership fell through, and the founders were left holding the bag. The Department of Development assisted with a series of grants that kept research going.

In 1988, the company hired Jeff Waltcher, an individual with venture capital experience at a New York firm, who took on management responsibilities.

In 1989, the first version of Prograph was released. That product won the *MacUser* Eddy, Best Program award. The founders thought that this would make the product an instant success, but that wasn't the case. "An interesting lesson came out of this award. We thought that winning the award, and the recognition that went with it, would solve all our problems. It didn't."

The second version of the product was released in 1991 and followed in 1992 with a third version of the product. At this point, Ralph Barhydt, an American software marketing executive, was brought on board with a mission to increase sales.

While sales did increase, Ralph Barhydt found it increasingly difficult to obtain needed venture capital. In anticipation of venture capital investment, Prograph International embarked on a rapid expansion program, growing from about 20 employees in 1991 to 45 in 1993. Revenue grew to about $2 million.

There have been some internal changes at the company, as a result of trying to find the correct balance of people, the appropriate management style and a strategy for raising venture capital while increasing sales. The company has undergone some difficult downsizing at various times and, in a recent move, Ralph Barhydt left the company.

Phil Cox and Jeff Waltcher have taken on the CEO and COO responsibilities. Meanwhile, Prograph continues to be recognized as a superior product in the marketplace and the company is shifting its focus to address the needs of the higher-end corporate market.

Key Success Factors

While Prograph International is not yet meeting its profit objectives, and is at a very vulnerable point in its relationship to the market, the company has done many things right. The software business is extremely competitive; despite this competitive environment and the size of the competition, Prograph International has managed to turn a very innovative idea based on pure research into a viable commercial product. Several factors have enabled the company to do this:

- ***An innovative product.*** Prior to the introduction of the Macintosh platform, the use of icons for programming computers seemed like something that would have to wait until the twenty-first century. In 1984, when Apple brought on line a lower cost and more powerful machine which could house the Prograph prototype, the founders rapidly took advantage of the development to refine their product.

- *Money received from the National Research Council, the Department of Development and ACOA were essential.* Without financial assistance, Prograph could not have afforded the funds it required to further research the concept and bring it to a market-ready state. "The financial assistance we received from government was essential to our survival; we were unable to get sufficient financial backing from private sources."

- *Prograph International's decision to set up a sales and marketing department in the US.* Prograph's market did not exist in Canada and getting the product to its customers was difficult from a Nova Scotia base. The sales office employees directly interface with the US market. This split in the Prograph operation has allowed Prograph to have a strong presence in San Francisco, one of the information hubs of the US, while allowing the company to remain on its home turf to enjoy the special quality of life that Nova Scotia has to offer.

- *Product quality, innovation and customer service are aspects presently found in the internal operation of Prograph.* "Although this is not a tangible thing, I believe that the internal spirit of the company is innovative and very important." says Phil Cox. "Our team adds a personal internal service born out of an interest and passion towards the product, which adds to the quality and innovative aspect of our company." The management style presently adopted at Prograph is one of taking an interest in the people who work with the company. Phil Cox believes this is very important. "I have a history with most of these people and therefore it allows us to be able to work together and get the most out of each others' knowledge."

- *"We have a good supply of people with the necessary skills and knowledge to keep us competitive."* Most of the company's staff is from Nova Scotia, and those that are not enjoy living here. Phil Cox thinks that Halifax is wonderful in terms of the technical skill level of the population.

Obstacles and Challenges

Prograph International has encountered numerous obstacles. Some, such as the difficulties of marketing solely from a Nova Scotia location, it has overcome. Others remain in place and are on-going challenges for the company:

- *Securing venture capital financing.* "Most of the venture capital available, especially for software development, is in the US. The border is a deterrent. Venture capitalists have never heard of this far off and exotic place called Nova Scotia. The small amount of venture capital that does exist in Canada is from central Canada and they have a negative attitude about the Maritimes as a location for business investment."

- *Finding capital is a continual challenge for the software industry.* Banks provide little in the way of money; intellectual property, most software companies' main asset, is not viewed as security. The location only exacerbates the difficulties inherent in finding investment capital in this industry.

- *The school of hard knocks is teaching Prograph about how to focus its efforts most effectively.* "We changed our market focus to the corporate market, which was the right thing to do," reflects Phil Cox. "But at the same time, we left a gap at the low end of our market, which was the wrong thing to

do. We will be filling that gap. In the course of these changes, we lost some of our development focus, by trying to take on too many development projects at once. We are in the process of fixing that now."

- *The outdated mind set of both the banks and the government is a difficult challenge to overcome.* The software industry is based on intellectual property -- a concept inadequately understood by governments and banks alike. These institutions do not have systems in place to deal with the industry. "Government proclaims that it is motivated to get the high-tech industry up and running, but they don't have the systems to provide for it. None of the assistance is geared to software. We don't even think about banks, because in a sense they are of the same mind set as government -- a bit more hard line even, they only deal with tangible assets."

Looking to the Future

Prograph is starting to fulfill its vision of the future by planning new ventures and expanding to new platforms. The company is identifying and building vertical market tool sets among other new products. Prograph has plans to secure a Japanese distributor and to expand further along the Pacific Rim, including New Zealand and Australia. By expanding their market place, Prograph foresees doubling revenues in two years and repeating that rate of growth in the next five years.

When asked about the look of the company when it is *truly* successful, Phil Cox envisions it to be around a 100 people and possibly having operations in other locations, such as Boston or Texas. "We might even have offices around the world," says Phil. "Of course, all this would have to be done while still maintaining a pleasant working environment for our people, who would maintain their present loyalties and hopefully give us long term commitments. The timing has to be right for growth this time."

Salter Street Films

Salter Street Films

Salter Street Films was started in the late 1970s by two brothers, Michael and Paul Donovan. The company is perhaps best known locally for its successful television show, *Codco* and its current political satire, *This Hour Has 22 Minutes*. The company has also produced many successful films, especially for the European film market. Salter Street is constantly on the lookout for projects that have creative excitement, and in addition to its film and TV productions, the company is currently working on a project for cable television.

Salter Street has successfully operated a business in an intensely creative and competitive industry -- far from the industry centres -- for more than 15 years. So why, people ask, does a film company operate from Halifax? Because they are determined to be here. Michael and Paul Donovan grew up here and they like it here -- they like the culture, the people and the quality of life. From the Donovan brothers' point of view, if you can live in a mid-size city with a reasonable artistic life, at relatively low cost and without the stresses of big city life, why not do so?

"This is a 100% export business," says Michael. "Exporting is what you need to do to get work in the first place." Accordingly, he understands the need to work with sponsors and sources of financing in Toronto, LA, New York, Vancouver, or wherever. He makes it his business to know the ropes in any field in which he is working. This is what is required in order to be successful in this industry.

In the current cable TV project, for example, Salter Street engaged the services of at least one consultant familiar with the industry in order to make the right contacts -- and in this business, contacts, and knowing how to use them, is the name of the game. It's a high-energy, intense, political process. It requires developing contacts over a long period of time, being creative in working with them, and delivering high-quality productions.

Salter Street operates from a renovated heritage property on Brunswick Street, near the Halifax side of the MacDonald Bridge. A dedicated staff operates the sound production facilities located here (which are used in third-party commercials and films as well as Salter Street's own projects). The building also houses Salter Street's offices and meeting rooms. The company makes extensive use of CBC's facilities on Bell Road for its television work.

How the Company Developed

Paul Donovan had been at film school in England in 1976-78. Michael, meanwhile, had trained as a lawyer at Dalhousie and soon decided that conventional law practice was not for him. When Paul returned to Halifax from England, the two brothers decided to start a film company. Michael is the producer -- the business partner in the mix, while Paul is the film director.

At that time, there were very attractive tax shelters for film investments in Canada -- investors more or less made money regardless of the success or failure of the project. Michael raised $400,000 in tax shelter money for their first movie venture, which he describes as a creative failure. "We learned that we didn't know what we

were doing; going to film school does not mean that you know how to make movies."

Michael went to Europe to try to sell this first film, covering the trip costs through a small daily allowance provided by a government program. These government-financed trips gave him his education on what would sell in the European market -- he discovered a demand for English language "B" movies with a "working class" appeal. Salter Street proceeded to get into the business of making films for this market, raising money through the Canadian tax shelter route and selling the movies at a good profit. For example, they made the movie *Siege* for $250,000 and sold it for about $1 million. During these early stages, the company produced movies, and then sold them market by market, generating healthy returns for their investors, although at that stage they never made much for the company itself.

A watershed in the Canadian movie financing scene came in September, 1981, when the tax shelter rules were changed, which sent the whole industry into the ditch. Salter Street was in the process of raising money for a movie at the time and was having difficulty lining up the last $50,000. A local businessman came through with the investment they needed and has been a trusted confidante, colleague and supporter ever since. Michael tells hair-raising stories of the horrors of trying to get interim financing from Canadian banks -- even with letters of credit from the investors, no bank would touch them.

Salter Street started doing TV productions in the mid-1980s, basically in response to the difficult movie financing situation at the time. Salter Street's first foray into TV work was through a local musical variety show in 1985; that led to discovering the acting talent in St. John's, Newfoundland, which in turn led to the *Codco* show, and subsequently to the current (very successful) political satire *This Hour has 22 Minutes*.

This Hour has 22 Minutes was an important development after *Codco*. This show, a critically successful political satire, was developed when Salter Street was looking for a program that could replace *Codco*, then in its 5th year.

Michael has also made various forays into cable-related projects and in 1992 he identified a niche for a cable TV presentation of first-run movies (basically, trailers for cable viewers), to be combined with information from local movie theaters concerning where and when they are showing. He had hoped to do this "Popcorn Channel" in Nova Scotia, but due to the pull of the industry, which is largely driven from the US, this project is now being developed in New York, with financing from a Toronto media firm, and with Salter Street playing a lead role in its development.

Key Success Factors

Salter Street's success was initiated by the drive and determination of both Michael and Paul Donovan. They have worked hard to bring together dedicated teams to make both the film and TV productions the company has put together, and developed an enviable reputation in the process. Some of the main success factors include:

- ***A formidable sense of will, determination and commitment to get things to happen.*** Michael says that, essentially, things happen because he *decides they are going to.* In describing the current cable venture he is working on, he tells the story of how one naysayer was questioning the viability of the project, asking why he thought a particularly

difficult aspect of the project could be pulled off. "Because I've decided that it's going to happen, that's why" was Michael's response. He says that you can only get something done "if you truly *decide* to do it" -- especially when the obstacles appear so huge.

- *Finding the necessary financing sources.* Each project requires its own financing. This hinges on selling creative ideas, along with investors' confidence in Salter Street's ability to pull off the production successfully. Obviously, Salter Street has done a pretty good job at this selling process. This is an intensely creative industry, and a very competitive one. Competitors, in the usual business sense, consist of other companies bidding for broadcaster money or other investment dollars.

- *Willingness to try new directions.* There are several points at which Salter Street went in new directions. One was the entrance into TV work in the mid 1980s, primarily as a result of needing to get into areas not dependent on tax shelter financing. This involved learning the ropes about a whole new part of the industry -- including the financing mechanisms within the broadcast environment, with all the associated competition and rivalry, as well as sculpting the various skills required to put a production together.

- *The financing environment in Canada.* "Not one job would exist in this industry without the smart subsidies that exist," in Michael's assessment. He sees government involvement as an essential way to reduce net costs of production. He estimates that 20-40% of total costs are offset by various subsidies. He sees this as the "Canadian way" of helping to develop an industry. In Toronto alone, there are 24,000 jobs in the film production business, at least half of which are on US productions -- largely because of subtle kinds of subsidy that have been established in Canada.

- *Some excellent talent in Nova Scotia (much of it nurtured by Salter Street).* Most of the local talent is people who have specifically chosen to be here -- either they originally came out of school here (e.g., NSCAD); they got their start here (often with Salter Street) and want to stay on; or they went to Toronto and then decided to come back. Salter Street has built up an extensive pool of talent -- highly skilled people who have worked with major directors on a variety of projects over the years. For example, the recognized #1 grip (the person who handles camera movements) in Canada lives in Queen's county. He could get any amount of work anywhere in the continent, but chooses to live here and work when he wants to -- often on Salter Street projects.

- *The quality of Newfoundland actors.* Michael Donovan notes that part of the pool of people available to the industry in the region includes the highly talented actors in Newfoundland. "Out of, say, a hundred actors in Newfoundland," he says, "60 are brilliant. In LA, you have a pool of 40,000 actors, but only 400 are any good." Salter Street has found this acting pool to be unusually creative, and this has played an important role in enabling the company to work from here, especially on the TV side.

Obstacles and Challenges

The company encounters a number of obstacles to doing business from Nova Scotia. Some of these include:

- *Shortage of top-flight management, and the consequent inability to seize all the available opportunities.* Michael Donovan sees these two issues as being intimately related. Salter Street is trying to do lots of things at once: produce the TV series; begin the cable project; start its own distribution company; and produce films. The company cannot undertake all the projects it would like to without expanding and strengthening its own management base. There is a certain amount of tried-and-true management backup already within the company, but this needs to be developed further at the key decision-maker level.

- *Chronic capital shortages.* Michael is considering raising a substantial amount of capital in a private placement in return for a significant (but not controlling) interest in Salter Street, which he believes is do-able now -- but the window of opportunity to do this may not last. However, the lack of management depth within the company means that Michael's time is very stretched; he can't do it all.

- *Location.* Basically, as Michael says, "this is a stupid business to do from here." You don't have the day-to-day industry contacts; you don't have access to the talent pool available in major centres; you don't have the supporting services; it's hard to get money. It is more expensive to do business from here than in a major centre. Everything costs more -- and there is a shortage of supporting firms.

- ***Michael notes that the work habits of Haligonians are generally out of sync with the general tone of his industry*** -- basically, people here like to go home early. "On a Friday afternoon in the summer, the rush hour past our offices on Brunswick Street is over by 3:30." Michael adds that "people in Toronto work until 6 pm; in LA, they work 24 hours a day." At the same time, Michael feels Maritimers are hard-working, exceedingly honest, and loyal.

Looking to the Future

Salter Street generates 30-40% of its revenues from selling into English language markets around the world. *Codco* was also sold in Germany. The company mainly contracts the distribution of its films to independent distributors. However, Salter Street is in the process of setting up its own distribution company (either in England or Ireland). The idea is to do all the distribution management from this new location (because of proximity to the European markets), while maintaining a light-handed management overview from Halifax.

The Donovans' pre-eminent goal is to "make movies of lasting value." This is clearly a tall order. The film business demands that you constantly come up with creative new ideas. To make that more possible, Michael will also continue to seek ways to develop steady income earners for the company -- such as the "Popcorn Channel" project. As ever, this energetic team is determined to make it so.

Tri-Star Industries Limited

Tri-Star Industries Limited

Tri-Star Industries Limited, located in Yarmouth, is a manufacturer of custom, high-quality ambulances. The vehicles are known worldwide for their exceptional design and Tri-Star is able to compete with major automobile manufacturers such as General Motors on the basis of its ability to respond to very specific customer requirements. The company exports to over 25 countries.

Tri-Star has been in operation for over twenty years; the company has annual revenues of over $5 million and employs some 45 people. Tri-Star has won the Nova Scotia Government's Export Achievement Award for outstanding export marketing and promotion four times.

The company has invested a great deal of resources in its design and manufacturing facilities, including modern CAD/CAM facilities, in-house engineering and publishing as well as a Quality Assurance program working towards ISO 9002 qualification.

At one time, Tri-Star viewed itself as a domestic company that occasionally did some export business. Now that has completely turned around. According to company president Keith Condon, "We are now a company that deals primarily in exporting and do a bit of domestic business. This has made a big difference in how we approach our business."

The company's 50,000 square foot facility in Yarmouth includes both manufacturing and office space and is modern and well-appointed.

How the Company Developed

Prior to 1991, Tri-Star was part of a large group of companies, the MM Group. In 1991, Tri-Star separated from the original company and Keith Condon, Tri-Star's president, along with Mitch Bonnar, became sole owners.

In earlier years, the company had a "shot gun approach" to doing business. The company had achieved a reputation for quality work and service; however, it was not focused on its core strength -- making ambulances. Instead, the company did bits and pieces of everything.

Tri-Star now focuses most of its attention on its core business, creating custom ambulances. The company utilizes support services wherever possible, but has been forced to do some things in-house because of lack of available suppliers. For example, Tri-Star was unable to find a local business to adequately handle its commercial graphics needs. The company created an in-house commercial graphics unit which serves Tri-Star about one-half of the time; other local companies make use of the unit's services as well, which makes it a small profit centre.

The company has learned from early export experiences and is now attempting to focus on repeat business. "The shot gun approach has, at times, been expensive for us. It is also time consuming. Sometimes relationships come naturally and they tend to happen in a relatively short time frame -- maybe six months. Others take much longer. Now we are trying to focus our energies on repeat business so we are not always working on something new and so

we can take advantage of the hard work that we have already done."

Key Success Factors

Keith Condon is clearly one of the driving forces behind the success of this business. Changing the focus of an existing company required a great deal of effort. Some of the factors contributing to Tri-Star's success have been:

- *Focus on its chosen markets.* "There is no such thing as dabbling in the export market; it is important to do the best job possible." The way a company approaches its market often determines the success it will enjoy in the international sphere. Tri-Star is presently enjoying the fruits of its approach, mainly due to a shift in its business philosophy; the company now considers itself first and foremost an international export company. "Our picture of business is definitely global."

- *Tri-Star has captured the custom ambulance market by providing a quality, customized product.* "We customize and we solve problems for people. We are happy to customize 1 or 100 units for our customers until they are happy with the end results." Before the final sale is complete, Tri-Star invites its customers to visit the Yarmouth factory to inspect the finished product. Any changes or additions that the customer requires are made before the final papers are signed. "This assures us that the unit is exactly what our customer wants. This is the way we approach our business and we do it well."

- *Good distribution networks play a key role in the company's international success.* A good worldwide reputation is necessary when a company is doing business in many countries. Tri-Star attributes its worldwide success to the good distribution networks -- partnerships as they prefer to call them. "Before I agree to a partnership with a distribution agency I ask for three things:

  (1) Someone who is genuinely interested in our product -- ideally someone who wants to sell our product exclusively;

  (2) That the distributor must use the Tri-Star trademark -- this makes our name well established all over the world; and

  (3) That the distributor considers starting a company called Tri-Star."

- *The role of local firms plays a large part in providing some of the necessary skills required by Tri-Star.* The service providers they use are in general well-rounded, although at times it has proven difficult to secure the right kind of people to provide the service. "We look for people who are all consumed with developing a quality product or providing quality work. Sometimes this is hard to find; however, once we find this mix, the relationship works well and is generally secure." Tri-Star uses local services to do all the fibreglass molding and metal works. "These suppliers are excellent in their fields and this is important to us. It makes the relationship work." If Tri-Star cannot find the quality that the company wants, they often do the work in-house.

- *Entrepreneurial Drive.* Much of the business generated over the years by Tri-Star has been attributed to the drive and hard work of Keith Condon

himself. Those who work closest to Keith have described him as "the driving force behind the business." Keith never lets anything stand in his way. If he thinks the company can do something, the rest of the workers help him to make it happen. "He approaches everything he wants to see done as if it is going to happen," said one employee. Others in the company have said, "We probably work harder than other company workers because we make a point of getting things done, even if we have never done them before. We must work hard to keep on top of things." Keith concedes that there can be occasional drawbacks to a strong entrepreneurial style. Tri-Star's management style "tends to be autocratic because we are small. As a perfectionist, I also like to keep track of things so they are done in a certain way. We are trying to become more participatory, however."

Obstacles and Challenges

Tri-Star has faced difficulties in moving the business to its current status as a high-quality, customer-service oriented organization:

- *Focusing company efforts on the product they produce best and filling the demands of their market sector has been a difficult change of focus.* Initially, the company would do anything for the sake of securing on-going production activity. "This was very exciting at times, but it was also hard and an expensive way to do business." Instead of merely reacting to the peaks and valleys that have hindered the company in the past, Tri-Star is now working towards more repeat business, and expanding on established markets. "Before we approach a new market now, we make sure that we know where we are headed and what we want to achieve."

- *Doing business across provincial borders within Canada.* Trade barriers have posed difficulties to many companies dealing with overseas customers, but governments everywhere are trying to secure easier and fairer trade practices to encourage international business. However, Tri-Stars' main obstacles are not so much in entering the markets of other countries, but rather in trying to do business across provincial borders within Canada. "It is virtually impossible, for example, for Nova Scotia firms such as ours to get in to the Quebec market."

- *International competition for ambulances is difficult; however, it is not as difficult as the Nova Scotia market is for a quality-oriented firm.* Tri-Star prides itself on developing a quality ambulance and has spent much time, money and effort in striving to meet quality assurance guidelines. "The hardest markets to get into are those in our own province." Nova Scotia has no regulatory standards for the specifications of ambulances, so Tri-Star competes with people who are building ambulances in their back yards as cheaply as possible. As a result, individual contractors can secure these Nova Scotia contracts, which are generally awarded to the lowest bidder. "If Tri-Star wants to compete in the local market, we have to lower our standards, but I refuse to do this," comments Keith Condon. This is a big obstacle for Tri-Star to overcome, yet they are hopeful that future policies will change the approach that has been taken in the past.

Looking to the Future

In terms of new ventures, Tri-Star would like to have a major role in the Atlantic Canadian market. There is presently a Health Care Initiative taking place, which includes a plan for full ambulance care. It includes training, personnel, and vehicles. "I would like us to be instrumental in this," says Keith. "I could help make this initiative successful and it would allow me to use the concept as a model to sell to other countries." For example, Mexican customers are looking to adopt a similar concept. They are looking for a package that includes ambulances, training, and good-quality equipment.

In addition to the Atlantic market, Keith regards the "sky to be the limit" for the company's future growth in the world market. Tri-Star's key goal is to focus on a consistent market approach and to build repeat business in global markets.

The Larger Companies

Following are profiles of the larger companies included in the project -- those with over 50 employees.

Acadian Seaplants Limited

Diagnostic Chemicals Limited

Efamol Research Inc.

GN Plastics Company Limited

Jacques Whitford and Associates

Nautical Electronic Laboratories Limited (Nautel)

Sarsfield Foods Limited

Acadian Seaplants Limited

Acadian Seaplants Limited

Acadian Seaplants Limited is the largest independent manufacturer of seaweed products in North America. The company operates three plants in Nova Scotia and one in PEI manufacturing a variety of value-added products used as food additives, in fertilizers, in animal feed, and in the brewing process. Since being bought by its founder, Louis Deveau, from the former US parent company in 1981, Acadian has diversified from being a supplier of one low-margin product to a single customer into a constant innovator with five product lines serving over 200 customers in 30 countries. More than 95% of the company's production is exported outside Canada.

By taking a vigorous and pro-active approach to developing new products, Louis Deveau has initiated extensive collaborations with many of the institutions of higher learning in the region. These technical collaborations led to a series of unique products that have found favor with customers in many industries. In addition to turning seaweed into ingredients used in other products, Acadian now also cultivates specialty seaweeds, which, after careful processing for texture and color, are sold for direct human consumption.

Louis Deveau, who grew up in an Acadian community on Nova Scotia's French Shore, talks enthusiastically about the history and potential of the business, which he obviously enjoys running. The company is headquartered in an attractive new two-storey building in Burnside, where a staff of 14 conducts the company's marketing, selling and R&D activities in addition to administration. Large, beautiful photographs of seaweed are hung on the walls of the pleasant offices. The firm has a full-time staff of 35, which increases to 100 during the busy production season. Two people work for the company out of the US. In addition, Acadian provides a part-time living to over 1,000 independent seaweed harvesters, who gather raw material in the June-October harvesting period.

How the Company Developed

In the early 1960s, a company called Marine Colloids was established in Nova Scotia to harvest and process Irish moss, used in the manufacture of carrageenan, a food additive used to enhance the viscosity of ice cream, puddings, and other foods. After five years with the federal government in Ottawa, Louis Deveau returned to Nova Scotia in the late 1960s to work for the company, eventually becoming its general manager.

Marine Colloids was owned by a US company based in Maine, which, after going public in the mid-1970s, was eventually sold to FMC Corporation, a US conglomerate. For 14 years, Louis Deveau thereby had the opportunity to learn the business, and experience the management approaches of two US parent companies.

When FMC decided to dispose of what was for them a small Canadian subsidiary, he jumped at the opportunity this presented, and with the help of a substantial operating line from the company's bank, entered into a lease-purchase arrangement with FMC for the company's Canadian assets. Thus Acadian Seaplants was born.

Faced with a one-product company selling low-margin commodities to its former owner, Louis Deveau set about developing new products and new markets. First, he had to get licences for the harvesting rights to rock weed, a species of seaweed that promised to yield a variety of potential products. At the time, a Norwegian company had access to the entire Nova Scotia rock weed resource, and it took considerable time and effort to obtain a share. Acadian slowly began to enter the US market with small lots of animal feed ingredients derived from rock weed, competing on the basis of price and quality against the already well-established Norwegians.

Louis Deveau initiated an extensive R&D phase, pulling together a team which drew on many of the excellent technical resources available at various institutions in the region. With financial assistance from government in these R&D activities, Acadian developed a line of new products that had applications as a micro-nutrient in the growing of tomatoes, citrus fruits, grapes, and other crops. Among these products were some registered as plant growth regulators with the US EPA. An intensive marketing effort followed, which slowly led to increasing sales in the US and overseas.

Acadian made arrangements with a processor of fish skins in Shelburne County to use an under-utilized facility in their new extraction process. They started bleaching, blending and milling operations at a plant in Yarmouth, and slowly introduced more and more new products, many of which were used as ingredients in the manufacture of fertilizers.

In the late 1980s, the company also began cultivating seaweeds, an endeavor in which FMC was originally involved as a manufacturing and marketing partner. With the involvement of a number of research institutes as well as the ingenuity and skills present among R&D and production staff within the company, Acadian found ways to process this material for the desired texture and color.

Since 1981, the company has grown from a staff of 10 (run from an office in Louis Deveau's home) to the healthy and expanding operation in place today. During this time, a low-margin commodity product has been supplemented by a range of innovative products developed in Nova Scotia.

Key Success Factors

A number of factors have contributed to the development and growing success of Acadian Seaplants:

- ***As with any growing company, the energy and drive of the entrepreneur has been critical throughout.*** Louis Deveau's enthusiasm for the business is clearly evident. There's a belief that you can do anything you set your mind to. "So many people say such-and-such can't be done. But I never buy it. To make a company like this work, there has to be some individual who absolutely refuses to accept the answer *no*." Louis Deveau is having a great time shaping the company's development and doing what he likes doing best.

- ***Without access to the critical rock weed resource,*** Acadian could never have gone anywhere. Getting the original licences was an intense (and highly politicized) process.

- ***The pool of technical human resources that Acadian has drawn upon for R&D support.*** Louis Deveau says the quality of this technical resource in the region is

extremely good. "You have to hunt for these people, but they're incredible when you can find them." He spent a lot of energy drawing teams of researchers together, and keeping a fire under the activity. He has worked with the National Research Council, the Nova Scotia Research Foundation, Dalhousie University, the Kentville Agricultural Station, the Agricultural College in Truro, and TUNS. The NRC was particularly helpful. In addition, everyone in the company is encouraged to contribute ideas. "Nobody has a monopoly on new ideas," says Louis. One plant worker with a Grade 10 education, has contributed valuable insights into parts of the development process by virtue of his ingenuity and interest.

- *Connecting with the market in the right way*. This was a complex process for Acadian, because they serve many different markets in different places. Most of the selling is done through distributors. Telemarketing now plays a significant role in their North American markets. Customer input is sought frequently, and marketing people spend extensive periods visiting customers on *listening* (not selling) trips. The information is passed on to members of the team upon return, and used to improve existing products and develop new ones.

- *Consistent product quality*. Acadian pays a lot of attention to the QA process. A sign in the Yarmouth production plant reads: "Quality is when the customer returns, not the goods." Without consistent quality, says Louis Deveau, you have nothing.

- *Excellent service* -- absolutely essential, in Louis Deveau's view. He cites good communication with customers at all times as being the key -- even (or especially) when there are problems to be sorted out. In the event of shipping difficulties, for example, all parties in the company are immediately brought together to identify the source of the problem, and the customer is kept informed of what's going on throughout. Acadian also works very hard at being flexible in fulfilling customer requirements. "We give them exactly what they want, when they want it."

- *Government assistance in the R&D and marketing process has been very helpful*. This is a key element. With this support, Acadian has been able to develop new products without selling equity or becoming over-leveraged. (Louis Deveau and his son, Jean-Paul, an engineer who returned home to become VP of Marketing after working for Imperial Oil for several years, own all the shares.) "If they were to cancel all the government programs, the ones I'd fight hardest to keep are those that help support R&D and marketing," says Louis Deveau.

Obstacles and Challenges

The company has faced many challenges in its development to date. They include:

- *Getting people with the appropriate skills and experience*, especially in the outlying areas where some of the company's plants are located. Many of Acadian's key managers have either worked extensively in other places before coming back here to join the company, or aren't from here in the first place. The company needs people with skill sets appropriate to the industry -- and sometimes these are very specialized. For example, there is no

local chemical industry to draw on for experienced managers. So Acadian brings people in from elsewhere. Bringing people in from outside Canada can be difficult, however, since the immigration process can be a frustrating deterrent.

- *Delegation*. Louis Deveau says he is delighted to delegate significant authority when the competence is there. He singles out *the ability to take charge* as the most important quality which Acadian looks for when hiring people (in addition to the baseline of relevant technical competence). Nothing can grow without the right kind of experienced people, willing and able to take charge. "It's very hard to find people with this ability." Acadian spends lots of time in the hiring process.

- *The presence of so many layers of government is a real burden and a big problem*. For example, because it operates in three Maritime provinces, Acadian deals with three Departments of Labor; three Workers' Compensation Boards; three Departments of Transportation; three Deputy Ministers. "The proliferation of government is a tremendous cost burden to the taxpayer. and a tremendous time burden at the company level."

- *Government protection*. While misplaced government financial assistance is a problem, protection is worse; everyone hides behind it. The problem with protection is that because it produces a lack of competitive options, it weakens the capability of firms to do their best. This is linked with the issue of poor quality. Acadian experiences lots of problems with quality and service from local suppliers, part of which Louis Deveau attributes to the protected environment many suppliers have grown used to over the years. Acadian is a demanding customer, but many of their local suppliers don't appreciate these demands -- "they just don't have the same respect for quality as we do." This is definitely an issue. For example, Acadian has had to deal with leaky shipping containers purchased from Canadian suppliers -- which show them up badly in their own customers' eyes. Government protection enables poor quality to infect the whole system. However, as Louis puts it: "Free Trade should eventually help clean this up."

Looking to the Future

For Louis Deveau, future development is an organic process. He just keeps taking the next logical step.

The company will continue to develop new seaweed-based products based on the natural resources available to it. Growth will require access to more of this natural resource (the company is now looking to New Brunswick as a potential source of new raw material supply), and also to a greater focus on cultivated seaweeds as a basis for future products.

Capital is not particularly a problem. More important to the company's future development is the ability to "get people of the kind and class we want." And lastly, Louis says what he really needs is "to be 10 or 20 years younger with the knowledge and experience I have now!"

Diagnostic Chemicals Limited

Diagnostic Chemicals Limited

For the past 20 years, Diagnostic Chemicals Limited has focused on developing and producing high-purity chemical and biochemical products used in a wide array of fields. The company produces specialty organic chemicals for medical diagnostics; synthesized chemicals used in the pharmaceutical industry and in the production of adhesives, advanced electronics and synthetic rubbers; and pure proteins extracted from animal tissues for use in analytical tests and research procedures. The company is now the largest Canadian manufacturer of diagnostic products.

DCL is housed in several buildings in the West Royalty Industrial Park outside Charlottetown, PEI, where it runs its research and development programs and manufactures all of its products. The company, which is locally owned, has a staff of 85, about 65 of whom work in PEI. DCL was a 1992 winner in the Small Business category of the Canada Awards for Business Excellence and has been repeatedly ranked among the *Financial Post*'s "100 best companies to work for in Canada." Well over 90% of DCL's products are sold outside Atlantic Canada, with about 75% of revenues coming from the US and 15% coming from other parts of Canada.

How the Company Developed

DCL began in 1970. Regis Duffy, the founder, did not originally intend to start a company. He had been working at the University of PEI in pesticide development and was looking for contracts to fund summer students at the university. A small New Jersey company responded to an advertisement he had run in a chemical engineering journal in the US. This enquiry led to some work in the field of blood analysis.

In the course of doing this work, Regis and his colleagues discovered there was a need for a wide range of chemicals in a particular area of medicine. They got out the books and discovered other chemicals that could be produced for use in the medical area. Collaborating closely with his former PhD research director, Dr. Douglas Hennessy -- who is "a bit of a genius in the biochemical field" -- Regis and his small group began to develop a line of chemicals used in diagnostic tests.

They initially worked out of the university, but soon moved to a small laboratory and pilot plant located in a downtown garage in Charlottetown. DCL began selling products across Canada. Their first attempts to export were into the Hong Kong and Singapore markets in the late 1970s, following a suggestion made by one of their distributors in Ontario. However, after 3-4 years they came to realize that Hong Kong is "probably the most competitive market in the world." They started to question why they were selling in Hong Kong, "especially since we are 600 miles from Boston," reflects Regis. "We realized that if we were going to make it we were going to have to make it in the US market."

Until entering the US market, the company remained quite small; in 1980, DCL employed fewer than 15 people. In 1982, with financial assistance from PEMD, they set up a separate company in the US to

market their products there. Diagnostic Chemicals Limited (USA) now occupies offices on a 2.5-acre site in Oxford, Connecticut. In 1991 they opened another office in San Diego to provide fast service to customers on both eastern and western seaboards. The US company now employs 20 people.

The combination of a marketing office in the US with R&D and production facilities in PEI has worked very well for DCL. "I think this is an ideal situation," says Regis Duffy, "Atlantic Canada is an excellent place to source technical personnel. Also, there are many people floating around the world from this area with master's degrees and PhDs. Many of them would love to come back here." The company's staff includes many people who have returned to PEI after years away.

In 1991, DCL expanded into a new 28,000 square foot facility dedicated to the manufacture of diagnostic components, fine chemicals and enzymes. Over the past five years, sales have quadrupled, and are currently approaching $10 million per annum.

Key Success Factors

Regis Duffy and his colleagues identify the following factors as being key to DCL's success:

- ***Their focus on the American market place.*** Regis regards the decision to establish the US office as "the most important marketing decision made in our career." This decision was critical to both survival and subsequent growth. DCL has found the US market to be readily accessible. By contrast, Regis Duffy says they have found the Canadian market, with its thin population, difficult to access. In part this is due to intense competition from the US companies active here. "People in Atlantic Canada have no concept of how difficult the Canadian market is. For a small Canadian company to start up and break into the market is a tough proposition."

- ***Having a strong US marketing presence relative to the size of the company.*** This has helped both in developing US markets and in serving US customers. Proximity to their US customers helps DCL to identify new product opportunities. By maintaining a US presence, DCL has also been able to stock supplies for fast shipment to US customers; sending multiple shipments out of Canada would be both cost-prohibitive and slow. Regis Duffy points out that Americans are very impatient people. "When they want something they want it today or at the latest tomorrow. And they can get most things in the States tomorrow."

- ***Willingness to innovate on a regular basis.*** DCL is adapting all the time to changes in its markets and new opportunities. "There is nothing static in this company" says Regis Duffy, "the world of static concepts in terms of a way to do business is as dead as a doornail. I think you need to have a process mindset if you are going to be successful." The company is managed with a lot of delegation, to provide room for flexibility and consensus. "Everyone in the company is involved in the process. It's the only way things can move ahead." DCL is described by Gary Reid, director of the chemical division, as being "very entrepreneurial all the way through. We are innovative and we are always changing with the times, which is what our customers want." The company looks to hire highly motivated people who also have

a good grasp of "the three Rs", and as a result the workforce is very dedicated to DCL's mission. The company has a profit-sharing plan based on 20% of pre-tax profits, plus yearly bonuses. "People seem to have the right chemistry for the company. Everyone in the company feels his/her job is the most important part of the business."

- *Being market driven.* Customer input is actively sought and customer requests go through a systematic review process within the company. Also, DCL focuses on products which can provide a large value-added component. For example, the company packages goods in different ways for different segments of the market. "Our company fills gaps or market niches that a larger company is not willing to bother with. We can do all this and still maintain quality better than most of our competitors," notes Heather Stewart, Director of Marketing.

- *Product Quality and Customer Service.* DCL produces high-purity products at the top of the chemical development field. Quality is a must. Customer service, also seen as providing an edge over the big companies who may take less time to deal with a client, has been consciously developed and enhanced over the past 10 years. Flexibility and the ability to overcome problems quickly is a big plus for the company. Says Gary Reid, "We only have a small customer base; we care about them and serve them better than our competitors." In addition to support, the customer service function provides a vehicle to find out about new markets -- perhaps markets which competitors are overlooking. "When customers have a problem, DCL gets a chance to get into new markets," says Gary Reid.

Obstacles and Challenges

Discussions with Regis Duffy and his colleagues identified the following as some of the key obstacles and challenges the company faces:

- *The challenge of continual innovation.* To stay on top of its business, DCL must constantly develop new products and new markets for existing products. Many products have a life of only a few years, and the diagnostics industry is relatively mature. It requires people, space and capital to develop new products. DCL takes advantage of many of the financial programs available through the NRC and ACOA to help fund its R&D activities. Beyond that, it relies on internally generated money for financing growth. Other than bank financing, outside private financing has not been part of the mix. "Venture capital is not an option because it does not exist here in Atlantic Canada." Access to more capital to expand R&D activities is the major item on Regis Duffy's "wish list".

- *Dealing with change.* The focus on innovation forces the company to adapt to rapid change. A new purchasing department has recently been established and production has been extended to two shifts. Says Gary Reid: "we have tried to instill confidence that things are changing for the better." DCL acts decisively when changes need to be made. "When you're going to shake things up in a company, it's important to do it quickly so that things don't lag on in a state of chaos."

- *Regulatory issues.* Nationally based regulations make it difficult to keep standards consistent. This extends all the way from labelling to environmental regulations. "They are trying to

regulate everything. It is a problem because governments try to regulate in a vacuum. I would like to see the US and Canada regulate together, especially when it comes to the environment," comments Gary Reid. Heather Stewart agrees that dealing with regulation is a big headache. "The paperwork alone could kill a company -- you have to really gear up for it."

- *Distance and transportation costs*. The company's PEI location means it takes time to get things to the market. Transportation costs are high. DCL "basically had to change the mentality" of how the truckers did business in order to ensure their products would get through to the US on time. Distance from main centres also limits DCL's access to technical services which would enable the company to utilize new technology better.

- *Attitudes of government*. The slow response of government can be a real problem. There have been cases when shipments got held up because no-one was available in Ottawa to make a decision regarding hazardous shipment approvals for several days. This has resulted in products not reaching customers on time. Gary Reid comments that "whenever a first-time event comes along, the government people always seem to have real trouble dealing with it. The public service should be getting the job done *with* business, not against it."

- ***Supplier and service quality***. This can sometimes be a real obstacle, and DCL would like to see a much better customer service mentality from the service industry. "We are continually fighting with our suppliers to give us the type of service that we give our customers," says Gary Reid.

Looking to the Future

DCL has managed to continue its healthy growth by diversifying into a variety of areas rather than staying solely with packaged diagnostic products. It intends to develop more products in its three main areas of activity. In terms of market development, China and Mexico are both new areas of particular interest.

The growth process has to be balanced with the constraints of managing growth and funding development work. More capital might lead to faster growth, but as Regis Duffy comments: "It's a question of how fast you want to grow. Fast growth is equal to high risk."

Efamol Research Inc.

Efamol Research Inc.

Efamol Research Inc. occupies a beautiful, newly renovated 38,000 square foot research facility in the Annapolis Valley Industrial Park outside Kentville. The facility incorporates large open-plan laboratories designed for maximum interaction among researchers, wide open walkways, a library and reading area, a pleasant lunch room area, and lots of light.

Efamol is the main research and development arm of Scotia Pharmaceuticals, a public UK company spawned by Efamol. Scotia develops and produces a range of products based on Efamol's primary expertise in the field of Essential Fatty Acids (hence the name -- 'EFA-molecule'). Since its inception in Nova Scotia in 1981, Efamol has grown from a three-person start-up into a multi-disciplinary R&D group employing about 50 people in its Kentville operation. From its beginning in a single unit in a provincial incubator mall, the company now occupies the entire building.

Efamol's primary business is in the area of lipids and related products. Lipids are the main constituents of the membranes surrounding every cell, and are vital in controlling all cell behavior and the traffic of material into and out of cells. Efamol's original business was dietary supplements, using the evening primrose plant as a prime natural source of certain EFAs, which are absent or reduced in certain human disease states. These are sold in many countries around the world, including Canada and the US.

Through association with its UK affiliates, the business has expanded into pharmaceutical products used in the treatment of eczema, dermatitis and mastalgia (breast pain). These are primarily sold under licensing arrangements with major pharmaceutical companies in the UK, Ireland, Germany, Italy, New Zealand, Australia and South Africa. Despite the fact that these products have been on the market in these countries for five years, the company has yet to receive regulatory approval to sell them in Canada.

A host of new products are in development, intended for use in the treatment of diabetic disorders, certain cancers, radiotherapy side effects, arthritis and other diseases. The company also recently announced it is working on new approaches to the treatment of AIDS based on its core technological expertise.

Efamol was the progenitor of what is now a 170-person group whose headquarters are in Surrey, England. The Scotia group's 1993 sales were in the $50 million range. The group spends a large portion of its available resources on research (more that $75 million over the past 12 years), and some $4-5 million per annum is currently being invested by Scotia in R&D being conducted at Efamol in Kentville.

How the Company Developed

Sherri Clarkson, president of Efamol, was the co-founder of the company along with her husband, Dr. David Horrobin, an Oxford graduate and former professor at the University of Montreal. While David Horrobin was pursuing his university research in Montreal, Sherri Clarkson was busy running a publishing house with titles in the fields of both medical research and

women's studies, including an annual medical research review. Over a period of several years in the late 1970s, she "learned everything there was to know about running a business" -- building the publishing activities from scratch to a successful 11-person operation. This was subsequently sold.

In 1980, David was ready to start putting some of his research to work. The plan was to develop a line of products as dietary supplements, which require less regulatory approval. From this base, a range of pharmaceutical products were already envisaged. Sherri and her husband began to hunt for a suitable location to set up a small development company. They were looking for support, and explored various options, including locating in Ontario, Alberta or BC. Most of the other provinces were only interested in mega-projects, but "the Nova Scotia people were terrific," says Sherri. The provincial government offered them subsidized rent in a 3,000 square foot unit in the Kentville incubator mall plus some modest loan guarantees. Sherri, a Maritimer herself, was confident they could do the business from here. They saw no reason to be in a city, and given the slightly unusual nature of their endeavor, opted for this quieter, out-of-the-way spot.

They approached a large English seed company, unique in its knowledge of the evening primrose plants, which provided the raw material for their initial products. A $3 million investment in the fledgling operation ensued, largely based on David Horrobin's credibility and patents. Efamol had sole rights to sell the resulting products in North America, and a joint venture between the two groups had marketing rights in the rest of the world, in which Efamol held a minority interest.

Sales of the nutritional products commenced in several countries, including Canada and the US. The products generated high margins and Efamol started making money, ploughing back profits into further R&D in Nova Scotia. But by the mid-1980s, a number of "copycat" products started to emerge, and margins eroded. Efamol needed money to develop the new products it had in mind.

They tried to raise the money in Canada, but no one would invest. They had better luck in the UK, where they raised some $1.5 million in venture capital in 1985. However, a condition of the investment was that the company's headquarters be moved to England. Since that time, Efamol has effectively been a subsidiary of a UK operation. David Horrobin has run the British side of things for ten years now. (Sherri comments wryly that if they could have raised that money in Canada, Efamol would have been the parent, and the UK company the subsidiary, instead of the other way round.)

By this time there were about 25 people in the Nova Scotia operation, where all the development work was done, and about 15 in England, where the marketing was based. Sales grew quite nicely. Efamol subsequently secured two more rounds of venture financing in the UK, including investments by such well-known groups as Standard Life, Equitable Life, Sun Life, and the Hambros merchant bank. As a result, a high-profile board was assembled. Members of the Scotia board now include a former Rolls Royce managing director, a former CEO of the Midland Bank, and a deputy managing director of Glaxo, among others.

New production, extraction and research operations were established in various parts of the British Isles, and distributors were lined up for the newly developed pharmaceutical products. The new products were successfully launched in

Europe and elsewhere in 1988. Licensing deals were signed for different segments of the market in various countries. Then, in the Fall of 1993, Scotia went public on the London Stock Exchange, raising $75 million in equity for product development and expansion purposes in what Sherri describes as "the most successful offering in its sector in 1993." The offering was underwritten by a leading British merchant bank and the London market gave the company a capitalization of over $350 million. The original shareholders still hold a considerable portion of the equity. Curiously, no Canadian underwriter was interested in this UK deal, and not a penny was raised in this country.

Key Success Factors

Some of the key success factors in this fascinating story are evident from the history. Some of the most interesting ones include:

- *Tremendous commitment in the face of numerous obstacles.* Sherri Clarkson says that the company was built by "sweat, tears and blood." The group has seen phenomenal growth over its 12-year life, and has been through its share of difficulties. The tremendous commitment of Sherri and David Horrobin are evident in the result. As Sherri says, "You have to act small. You have to be cleverer. And you have to *never quit.* You have to be a manic optimist. And a workaholic."

- *Scotia's pharmaceutical sales in Europe.* The growth of these sales since they were first approved in 1988 has been a major boost in revenues for the company. On this basis, Efamol's research work -- and Scotia's business results -- expanded dramatically from the dietary supplement field.

- *People: the innovators within the company.* Efamol's VP and Laboratory Director is Dr. Michael Winther, an American who joined Scotia in England five years ago, after a 10-year career with Burroughs Wellcome. He cites the influence of David Horrobin as a key success factor: "He has tremendous creativity. He's someone you want to work for. That's why I joined the firm." Both Michael and Sherri concur that it is the innovators who have made it all work. "We're always looking for people who can come up with and develop good ideas," says Sherri. All key people have stock options.

- *Letting the researcher research.* To foster an atmosphere of unfettered research at Efamol, there is a strong policy of "letting the researchers research." To counteract the creeping influence of bureaucracy as the company was growing in the mid-1980s, the R&D function was deliberately separated from all of the operating, marketing, approval-seeking and other business areas. No administrative burdens are placed on the scientists -- they are left free to do what they do best. There is no clocking in or out -- people are assumed to be responsible for their own schedules. "We constantly work at finding people who can operate this way," says Sherri.

- *Bringing in the best people from around the world.* Most of the senior scientists have been hand-picked from around the world for their special knowledge. They are encouraged to travel a lot, attending conferences in numerous countries in the relevant areas of research. Often, the company invites post-doctoral students to join them for a couple of years. Many of them stay on permanently. Efamol receives a steady

stream of applications and generally does not need to advertise for its staff.

- *The Nova Scotia location.* It is not a problem getting people to move here. There are "many more positive things than negative things" about being located here, says Michael Winther. Having lived in Nova Scotia for just two years now, he regards the people available here as a big plus. "We have a very good quality staff. We're not competing with the large companies to get these people, and if they come, they stay. We have been able to bring together a long-term core of excellent people." Middle-level and support staff (both in the lab and on the admin side) are all from Nova Scotia. There is a lot of training done inside the company. People are quite well paid compared to the prevailing local rates and turnover is "no problem at all."

- *A willingness to make alliances, and success in securing financing.* Before going public six months ago, Efamol had raised a fair amount of money for its ongoing development -- about $25 million altogether. They have achieved something very unusual by local standards. They have developed substantial sales primarily through licensing arrangements and have built on David Horrobin's reputation in the UK to assemble the requisite financial resources for growth.

Obstacles and Challenges

Efamol has taken on its fair share of challenges. The remarkable thing is the degree to which Sherri and her colleagues have successfully overcome the difficulties. Among many examples, the following stand out:

- *The regulatory environment in Canada.* In the eyes of both Sherri Clarkson and Michael Winther, the Canadian regulatory climate is a huge obstacle to building companies like Efamol in Canada, let alone Nova Scotia. "Other countries favor home-based industries; Canada penalizes home-based industries," as Sherri puts it. [The approval process is slow and the regulators are not service-minded.] "This works against innovation in small companies. Canada is inimical to research for all except the biggest companies, and being located in Nova Scotia makes it worse. But Health and Welfare Canada *really don't care* about this. It's different in the UK. Things seem to work fine there, and I don't notice the public being subjected to any health hazards as a result of lack of regulation. If we hadn't had the UK as our home country we would never have gotten anywhere." Michael Winther agrees: "You're not going to get any innovative research firms here so long as the regulatory issues aren't addressed. We're doing this here totally against the odds."

- *The Canadian investment and banking system.* The climate for financing activities such as Efamol's is extremely negative in Canada. "The venture capital climate is weak and there is no merchant banking system here. We would never look for money in Canada," says Sherri. "The UK merchant banking system provides a much larger and more flexible pool of capital."

- *Little support for a radical new enterprise.* Despite a certain amount of financial support from the province and ACOA (which Sherri considers to have been crucial), there has been little else which aimed to hold Efamol here.

Scotia has found Canada to be very insular when it comes to financing; there was no interest in Canada in either earlier financings or the recent public offering. If the province and ACOA had not helped fund the renovation of their new facility, the UK shareholders would probably never have let them stay here. (The only difficulty working with government funding sources here was that they were slow.)

- ***Weak support at the university level in Canada.*** Despite its very happy experience at the employee level, Efamol has not had much success working collaboratively with the universities here. "Only now," says Sherri, "after we're getting some credibility from our European activities, is there even a grudging recognition that we're doing anything worthwhile." Michael Winther says they would like to do more collaborative work locally, but despite the proximity to a significant research capacity in Halifax, "it often seemed easier to establish collaborations in Ottawa, Vancouver, or the UK. The academic system needs to adopt greater flexibility and there are signs that this may be happening." He contrasts the situation with that in England, where it is very common for a PhD to include a period working in industry, which is hardly ever done here. Scotia Pharmaceuticals has many research collaborations in England, where they find the environment much more favorable.

- ***Logistical and immigration issues.*** Distance from markets is not a major problem for Efamol; they leave all the marketing, except in North America, to their UK affiliates. The four-hour time difference is "much better than if we were in California." Nova Scotia is therefore quite a favorable place for them to do R&D. There is some expense associated with travel (but the connections to the UK are good), and they have to go to Halifax for practically everything they need. Access through Boston is "terrible", and a real disincentive to visitors coming in through the US. A greater irritation is associated with the way immigration treats people coming over from England to collaborate on a project for a week or so. The tendency of immigration official is to ask: "Couldn't a Canadian do it?" This has led to embarrassment and frustration on more than one occasion.

Looking to the Future

Scotia Pharmaceuticals had over $60 million in the bank following its public offering. The money will be primarily used to expand R&D activities and complete clinical trials aimed at a number of new product areas. Michael Winther concludes that the company's development pipeline has the potential to provide substantial benefit -- and the markets are massive. Efamol expects to double its staff within the next 5 years.

A number of important collaborations are in progress and trials for new products in diabetic neuropathy, various kinds of cancer, rheumatoid arthritis, radiation damage, and AIDS are taking place in Oxford and London, England, as well as at other centres in Germany, South Africa and elsewhere.

GN Plastics Company Limited

GN Plastics Company Limited

GN Plastics Company Limited produces a line of high-quality thermoforming machinery which it sells to customers in 27 countries around the world. The company, which was established in 1980, is located in a pleasant, modern facility on a country road close to Chester, Nova Scotia, where it now employs some 65 people. Widely known for their high productivity, efficiency, long life and ease of use, over 95% of the machines manufactured by GN Plastics are exported outside Canada. Thirty percent of the output is sold in the US; other purchasers are located in Japan, most European countries, Australia, New Zealand, Malaysia, Mexico and China. Product information is readily available in English, French, German, Spanish, Japanese and Chinese.

GN Plastics serves the needs of a specific segment of the packaging industry. The company has developed a new way to design the machinery used to manufacture clear plastic containers like those used in food packaging. Unlike conventional thermoformers, GN's machines cut and strip plastic in one operation, resulting in a far more compact and efficient piece of equipment. The high-speed pressure formers utilize heat, air pressure and molds to form roll-fed plastic material into a wide variety of packaging products. The machines produce perfectly formed clear plastic products 24 hours a day with minimum operator involvement.

Since its inception in a 3,000 square foot plant, the company has expanded four times and now occupies a production facility of about 20,000 square feet. Five CAD/CAM workstations are used to design new machinery, and the company uses some extremely sophisticated prototyping equipment.

The products that GN Plastics produces are in strong demand. The company has been growing at double-digit rates for the past several years and currently sells around $7 million worth of product annually.

How the Company Developed

The company was formed by Georg Nemeskeri, who came to Canada from Vienna with his father in the late 1960s. His father, an inventor and businessman, was looking for somewhere to set up a company to make plastic containers. In particular, he wanted to settle in a quiet place near the ocean, where the sailing was good. He found Chester, and established Chester Plastics on an 11-acre site in 1968.

His son Georg had taken a great interest in machinery design since he was a teenager, and designed most of the production equipment used at Chester Plastics. Georg was the general manager for the plant, and by 1975 had begun to establish a reputation for himself based on a successful new machine he had designed for the Chester Plastics operation.

Other plastic container manufacturers heard of the equipment and wanted to purchase similar machines. Georg responded to their requests and started to sell his machinery in addition to the containers themselves. In 1980, he established GN Plastics expressly to produce such machinery. His machines offered significant advantages over anything else available -- for one thing, they

could be used to produce containers made with a variety of raw materials. They also required less maintenance, and offered high production rates, low wastage, low tooling costs, and quick tooling changes. "Machine designing is a hobby of mine," reflects Georg Nemeskeri, "I'm the type of person who likes to take things apart to see how they work." He notes that he didn't invent the process itself, but rather, he improved on existing equipment designs.

GN's first sales were made in the United States. Because of a strong customer service reputation based on Georg's attention to product quality, these sales came quite easily. "People came to us because of our reputation for a quality machine," says Georg. "For the first nine years the business functioned entirely on word-of-mouth. Then we moved into Australia, followed by the European market. I was invited to speak in front of 200 delegates from the European thermoforming industry in France. This was very helpful. It assisted us in establishing our name in the field." Later, GN made an alliance with a German company, attending overseas trade shows with them.

At first, GN made just one size of machine. But customers kept asking for a larger one. Georg responded by designing a machine to meet their requirements, and the equipment quickly found a receptive market. "We are a market-driven company," says Georg. "Our customers make requests and suggestions, and we respond to what they need."

GN Plastics finds Nova Scotia to be an excellent location in which to conduct its business. "Most of our customers are international," notes Georg, "and with the airport close by the location is not really an issue." Patsy Schnare, GN's office manager, concurs, commenting that transportation is not a difficult problem to deal with. GN exports much of its bulky 6,000-lb machinery through the port of Halifax.

The company hosts many overseas visitors -- over 150 from Japan alone -- and offers hospitality at places like the Captain's House in Chester. "People who come to Chester to visit us are amazed at the space and the environment. They perceive that the quality of the environment is reflected in the quality of the product. The Japanese think we're in heaven here," says Georg. Patsy agrees: "Visitors to GN Plastics love Nova Scotia; they rave about how beautiful it is here. It's a plus that the plant is located in a rural seaside area."

Key Success Factors

The story of GN's development demonstrates a number of the factors that have contributed to the company's healthy growth and continuing success:

- ***Identifying a market niche.*** Whether through conscious market selection or by seizing an opportunity that presented itself, GN Plastics has been able to carve out a niche for itself in which it now holds a dominant position. Customers seek out the company because of the clear superiority of its products and service of customers needs. Georg's experience in the production side of the business at Chester Plastics no doubt gave him a critical insight into important customer concerns and issues.

- ***Continuing innovation.*** Georg Nemeskeri enjoys designing new machines and is obviously extremely skilled in doing so. "The reason for the growth in our business," he says, "is because of our innovative approach." As the company's staff has grown,

many people in the firm have become involved in the design process. "We wanted all the engineers to design," says Georg. "So we bought a CAD system. Then when we noticed some engineers were waiting to use the system, we bought another. Two months later we bought another, until eventually all the engineers were working from their own stations. Access to these tools has been important for the company's development."

- *Quality and service.* Once the first GN machines were out on the market, the company quickly secured a reputation for both quality product and quality service. Georg made sure that his customers were really satisfied with the products. GN takes care of any problems with the machines it makes, and will take an item back if the customer isn't satisfied for some reason. (The average machine sells for about $150,000.) "I remember going to see one of our customers in Mexico whom we had not heard from in a while. I went to his operation and saw that the machine he had bought was not being used. I asked him why he had not let us know, and offered to help. We sent down an engineer at no charge, to assist him for a week or so to set up the system properly."

- *Being market driven.* GN is a very market-driven company. Customers often request changes and improvements, and a virtually unsolicited demand drives the company's growth. "Growth," says Georg Nemeskeri, "happens mostly through connections. For example, we had a US client who sold their own products in China and recommended us to their Chinese agency; that is how we entered the Chinese market."

- *The approach to human resources.* The company appreciates the value of hiring people who can make substantial contributions, in the belief that the quality of people a company employs will be reflected in the quality of its products. "I like to get the best possible people and we are willing to pay accordingly," says Georg. "I want people to bring all their good ideas to the table, and I try to encourage them not to waste time on the ideas that will only produce mediocre results." The company encourages all its employees to take advantage of relevant training programs, particularly where the focus is on developing practical, hands-on skills.

- *Self-sufficiency.* GN received a small amount of funding from government in its early stages, but generally does not get involved with government financing programs. The company's growth has primarily been fueled by internally generated funds, and GN has developed a very good relationship with its bank. "If we had time to apply for government money, we might take greater advantage of it, but the process is too time-consuming. A few years ago, our bank suggested we should go to ACOA to help finance a plant expansion. However, we had to wait three months for approval, so the project couldn't be finished in time for winter. This meant unforeseen expenses of over $20,000."

Obstacles and Challenges

- *Managing growth.* Continual fast growth for a small company can sometimes be exciting, says Georg Nemeskeri, but it does create challenges. When the company employed fewer people and produced

only one type of machine, it was simpler to manage. "Now, with four sizes of machines," notes Georg, "we are faced with many new issues: stocking the right parts and voltage types, for example. We are starting to get a handle on this as we learn to deal effectively with the growth. Growth presents continual challenges for us."

- *Developing the company's structure by delegating responsibility.* Georg Nemeskeri does not consider his main strengths to lie on the management side. "I wasn't born to be a manager, or to run a company for that matter," he says. "I was born to design machines." The company has grown fast, so the organizational structure is still in the process of catching up. For example, says Georg, "we don't have a formal forecasting process, which is still a surprise to many people -- and a continual source of frustration to our accountants!" The changes the company is experiencing require an increasing amount of delegation, which is recognized as being essential to growth. Implementing these changes is a challenging process.

- *Operational issues.* There are a number of operational issues that Patsy Schnare identified as problematic, due to the company's Nova Scotia location. Supplies can be difficult and frustrating to obtain in a timely manner. "It is ridiculous the length of time it can take to receive items from our suppliers, or to get parts to our customers," she says. "We can get items to Texas the next day using Federal Express, but it sometimes takes three days to get things to Toronto." Patsy finds working through the Canadian customs system to be one of the biggest operational obstacles. "When our US customers ship molds to us for re-working, they need to get them back quickly. But the goods may sit in Halifax for three days waiting for customs clearance. The customs people don't seem to understand the importance of speed." She has many stories surrounding the frustration of getting goods required in the business into the country. The customs clearance process is critical to GN Plastics since many machinery components are imported.

Looking to the Future

"We have everything going for us for the future," says Georg Nemeskeri, "and we are in the process of improving our organizational structure to enable further growth to take place."

A new expansion is being contemplated, but no decision has been made about this as yet. "We are presently out of space and need to expand the plant again. If we can secure an expanded market for our new machines, we will do this." But Georg does not want to expand his company at a speed which might require scaling back again at a later time. "It is terrible to have to let people go. For this reason, we prefer not to grow in leaps and bounds."

Future growth will depend largely on changes in the market place and the specific requirements of GN's customers. "It is difficult to predict the future," says Georg Nemeskeri, "because our company is very customer-driven."

Jacques Whitford and Associates

Jacques Whitford and Associates

Founded in 1972 by Hector Jacques as a small geotechnical engineering firm, Jacques Whitford and Associates has grown to become a company with over 300 employees. Since its inception, the firm has vastly expanded its areas of expertise and market scope, including becoming a significant presence in the environmental field. JWA now incorporates seven principal fields of activity (geotechnical engineering, materials engineering, mining engineering, environmental sciences and planning, environmental engineering, hydrogeology, and air quality), each with its own menu of services. From its base in Atlantic Canada, the company enjoys nationwide recognition and has gained a foothold in the international market.

Jacques Whitford now has eighteen offices worldwide. Ten of these are in Atlantic Canada; the rest are in Canada, Maine and Russia. The company is involved in many major environmental engineering projects in Canada and also continues to maintain a significant practice in consulting engineering. While the bulk of JWA's business is based in this region, over a third now comes from outside Atlantic Canada.

Jacques Whitford's headquarters is located in the Burnside Industrial Park. The facility is very modern, practically designed, equipped and furnished. During our tour of the office on a Friday morning, it was clear that a great deal of business was being accomplished without a lot of panic or fuss. The general environment was extremely pleasant and very professional. Three senior staff members took the time to speak with us; while it was very clear that they were extremely busy, each was gracious and thorough in his answers.

Jacques Whitford was recently recognized by the Financial Post as one of the 50 best-managed companies in the nation.

How the Company Developed

Hector Jacques started the company over twenty years ago. Under Hector's direction, the company quickly expanded from supplying geotechnical engineering to concrete and minerals testing. New offices were opened throughout Atlantic Canada. In the early 1980s, the company added a mining division and formed Newfoundland Geosciences, a geotechnical and materials engineering consulting firm.

Jacques Whitford has had a very high-profile practice; it has been involved with most of the major engineering projects in Atlantic Canada, such as Hibernia, Venture, Terra Nova and recently, the Halifax Harbor clean-up plan and the waste incineration project slated for the Metro area.

International exports represent a small but rapidly growing percentage of the company's business. JWA's first forays into the international realm were not particularly significant. They took on CIDA work on an occasional basis, but overall international work did not make a significant contribution to the firm's income. However, the marketplace is helping to change that picture. Steve Fudge, VP, International Business Development, says that "During the past two years, we have looked at the market around us and realized that while we will continue to be involved in local work, such as clean-up and infrastructure, we don't see

our recent growth being sustained, with no major new capital works in the foreseeable future. Exporting is the only solution. There are incredible opportunities in other countries, for example in China, Mexico and Russia."

Russia is a particularly interesting market for a Canadian engineering firm, since the world appreciates Canadian firms' experience in working with problems peculiar to the North. Dealing with Russia brings with it its own set of problems, such as an unstable government. JWA has accepted this as part of the inevitable burdens of doing business internationally. China brings with it a whole separate and completely different set of needs, which JWA is also currently working with in a variety of creative ways. Mexico is altogether different than either of these two. Part of JWA's international strategy to deal with the complexities of these markets is to seek out and rely on partnerships, rather than trying to go it alone in such diverse and complicated markets -- where intense competition from firms throughout the globe is a given.

The company has expanded abroad through alliances and joint ventures, including an office in Russia opened with a Dutch partner. As oil and gas production and business has begun to move out of North America, Jacques Whitford has established an office in Calgary -- a well-known center for the industry -- in order to make contacts with large firms doing business globally.

JWA is privately held by the employees. Over the years, many different management structures have been tried as the company outgrew the original structure. During the past three years, the company has been growing at a very rapid rate, which inspired the development of a new management structure. Hector Jacques remains actively involved with the company, but now has the assistance of an Executive made up of six senior staff members.

Key Success Factors

Jacques Whitford enjoys a reputation for high-quality consulting work. Steve Fudge said, "I could give you the usual platitudes, but it boils down to the fact that we strive to do quality work, on-time, on budget." Some of the other key success factors:

- ***Staff with a high level of technical expertise combined with exceptional business and communication skills.*** Just being a good engineer isn't enough. As Don Elder, VP, Environmental Engineering and Research and Development, mentioned, candidates without the requisite high levels of technical skill, just don't make it to an interview. "We are looking for hard drivers. Big picture thinking. Advanced communication skills. The right attitude is essential." When JWA looks to hire a particular type of engineer, they are very selective. They may begin their search by looking for a candidate coming from a university program that is noted to be strong in that particular area. Don Elder believes that the quality of life in Nova Scotia can be a benefit in recruiting. The company offers a strong compensation package and excellent working conditions and so enjoys a very low turnover rate.

- ***Commitment to quality work and to the customer.*** "Our clients come first. Our home phone numbers are on our business cards. We will leap over tall buildings for the customer and do so at a reasonable cost." Suther Yuill, Manager of Environmental

Engineering/Remediation, says. "It's most unusual here. You will find secretaries and technical people here on a Friday at 6 pm because they want to get some work done or documents ready. It is their choice. There is a commitment to the customer at all levels of the company."

- ***Investment in the right staff and the right skills.*** Training is encouraged, even required for advancement at the company. Employees are reimbursed for courses that relate to their job. Some employees have been sent to university to obtain advanced degrees. One of their current internal training programs focuses on ensuring excellence and efficiency in all of their communications. The company also regularly holds informal training sessions and discussions on hot topics, such as environmental issues, so that employees can speak knowledgeably about current issues and represent the company well.

- ***Technology and innovative uses of the technology.*** The company is ahead of its competition with respect to its technology, and it continually puts resources and energy into maintaining a technological edge. But in addition to this, the company uses technology in creative ways. For example, the company created a MERS (Mobile Environmental Remediation System) unit -- a vehicle containing the tools needed to deal with a wide variety of environmental clean-up problems. Jacques Whitford chose to deliver the service solution to the client rather than just provide a report.

- ***Employees have a stake in the company.*** One-third of the employees are shareholders. Any employee who is recognized by his or her supervisor or peers as a valuable contributor is eligible -- in fact, asked -- to buy shares. One of the managers emphasizes that "If a new person is not recognized as a key contributor within 12-18 months, we wonder if we have made a hiring mistake. Employee participation works for us. We have gone from two people to over 300 in a 20-year period. It speaks for itself."

- ***A "very flexible, extremely delegative" management style has encouraged individual contribution and initiative.*** In addition to keeping bureaucratic obstacles (such as requiring approvals for routine travel decisions) at a minimum, the company's management style encourages people to think for themselves. Many of JWA's new ideas come from individuals at various levels coming up with an idea and championing it. "We employ the right people, people who are capable of making decisions and then we trust them to do so. Everybody here has earned the right to make mistakes. If you never make a mistake, you aren't being daring enough."

Obstacles and Challenges

Over the past twenty years, the company has become very familiar with the obstacles to doing business in Nova Scotia.

- ***Government.*** "Taxes. Taxes cause us to be at a disadvantage in international competition. For example, in the Netherlands, there is only about a 5% corporate tax for exporters. They recognize that the country is an exporting nation -- they have to export to survive. Canada doesn't look at it this way. Given that the Netherlands is our competition, which company is going to grow and succeed in the next

10 years? The Dutch will grow far faster. It is a funny sort of barrier to competition, but it is very real." All of the managers interviewed cited a "more realistic business environment" as an important priority.

- ***Finding the kind of person needed -- someone with the "lights on."*** Jacques Whitford's reputation attracts many high-quality candidates; in fact, Don Elder guesses that the kind of employee he is looking for is a "1-in-a-100" type of person. "We recruit from inside and outside Nova Scotia. In the past few years, more than 50% of our new hires have been from out of the region." Don Elder notes that there is no established environmental engineering course of study in Nova Scotia, yet 50% of the engineering work done here is in that field.

- ***When dealing with Central Canada, a location in Halifax is not an asset.*** "Often we have to overcome a perception problem when they find out our office is in Halifax. This is not the case when dealing with Western Canada. There, just as long as we aren't from Ontario, and can do the job, we can get the contract. In Ontario, it isn't so straightforward."

Looking to the Future

Jacques Whitford looks to international expansion as a key component of its future development, which may involve breaking into markets that are protected by long-standing relationships and prejudices. Steve Fudge spends a good deal of his time travelling, doing market research and seeking alliances and business. The company is currently focusing a lot of attention on work in China and plans to substantially expand that business.

In addition to expanding geographically, Jacques Whitford is also working on expanding the types of products and services it provides. More new products like MERS, which provide a "one-stop" solution for the client, are in the pipeline.

Even "sacred cows" such as billable hours, aren't safe. Jacques Whitford is trying fixed pricing for clients as just one of many new ways of doing business. "Not many consultants bill this way; we are investigating just billing for a complete job or service. It's unusual in the industry."

Nautical Electronic Laboratories Limited (Nautel)

Nautical Electronic Laboratories Limited (Nautel)

Founded in 1969, Nautical Electronic Laboratories Limited (Nautel) designs and produces high-quality, solid-state radio transmitters. The company has a 50% market share of the global market in non-directional radiobeacon transmitters and has over 4,500 customers operating its solid-state transmitters in 150 countries around the world. The vast majority of the company's revenues are derived from exports. Nautel employs over 100 people at its headquarters in Hackett's Cove and also employs more than 40 at a wholly-owned subsidiary in Bangor, Maine.

The company values the quality of life in its quiet location and 85% of the employees live around the shores of St. Margaret's Bay. "It is fantastic to live in this environment," comments Jorgen Jensen, Manager of Sales and Marketing, "and it is safe for families. We enjoy the isolation, and at the same time, our business activities bring us in touch with events around the world." Nautel's customers are often governments. Visiting customers are frequently entertained in employees' homes, and every effort is made to welcome them here.

The company is housed in a group of interconnecting buildings on the road beside St. Margaret's Bay leading to Peggy's Cove. The original building was designed to be converted into housing -- just in case the endeavor failed.

The present extensive configuration makes it clear that this has certainly not occurred; the original building is now dwarfed by a large industrial-style facility, which houses the bulk of the manufacturing, R&D and administration.

How the Company Developed

Dennis Covill started Nautel in his basement in 1969. He happened to own property in Hackett's Cove and the company has remained in this location since its inception. Distance from markets does not appear to present a problem. As Jorgen Jensen says of Nautel's location: "We are exactly centrally located in our market -- which is the whole world."

Dennis Covill started the business on the basis of several ideas he had for the design of a new solid state transmitter. The design concept promised to offer a much higher mean time between failures. The Canadian Transport Department had put out a tender, calling for a radio transmitter meeting requirements ten times the current industry standard; no one except Dennis Covill thought it could be done.

The first product was delivered in 1971. Since that first transmitter, Nautel has expanded its products to include aeronautical radio systems, marine radio beacons, MF telegraph transmitters, and AM and FM broadcast transmitters. The company's unique designs make its products safe and extremely reliable.

Some years ago, Nautel established a manufacturing subsidiary in Bangor, Maine. The Maine production facilities are modeled on the main plant, and are capable of producing all the products made in Nova Scotia. This facility is used in cases where a US-based company is advantageous from a marketing perspective. All the R&D takes place in Nova Scotia.

Nautel now competes successfully with divisions of many much larger competitors located in the US, Japan and France. This success is primarily based on advanced technology and innovative designs. Nautel uses its research and development capability as a key strategic weapon, and invests 8% of its sales into the R&D process.

As Jorgen Jensen puts it: "Our advantage is based on our research and development; we always emphasize forward-looking R&D. We have the talent and we exploit it, thereby staying ahead of the technology. Our products are durable, and performance is excellent; this keeps systems operational no matter what the conditions are. Consequently, we can deliver a 'no headaches' service to the customer."

Key Success Factors

It is clear that Nautel has quietly grown into a very successful company. Some key factors contributing to that success include:

- *Constantly improving technology.* R&D drives the company's product line. Nautel anticipates directions in its markets for many years into the future. The company is not afraid to take calculated risks on developing new core technologies. "We are competitive because of our talent and innovation. In the late 1970s, new technology developed at Nautel coupled with the new semiconductor devices on the market provided the company with the technological weapon to break into the AM broadcast market. Nautel introduced the first high-power AM broadcast transmitter in 1982. Several companies in that market have now disappeared as Nautel successfully gained market share."

- *Reliability, quality product and company reputation.* "Word of mouth is our biggest source of new customers," says Jorgen Jensen. "Most of our customers know each other and attend the same trade shows, etc. Our products are well known and this helps our marketing effort." Respected customers and consulting engineers are asked for opinions on new technologies and product ideas. These are incorporated into Nautel's research. "We try to think ahead of the customer. It is up to us to give him the product that he doesn't yet know he needs."

- *Commitment to innovation.* "We look for opportunities to take the next leap beyond the competition, to respond to the marketplace needs before they are anticipated by others. We will have brainstorming sessions in which the managers of all the various departments spend a whole Sunday together, kicking around new ideas for products. There is an atmosphere at these times in which you can present your idea, no matter how crazy it might sound."

- *The right mix of technical talent* has been critical. Nautel has been able to attract individuals with a very high degree of expertise in the field, who are motivated to work hard and succeed.

- *Market segments are well-defined and easy to target.* Especially in the AM broadcast transmitter market, it is easy to locate prospective clients. Nautel is often dealing with a country's government, within which there may only be three or four individuals with whom Nautel works. This creates an opportunity for a very focused sales effort. Nautel has used these opportunities to its advantage, and works with local agents and partners in various countries to ensure success.

- *Choosing the right agents* and achieving the right profile in order to be successful in the customer's country. "You need to establish relationships with someone already importing into the country -- a good and competent agent -- since they know how things really work at the local level. You have to get to know the agent and the customers on a personal basis."

- *Successfully navigating the export requirements and culture of many countries.* Through 23 years of exporting, Nautel has learned how to do business in most markets. Once a sale is made, there is still a great deal of work involved in understanding how to get paid, how to get goods through customs, and other logistical details. As Jorgen Jensen pointed out, "Exporting is extremely complex. After generating product interest, you have to find out about the import restrictions that apply to the customer, the currency regulations, the inspection requirements and processes, and the use of letters of credit."

Obstacles and Challenges

Nautel exports virtually all of its production. Canada is a very small market place, and high-tech companies can only be successful in the long term by winning substantial shares in their markets on a worldwide basis.

Some of the obstacles and challenges that the company has worked hard to overcome include:

- *Cash and credibility in the early stages.* In the early years of any company, cash flow is always tight and there is an initial battle to gain market credibility. Nautel solved both problems to a large extent by licensing a much larger British company to manufacture radio beacons to its own design under a five-year agreement. This gave Nautel additional positive cash flow in the early years without the need for the cash outlays related to production. Cash flow is frequently critical because payment can take longer in the export market. Secondly, since Nautel's licensee was a large, well-known corporation recognized around the world; this greatly enhanced Nautel's credibility. An additional bonus was that the licensee was able to make Nautel much more aware of the design modifications necessary in overseas markets which each had very different climates and conditions.

- *Long lead times.* Customer commitments to Nautel's products represent substantial investments, and the products have a life-span of 20-30 years. Consequently, a prospective sale to any given customer arises as an opportunity only very occasionally. Nautel responds to this sales cycle factor by ensuring that it stays on top of any and all upcoming sales opportunities, and then making every possible effort to win each piece of prospective business.

- *Accessing a restrictive US market.* Before NAFTA, some of Nautel's products such as radio beacons fell under the "Buy America" act. The US is literally the largest market in the world. In order to win access to the US market, Nautel set up a wholly owned subsidiary, Nautel Maine Inc. In spite of free trade, Nautel continues to operate this subsidiary, giving the company an "American hat," which may be used when US soft financing or tied aid would otherwise restrict Nautel's access to developing markets.

- *Finding the employee with excellent technical skills and the ability to innovate.* David Grace, Nautel's CEO notes that "the education system here is weak; we are among the highest spenders on education in Canada, but our students come out in the middle of the road when compared with other countries. This is particularly true in science and math. Yet to win at innovation we need to be the best. We have trouble finding excellent technical people."

- *Canadian taxation policies make it difficult to recruit highly talented people.* NAFTA does give freedom of movement to professionals across the Canadian/US border. However, as David Grace notes, "if you try to hire US talent and bring it to Canada, you will find that we pay 30-50% higher income taxes in Canada compared to the United States. This places Canadian companies at a significant disadvantage when competing for talent. We not only have to contend with the natural obstacles of our weather, but with the political obstacles of our tax system."

- *Information about export markets and how to export is difficult to obtain.* Jorgen Jensen commented that he is not sure whether exporting can be taught. "You can get some help from seminars, and government-sponsored courses might give you an overview. But there is a unique combination of factors for every product and company. You just have to learn by doing." David Grace concurs. "There are government programs to support and encourage exporting but they don't do everything for the exporter. People posted abroad are helpful if approached. But remember that you are asking advice from either a Canadian trade officer or in some cases, a local employee. These people are more important for the new exporter. They are not a substitute for an exporter's presence in the market."

- *Isolation from markets.* In today's world of instant communications, David Grace believes that no company needs to be isolated from its market. Nautel's strategy is to win a very significant share of any market in which it competes. Success automatically breaks down the barriers of isolation.

Looking to the Future

Dennis Covill, who remains Chairman of the Board, has retired. Several of the company's key employees are also approaching retirement. The ability to find additional key staff and develop the management structure is therefore an issue the company faces.

Nautel will double the size of its production facility this spring. The company continues to place its main focus on steady, controlled growth, but without going beyond its ability to support and sustain that growth.

Much of the growth must be generated from new technology via continued R&D. "There will be dramatic changes in our market in the next few years. We're looking beyond our existing market. Multimedia, we believe, will replace much of the radio market, so we need to diversify and keep current with the changes. We are looking at high-powered transmitter products for development over the next ten years. We will continue to look for other areas of endeavor that use our technological talent and expertise."

Sarsfield Foods Limited

Sarsfield Foods Limited

Sarsfield Foods ("the pie people") began in the late 1970s as a farm kitchen operation employing the founder, his wife, and a few helpers. From a home-based company serving customers up and down the Annapolis Valley, the firm has grown to be the largest fruit pie manufacturer in Canada. Sales have increased 300-fold in just 15 years, from a base of about $100,000 in 1979. Approximately 87% of the company's sales are now from outside Atlantic Canada, and a growing portion comes from the US. But don't look for the Sarsfield name in stores; most of their products are uncooked frozen pies, which are sold through the in-store bakery section of your local supermarket.

Operating out of a 70,000 square foot production facility in the Annapolis Valley Industrial Park outside Kentville, the company presently employs over 160 people and produces about 100,000 fresh-frozen pies a day using a highly automated process. Company premises incorporate an efficient production area, a freezing stage, packaging and shipping areas, and administrative offices. Sarsfield consumes the majority of the available supply of appropriate baking apples in the Valley and is forced to import a large portion of its raw materials from Ontario and elsewhere. The line extends to over 25 natural fruit-filled products, and is growing. Over 50% of the production is now in products other than apple pies.

Until three years ago, Sarsfield was owned by the founder, Leonard Sarsfield. In early 1991, in order to provide the basis for further growth and expansion into Western Canadian and US markets, he sold the business to Weston Foods, a Canadian food industry conglomerate. The company has since doubled in size, volume and revenue. Len Sarsfield continued as CEO for 2½ years after the sale, and is still actively involved as the company's chairman. Sarsfield continues to be managed from its home town and has every expectation of expanding further there.

How the Company Developed

Len Sarsfield had worked in the apple business as a grower and packer, having spent several years with the MW Graves company (a forerunner of Cobi Foods). In the mid-1970s, he bought an apple farm and began working it part time. He soon added more land and a 5,000 square foot building. In 1976, he left Graves to try to make a go of a business based on this farm.

Initially, his idea was to make caramelized apples, using machinery he picked up from an Ohio manufacturer. But, after producing 100,000 such apples in the Fall of 1976, he quickly found that (unlike in the US), sales died after Halloween. In 1977, he started making fresh-baked apple pies, using his wife's excellent recipes. Initially, there were just three people, rolling out pastry by hand, and making about 150 pies a day. They began selling them to small stores in the Valley between Berwick and Wolfville. They received many compliments, and before too long a Halifax distributor picked up the line to begin shipping product to other parts of Nova Scotia. At that time, the business was limited to selling fresh pies to small stores.

However, there were shelf-life problems, which meant they couldn't run the opera-

tion in the summers. In the 1978-79 period, Len bought an inexpensive pie manufacturing line from a Newfoundland outfit that had no use for it. At one stroke, capacity was increased to 3,000 pies a day. Suddenly, the bottleneck shifted from production capability to marketing capability. They decided to go to frozen pies. A survey was conducted on their behalf by the Nova Scotia Department of Development, which concluded there would not be any demand for such a product. Len disagreed with this assessment -- customer feedback led him to believe his product was different enough, and he went ahead anyway, without their support. He moved forward with a $16,500 loan from the Royal Bank.

Around this time, many supermarkets were opening "in-house bakeries" -- places where fresh baked goods were produced and sold under house names. Sarsfield's pies appealed to this segment of the market because they tasted truly home made. Sarsfield had struck a corner of the market that wanted pies "like Mom used to bake them" and have made it a point to keep to their home-baked recipes ever since. By late 1979, the company was employing about 15 people and they had a van of their own making deliveries up and down the Valley.

In 1981, with some financial assistance from the province, they went to a national restaurant show in Toronto. Their products garnered lots of attention. But it was a hard struggle for the first two years, especially getting sales outside the region. The first response of prospective distributors was: "The last thing we need is another pie. Why should I handle yours?" Len's pitch -- "because it's a better product" -- did not wash with them. He had to convince the end users (the bakery buyers) in order to get distributors to be willing to carry the product. The food shows were the way to do this. People simply loved the product. The main thing was the quality and uniqueness. "If we had been selling a me-too product," reflects Len, "we'd never have gotten off the ground."

Transportation was another big problem; it was expensive to ship small lots to Ontario. He got some assistance from his former employers at MW Graves, who enabled him to piggy-back small shipments along with their Ontario-bound products.

Sarsfield started selling to some of the major supermarkets, including IGA, Save-Easy, and (eventually) Sobeys. The armed services provided them with a little bit of business as well. By 1983, sales reached $1 million, but the company lost money. A year later, sales jumped to almost $2 million, and the company turned a profit. The apple crisp line was then picked up by President's Choice, and things really began to snowball.

In 1985, they moved from the original farm buildings and constructed a new 14,000 square foot facility in the industrial park, in the area where they are still located. They brought in more equipment, doubling capacity to 16,000 pies a day. Capacity was later increased substantially by adding more shifts. Sales grew at 50% or more each year, and by 1988 the company was generating $8 million in revenues, 60% of which were coming from outside Nova Scotia.

Since Weston took over the ownership, sales have grown in every geographic region, and markets have been opened up in Western Canada and the US. Weston has recently made a multi-million dollar upgrade to the Kentville plant and invested substantially in improving processes and employee training.

Key Success Factors

A number of critical strategic choices helped contribute to this success story. Some of these include:

- *The right insight at the beginning.* Len's decision to go ahead despite the discouraging outlook predicted in the original market survey was made on the basis of positive customer feedback to the product. He knew people liked what he had.

- *Building capacity for growth.* The decision to buy the first pie line in 1979 was risky -- but it enabled them to produce much more efficiently and thereby generate more business. Further expansion steps were carefully planned and properly executed.

- *Timing.* Hitting the supermarket chains at a time when in-store bakeries were just taking off was extremely well-timed. One could say this was fortuitous, but it comes down to seeing a market opportunity opening up.

- *Commitment to the cause.* Doggedly pursuing the Ontario market, despite the setbacks and difficulties of getting distributors to pick up the line, was not an easy thing to do. Len and his team kept at it in the face of substantial obstacles, always encouraged by the good feedback during the real test -- the responses of end users.

- *Sticking to their guns regarding quality.* Len Sarsfield always emphasized quality -- "I was always hammering that home" -- as well as the importance of "good housekeeping." (The plant is immaculate and very well organized.) Throughout all the growth and all the production system changes, the firm adapted the equipment so they could continue to produce using original recipes. No compromises were made to the product just to make the production processes easier. Machinery and systems were changed where necessary so that the home-baked taste would not be lost as volumes grew.

- *Keeping overheads down all along the way.* For many years, Len worked in a tiny office, sharing a desk with his office manager. Len is also not enamored of high-tech equipment when you don't need it. "High cost tends to come along with high tech," he comments, "you have to spend a lot of time and money keeping it all running right. Sometimes an extra body or two does just as well. We may not have been super efficient at the beginning, but it kept the overheads low."

- *Location and workforce.* The primary reason for Sarsfield's location is, as Len says, "because it's home." One of the main strengths of being where they are is access to raw materials. This enables them to use fresh apples in all their products. Other fruits are shipped in frozen from Ontario, BC and other remote locales. Another major strength of the location relates to the workforce, which Len Sarsfield describes as "excellent." They have always paid well, and the Sarsfield compensation package includes annual "profit-sharing" dividends for all employees. In addition, being close to the Kentville Agricultural Research Station and Acadia's Food Science Department has paid off in the area of supporting services. Furthermore, Len has (ironically) found that Nova Scotia's isolation has enabled him to take useful plant tours of other large players in the US, who have never regarded Sarsfield as a potential source of competition!

- *Capital for growth.* Len's preference for financing growth has been through internal earnings plus government loans. "Most entrepreneurs don't want to give up equity, and I'd rather earn my way into growth." The company did receive some venture financing in the early 1980s before it was making a profit; this has since been bought back. In the plant expansion in the mid-80s, various government loans and guarantees were essential during the expansion phases. Len has addressed the issue of future growth by bringing in a large company which can develop Sarsfield's business in new markets. "I had no desire to build a personal empire," he comments.

Obstacles and Challenges

There really aren't a lot of obstacles to growth. Kirk McGrath, the new president, a Nova Scotian who spent 12 years in the food business in Toronto, was brought in by Weston to manage the next phase. He sees great opportunities in the US. "It's a question of how to service the US. It's so big." Of the few things that stand out as challenges for the company, the biggest seems to be:

- *Fruit supply.* Both Len and Kirk name this as the #1 issue. Apples. They simply can't get enough of them. Sarsfield uses Spy apples (best for the purpose), but they have not been able to get Valley growers to invest in planting more Spy orchards. "It's frustrating," says Kirk McGrath, "we've had double-digit growth for years; the plant capacity is there; the market is there; we can sell the product; but we can't get the apple supply. We've tried everything to get growers to plant more orchards. We'll even guarantee to buy the crop as far out as 2005." He sees changes coming, but it is ironic that the one thing preventing a major value-added industry in the heart of apple country from growing even more rapidly is a shortage of raw material.

- *Other issues.* The company faces a medley of other challenges, such as trucking costs and duties going into the US, and attracting high-calibre people, especially on the marketing and sales side. Kirk also complains that travel to the US is difficult -- "timing on the Boston flights is rough -- it's an ordeal to make it to Connecticut by 3 p.m." But overall, these are relatively minor challenges and inconveniences. The main thrust is onward and upward with a very strong momentum.

Looking to the Future

It looks as if Sarsfield will continue to see strong growth. Capital is not a problem. For the most part, the necessary people can be found. Market opportunities are beckoning in the US. Len sees no reason why the company shouldn't keep growing at strong double-digit rates, and could become a $150-200 million operation within relatively few years.

Both Len and Kirk say Sarsfield's long-term goal is to become "the largest high-quality pie manufacturer in North America." Says Kirk: "If the fruit resources are available here, we can do this." In all likelihood a US plant will become a necessity, both in order to be closer to more raw material and to the market there. Will Weston continue to make Sarsfield the headquarters of the operation? The response from Kirk McGrath is fast and firm: "Absolutely, yes."

PART III:

DISCUSSION AND ANALYSIS

OVERCOMING OBSTACLES – MAKING THINGS WORK

Overcoming Obstacles -- Making Things Work

Introduction to the Discussion

The firms in this project all realized that to make sense of their businesses, they would have to go out of the region because their markets here are either very small or non-existent. Using their primary resources -- their people, their intelligence and their commitment -- they have brought together other resources and applied them in developing business activity elsewhere.

In order to do this, they have found ways to overcome the multitude of hurdles they face. Some of these are the same as those faced by any business anywhere; some of them are related to natural results of physical isolation from their markets or suppliers. But many of them are "artificial" barriers resulting from the human institutions with which they have to relate.

The effort expended in overcoming these artificial obstacles represents a major "energy sink" which wastes precious time and human resources. This energy sink is a major drag on the healthy development of these businesses, since it diverts and sucks out valuable creativity in support of unproductive pursuits.

It is only due to their tenacity and exertion that these companies have managed to deal with such obstacles. They have a kind of terrier-like quality which finds a way around problems, wherever they arise.

- How have these people gone about drawing together the resources necessary to make their businesses work?

- Where did they find those resources?

This section describes some of the themes that emerged from discussions with the 20 companies who participated in this project.

Why are these Companies Here?

During the interview process, we asked each of the companies what they found to be the main strengths of working from an Atlantic Canadian location.

Intangible Attractions

In particular, it emerged that many of the companies find the intangible attractions to be important.

Quality of life

The quality of the physical and social environment and the fact that people feel the region is a good place to live were explicitly cited by more than three-quarter of the firms participating in this project. This was the single most commonly-stated reason for wanting to run a company from here.

- Metals Economics Group moved to Halifax from the US for personal and life-style reasons, and have found the friendliness of people to be a real asset. "It is shocking and pleasant to discover how friendly the people here can be. Every day you meet nice people and there is a pleasant exchange in business situations. People in our company who have families feel that they are safer here. It is considered a better place to raise a family."

- Others commented that "Halifax is a very nice city to live in."

- The quality of life extends to the quality of work. Diagnostic Chemicals in PEI finds that "people are satisfied to work here, and the comfort of PEI breeds creativity."

- A newcomer to Jacques Whitford said: "Being here is a life-style choice. We should be attracting people here on the basis of lifestyles -- this is culturally and socially a very pleasant place to live. We should take steps to protect the quality of life here."

An attractive environment for customer visits

The quality of life in the region provides positive benefits in other ways also.

- GN Plastics makes a point of inviting its international customers to visit them in Chester. The Nova Scotia location is often an advantage. "People who come to see us here are amazed at the space and the environment. They perceive that the quality of the environment is reflected in the quality of the product. The Japanese think we're in heaven here.....it's a plus that the plant is located in a rural seaside area."

- Tri-Star Industries in Yarmouth also takes advantage of Nova Scotia's attractions and the absence of big-city hustle. "We can provide personal service when customers visit us here, and inviting customers to a lobster boil has always been a grand success."

Location not Necessarily an Obstacle

A number of companies in the project find that the physical location presents very little problem, despite distance from markets and suppliers. Proximity to an international airport and/or the port of Halifax is often viewed as a plus.

- Efamol finds their location conducive to focused research and development activities. In their work, having access to a good, stable workforce is more valuable than being near a market.

- Precision Biologicals finds that it can relate directly to customers all over North America, and ships perishable products overnight into the US as part of its core business.

- Focal Technologies comments that "the supposed disadvantages of being located here are mainly in the perception of customers" -- a factor which could be changed over time.

- Don Elder, a relative newcomer to Jacques Whitford from New Zealand via England said: "There are no barriers to working out of Nova Scotia. The only barriers here are in people's minds."

Canada in the Global Environment

Several companies noted advantages to doing business as a Canadian.

- Focal Technologies says that one of the strengths working in international markets is that "Canada has a fine image in the world."

- Spots Pots finds attitudes of their US customers to be extremely good. "Nova Scotia represents the real thing in terms of homey and cozy as opposed to products coming out of a big place like Toronto or California where they pretend to develop products to look as if they were made in a small quaint place."

- Jacques Whitford has found that people like to do business with Canadians. Canada generally has a good reputation in the international sphere. Being a Canadian company also has advantages in international markets, since most Canadian firms have lower staff costs compared to firms operating out of the US and some other places.

- Tri-Star Industries finds it quite advantageous doing international business as a Canadian company. "The Canadian culture is more attractive to people in comparison to the US. As Canadians, we tend to listen more, which is what our customers like."

The Primary Resources -- People

What are some of the key success factors exhibited by these companies? There are many. Each business has its own unique dynamics and there is no one formula for success. Different industries call for different strategies. Different markets present different challenges.

In every case, however, it is clear that the real resources of the firms are *people*. Most of these companies could be operating from anywhere. Only three of them (Acadian Seaplants, Sarsfield Foods and CanJam Trading) rely directly on local raw materials, and even they do not need to be here for that reason.

Key Leadership Traits

All of these firms are still small enough for the influence, style and energy of the founder or entrepreneur to exert a visible influence on how they are run. Approaches to leadership vary greatly; some companies have a more hierarchical "top-down" management style, while others are run with a light touch and a broad, consensual approach to decision-making. Some place emphasis on the role of the founder as "boss," while other founders say they would like to work towards having the business run without them -- or even that it already does run better when they are not there.

Despite the variety of styles and personalities, in every case the people in charge of running these companies stand out in that:

They are passionate about what they do

- As one of the entrepreneurs said, "We eat, sleep and breathe our business -- 28 hours a day." These people are extraordinarily committed; they bring a tremendous level of creative energy and curiosity to their work and they enjoy what they do. Many of the firms were created because of a long-standing interest on the part of their founder,

whether that be in designing electronic circuitry or as a professor of chemistry or as an art student. There is no mediocrity of interest here.

They focus on results, not efforts

- The people who run these companies are concerned about the *results* of their actions, not the fact that they have put a particular amount of effort in. They are not clock-punchers. When something needs to be done, they move on it. They get things done by consciously shaping their world. As one CEO put it: "Things happen because I *decide* that they are going to." They like employees who share the same commitment.

They are extremely tenacious

- There is nothing half-hearted about the energy they bring to their activities. When they decide to do something, they *do it*. If it doesn't work, they *change it*. And if they don't find the right opportunity, they *try again*. As one of them said: "You have to be an optimist. And a workaholic. And you have to *never quit*." Many hurdles have to be jumped in doing business in distant places, both at a strategic level and in day-to-day transactions; but as Grace White of CanJam Trading put it: "I'm a good hurdler."

They understand a niche when they see one

- The people in these firms are often able to see gaps where others see solid walls. The competitive environments they are in act as a provocation to find ways to provide better service, or re-fashion the way value is delivered, rather than as a signal for defeat. One company said, "We constantly try to develop new things for our industry; when we recognize a gap, we try to fill it."

They focus on delivering quality

- Everyone talks about quality. But the people in these companies really try to make sure that they *deliver* quality. This is one of the key ways in which they are able to win the respect of their customers and continue to build their businesses. Steve Fudge at Jacques Whitford told us: "We strive to do quality work, on-time, on budget. We will leap over tall buildings for our customers -- and do so at a reasonable cost."

They take their customers' point of view

- If they did not always have this attitude, the companies in this project have come to understand the power of seeing the world from their customers' point of view. They then use their flexibility and speed to adapt themselves, their organization, or their products to respond. For example, Precision Biologicals came up with an entirely new product line based entirely on a focused "customer listening" campaign.

They know the value of being fast and flexible

- These firms are much smaller than many of their competitors. There are 10-person firms in this project competing successfully against divisions of billion-dollar US conglomerates. This is based on appreciating that the power of smallness lies in speed, responsiveness and flexibility. It is possible to succeed by using these unique small-company characteristics as tools with which to secure a position in a chosen niche. As one company commented: "We are known for quick turnaround....we get calls because we're fast." The low-overhead structures of these firms enhance their ability to respond quickly.

They have a sense of urgency

- The people running these companies generally bring a sense of energy and urgency to their actions; they know that opportunities will be lost if action is not taken when required. They become especially frustrated when supporting services or bureaucracies show no sign of understanding the importance of moving quickly. Finding employees who match the entrepreneur's sense of urgency is difficult for some; one participant remarked, "We have given up doing marketing from here because employees have a 'do it tomorrow' approach -- immediate response to existing and prospective customers is crucial."

They are not afraid to make mistakes, and they recover quickly

- Mistakes are frequently welcomed as part of the process; there is usually enough flexibility in the organization to make mid-course corrections in response to rapidly changing conditions. As one participant put it: "if you don't make mistakes, you'll never learn."

Desirable Employee Qualities

It is a truism that people are the key to an organization's success. But the issue of quality people came up again and again as a theme with this group of companies. Almost everyone in the project talked about the importance of having good people in the organization, especially in key roles. In a sense, the talent of the their people is the main export strength of these firms.

What do they mean by "good people"? In hiring, a number of strong themes emerged in terms of the qualities these companies focus on when they are looking to bring new people in. In general, the most important characteristics that these firms look for are:

Attitude

- Time and time again, the attitude of the people working for these firms was cited as a more important attribute than any other. It generally came at the top of the list, ahead even of technical skills -- it is assumed that the requisite skills are present, but this is just the starting point. Many firms have difficulty hiring, despite being inundated with hundreds of résumés for a job. The issue is attitude. Various companies described the necessary attitude in terms such as "a spark," "the lights are on" and "hard-driving."

Initiative and the ability to take charge

- One participant described a key thing they look for in people as "the ability to take charge." Without having people willing to take responsibility for action within an organization, nothing can possibly grow. Several firms noted that while team work is essential, new projects need a *champion* to get them off the ground. Otherwise, things "drift around in a group" and never get beyond the supervisor's desk. Someone has to get the ball rolling. Most of these companies require their people to *make* markets, not just respond to them.

Commitment, enthusiasm and intelligence

- The stress on the importance of attitude extended all the way from the staff needs of the high-tech companies in the project to the characteristics sought out in hourly plant workers. They look for people with the right kind of commitment, enthusiasm and intelligence. As one employer put it: "we need people who are interested in what they're doing -- who get obsessed." It is not unusual for the staff in these companies to be working long after the official workday has finished. Some of these companies are restricted in their growth because they cannot find people with the right kind of interest or commitment.

Creativity

- Many of these firms looked for creative problem solving abilities in their employees. For example, Sarsfield Foods has an active continuous improvement program in place, and seeks out people who can participate intelligently. Some of the higher-tech firms call on the creativity of their people as a key part of their organization. Efamol removes all administrative burdens from its research people, and assumes they will take responsibility for their own schedules. They are "constantly looking for people who can work this way."

Willingness to take a chance

- These firms typically encourage risk-taking in their people; they recognize that without being willing to take a chance, nothing new can be created. This can only take place in an atmosphere in which mistakes are accepted and flexibility is the norm. Don Elder at Jacques Whitford recalled a time when he made a decision that did end up costing the company money; he remembers being told, "at least you made a decision."

▼ These issues raise questions about how "the right stuff" can be taught in terms of employee attitudes and approach. It appears that an innovative company culture is readily communicated to new employees. Wider exposure to innovative environments for students and others in society could help transmit a creative attitude of mind.

▼ What can be done within the educational system to encourage the characteristics described above?

▼ What incentives could be put in place to attract people with the attitudes these firms are looking for, or what activities would help foster and develop the energetic turn of mind they value?

Accessing Human Resources

Some of these firms had tremendously positive things to say about the quality of the workforce they are able to draw upon in the region. On the other hand, some had difficulty finding people with the right mix of skills, experience and attitude. And others find they have to go out of the region to bring in key people, because there is no relevant pool of talent to draw on locally.

The experiences of participating firms in finding people with the appropriate attitude and skills is one of the most striking mixed messages of the project.

Positive Characteristics of the Workforce

About half the firms expressed very positive views about the quality of the workforce in the region. These positive views range all the way from the software programmers that Prograph has found and trained locally to the plant workers at Sarsfield's operation in Kentville.

The quality of employees available in the region

The positive things firms had to say about the quality of employees in the region were broad ranging.

- Efamol, with a large complement of well-trained technical people, regards the quality of staff available here as a big plus: "We have a very good quality staff. We have been able to bring together a long-term core of excellent people. We're not competing with the large companies to get these people, and if they come, they stay."

- Diagnostic Chemicals in Charlottetown finds that the only real disadvantage to being where they are is distance from their markets. People, on the other hand, are a plus. "The manpower is here in terms of high-quality people."

- Fenwick Laboratories agrees. They find that "there's an abundant supply of well-qualified, well-motivated people here."

- Metals Economics Group has been pleasantly surprised by the "great wealth of people to choose from."

The stability of the workforce

Turnover does not tend to be a problem for most of these companies. This fact may result from the lack of alternative employment opportunities, but for whatever reason, it results in a very stable, loyal workforce.

- Companies as diverse as GN Plastics, Nautel, Diagnostic Chemicals, Sarsfield Foods and Efamol Research made specific mention of the fact that they have a very stable workforce.

- Orion, among others, notes that their employees are extremely loyal.

Low turnover "pays off in the quality of the product," as one participant put it. That is especially true if there is a custom or craftsmanship component to the production process.

Bringing home highly skilled Atlantic Canadians from around the world

Once a firm develops to the point of becoming an attractive place to work, it is often able to draw people back to the region who had left many years ago. Many of these people have gathered valuable experience working elsewhere.

- As one company said, "It's always a plus if you can get somebody who wants to come back, because you know they like it here."

Attractiveness to newcomers

The region is not only appealing to returning Atlantic Canadians. Several firms noted that they have no problem whatsoever in attracting high-quality people here from many parts of the world.

- Jacques Whitford says that "lots of our new people know nothing about Nova Scotia when we hire them. It's not a problem getting them here, nor to keep them here after they've come."

Lack of poaching by competitive firms

While the small pool of available people is a difficulty when hiring, it also acts as an advantage; once the right person has been found, there is not much poaching by competitive firms.

- "In other places," Diagnostic Chemicals notes, "the competition for attracting high-quality people is pretty intense."

This contributes to the stability of the workforce and can be used as a way to enhance overall staff quality. It also makes for a less fearful environment, since employers do not have to constantly be looking over their shoulder at another firm which may be competing for their employees.

Negative Characteristics of the Workforce

On the other hand, many firms encounter difficulties finding people with the right mix of skills, experience and attitude.

A major issue is the lack of experienced people to draw on in any particular field. This is the "flip side" of the fact that there are few competing firms to poach a company's good employees away. A number of firms noted that the lack of companies working in similar fields means that they cannot readily gain access to particular skills.

In the absence of any strong "clusters" of companies in particular areas, there is no opportunity for the cross fertilization of energies and talents which is typical in more well-developed places. These companies are therefore unable to benefit from the ongoing experience and know-how which is naturally available in other environments.

This contributes to the dangers of isolation which are discussed later, and must be compensated for through special efforts to mix in with other players in the industry.

In addition:

- It is sometimes difficult to find employees with the most desirable characteristics. Cristian Worthington points that while labor costs are lower here, that may be "a false economy" since lower productivity is also common.

- Some companies find they have to deal with absenteeism problems, which apparently derives from "an ingrained poor work ethic," as one company put it.

- Several companies expressed the opinion that the educational institutions prepare students poorly for the rigors of the business world. As a result, prospective employees often lack "real experience, the kind that is useful in business" as one CEO put it.

- Precision Biologicals, among others, has found that lack of initiative in prospective employees has been an obstacle to hiring. They have found that "both business and science graduates are often ill-prepared for the realities of the business world."

- Diagnostic Chemicals cites a dearth of good management and marketing skills as one of the weaknesses of the region for smaller employers.

- Other study participants noted that the comfort, pay, and perks that many people associate with institutional jobs have created false expectations about salary, benefits, and the level of work required. But as one CEO noted: "Atlantic Canadians need to realize that there are no more institutional jobs."

The issue of the quality of available people is a big one. Some firms have no difficulty in this area, while others find the situation to be quite problematic. Each company attempts to address this in a way that best suits their situation and experience.

Employee Participation and Incentives

For a number of companies, rewarding employees for a job well done (through performance-based bonuses, profit sharing or stock ownership plans) is a critical part of their compensation package. Many companies deliberately pay above average rates, at least within a private-sector context.

- Jacques Whitford is unique in the breadth of employee ownership within the company. In fact, if a key new person has not become a shareholder within a year or two, the company considers it has made a hiring mistake. Almost one-third of the staff own shares in the company, and a substantial portion of compensation can come from profit-sharing and bonuses.

- Efamol has a stock option plan for key employees.

- Diagnostic Chemicals allocates up to 20% of pre-tax profits for distribution through a profit-sharing plan.

- CanJam Trading recognizes the contributions of its staff through a substantial profit-sharing plan.

- Sarsfield Foods has a "profit-sharing dividend" program that is paid to all employees based upon "profit" targets for the year.

- Precision Biologicals has instituted a substantial gain-sharing plan involving the entire staff.

- Other companies attract key people by offering good base compensation package, together with the opportunity to grow with the company.

It is rare to find a firm among a group like this which does not pay particular attention to developing an attractive employment environment for its people. In order to do creative work, people

need to feel that they are able to contribute fully and that they are appreciated for doing so.

The message regarding the workforce seems to be:

- Find local talent if you can. There is a lot of good skill available.
- If you need specialized technical skills or certain managerial or entrepreneurial talents, you may not be able to find the employees you need locally. Plan your recruiting accordingly.
- Look for people living elsewhere who were brought up in the region. Many of them would like to come back, and they have developed valuable skills in their absence.
- Pay attention to compensation and incentives. Employees who feel well appreciated can contribute significant extra value to the enterprise.

Accessing Technical Resources

The ability to access technical resources is essential to the development of many of these companies. Many of them work in some way with universities, federal and provincial research organizations, as well as technical or community colleges.

Drawing on a Valuable Local Resource

In terms of research and development support, some firms have found ways to work very effectively with the local universities and research institutes. There seems to be some reluctance on the part of many of the institutions to take a pro-active role in developing collaborative relationships -- often the initial attitude is that "it can't be done" -- but if a team can be put together and led by an active champion from the company side, many firms have seen very positive results.

- Acadian Seaplants, for example, counts among its key success factors its ability to draw together strong teams to work with in its R&D programs. They have collaborated with virtually all the institutions of higher learning in the region, and have found the technical human resources available here to be excellent.

But this is not easy to do. The process has to be initiated from the company side and driven by the private sector. The people who can work on these collaborations are not necessarily obvious:

- As Louis Deveau of Acadian Seaplants says: "You have to hunt for these people, but they're incredible when you can find them."

The experience of firms in this arena is quite varied -- it seems that the university system itself is full of opportunities which, if seen and understood, can be grasped.

- As one participant put it: the ability to work successfully with university researchers is "investigator dependent." This means that the experience of doing collaborative

work depends largely on the personal relationship with individual scientists.

▼ The distinguishing mark of those who can find value in the system seems to be the "terrier quality" of the entrepreneurs. The resources are there, but they have to be sought out.

Working with Institutional Issues

A number of participants found that the universities are not very flexible. Others found that the real-world relevance of training being provided in the university system is minimal. Several firms have faced challenges in this area; many firms would like to see more done in the way of co-op programs with educational institutions.

- Efamol would like to see much more facility for collaborative work with the universities, noting that "it often seems much easier to establish collaborations in Vancouver, Ottawa or the UK. The academic system needs to adopt greater flexibility and there are signs that this may be happening."

- Jacques Whitford is not entirely satisfied with the quality of the educational system here. They find a mismatch between current requirements and the training being provided in the educational institutions.

How do these firms deal with these issues? They seek out the resources locally wherever possible; they work with them if they can; and they go to centres of excellence outside the region in order to gain access to the relevant technical resources.

▼ More constructive and fruitful interactions between business and the educational system are needed. Many of the companies felt that existing linkages are not adequate.

▼ More cooperative programs at both undergraduate and post-graduate levels would help create closer links between the companies and universities.

Accessing Financial Resources

Many firms reported difficulty accessing the necessary financial resources for development and growth, although most have found some way to deal with this obstacle.

Most firms have either:

- relied on internally generated funds;
- leveraged the available government money as best they can (and dealt with the frustrations and delays that go along with the process); or
- gone outside the region for financing.
- Some firms have raised private money locally, but this has almost always been on a small scale.

Each firm has taken a unique approach to this issue.

The Lack of Risk Capital

It is well known that there is virtually no venture capital in the Atlantic region. There is no broad tradition of active private investment in local enterprises and no formal pools of equity capital exist.

This is an unusual phenomenon in the North American context. Active pools of private venture capital are almost always linked to healthy private-sector growth. There appear to be several reasons for this situation.

- There are various government programs which attempt to act as a proxy for risk capital. Whether these programs exist *in response to* the shortage of private risk capital, or whether they act as contributing factors *to* that lack of risk capital, is an interesting question.

- Many entrepreneurs are leery of taking in outside investment if they can avoid it. It is hard to determine whether this results from the existence of government programs as a proxy, or from the lack of intelligent and supportive private capital to help fuel growth.

- There is also sometimes a skeptical attitude on the part of prospective investors, who have few role models to look to. Several firms experienced resistance from potential investors outside the region.

These factors conspire to weaken the private-sector investment climate, which in turn means that new successes are not being generated or are not known about.

Clearly, there are problems with the existence of government money as one of the few sources of early-stage and risk capital. This is a complex issue which is discussed further in the next section.

The Self-Financing Option

Many companies have taken the slow-and-steady growth approach, ploughing back profits year after year in order to build over time. This has the advantage of exposing them less; as one company put it: "fast growth is equal to high risk." These firms generally belong to a group that regards selling equity as a last (and undesirable) resort. Their founders believe strongly in maintaining control, if not 100% ownership.

There are many good reasons for this approach -- past problems with partners who later had to be bought out, for example. These firms may select government financing as an attractive option because it does not require them to give up equity. Many others simply do not use government support. They are either "too profitable to qualify" or have no time for the bureaucracy and delays inherent in the government financing process.

Getting the Most from Government

Many firms reported that government financing sources have been instrumental in their development. Companies as diverse as Acadian Seaplants, Atlantech Extrusion, Diagnostic Chemicals,

Sarsfield Foods, Spots Pots, Prograph, Efamol, and Metals Economics Group each had positive things to say about the helpfulness of the government financing they have received at one point or another. The R&D tax credit system was cited by many as being especially effective and valuable. Its simplicity is one of the main attractions.

A uniquely Canadian situation

From the point of view of firms with strong links to the US, these financing options are contrasted favorably with their experiences elsewhere; they are unusual by US standards.

- Metals Economics Group noted: "The government agencies were very pleasant to deal with; just the fact that these grants existed was great. It's not something available in the US."

It can be very worthwhile

- Diagnostic Chemicals has found the experience of working with government to be "very positive for us -- we have taken advantage of anything they have to offer."

- Efamol views the role of government as having been "crucial" both in their original decision to move to Nova Scotia and their continuing activity here.

- Acadian Seaplants considers the availability of government assistance for R&D as being essential to its success. "If they were to cancel all the government programs, the ones we'd fight the hardest to keep are the ones that help support R&D and marketing."

- Salter Street films strongly endorses the "smart subsidies" that allow businesses in certain industries to reduce their net costs.

Many problems due to unresponsive time frames and red tape

Working with government is not without its problems, however.

- *Every single company* in this project reported significant problems working with government on one front or another.

These issues are discussed in a subsequent section of this report.

Going Outside the Region for Capital

Those who needed capital which they could not find locally often sought funding elsewhere.

- Worthington Software brought in investors from British Columbia, the United States and England.
- Prograph has drawn together investors from a multitude of sources, including the US.
- Efamol Research linked up with an English company in the mid-1980s, and subsequently became a subsidiary of the original UK partner because it was unable to raise money locally. The parent company that Efamol helped spawn has now gone public on the London Stock Exchange.
- Sarsfield Foods sold to an industry player based in Ontario.

Some major benefits to external capital

The use of external capital in these cases has generally led to some important benefits: the involvement of highly experienced international business people.

- Worthington's board now includes people associated with a US-based multinational firm as well as Britain's Hanson Trust.

- Efamol's board now includes the former CEOs of Rolls Royce and a major British bank.

These connections have helped to open doors and develop business in significant ways. Both of these firms attribute their growth in part to the experience and contacts these outside investors brought to the table. This is a contribution that no government program can make. Interestingly, neither of these firms expressed any regrets with their decision to bring in outside investors.

- Cristian Worthington put it this way: "Selling equity is not regarded as objectionable in most parts of the world....the best quality investors are *not* the silent ones."

Implications of working with outside investors

Outside investors can sometimes create pressures for these companies to leave the region to go to a more favorable environment.

- Prograph believes it could raise a lot more money if it moved to the US, closer to the venture capital sources which are interested in its activities.

- Efamol would possibly have left the region if not for government financial contributions to a recent expansion here.

- Worthington Software is uncertain how long it can reasonably base its operations here.

These facts draw attention to the need to create a competitive business environment in which outside investors feel welcome. At the same time, there appears to be considerable reluctance on the part of many of the entrepreneurs to take on private partners. It is ironic that many of those firms which have been successful in bringing in outside investors have come to appreciate the non-financial contributions that good investors can make.

Working with the Banks

The experience of these companies with the banks is varied. Many of the more established companies profess to have "excellent relationships" with their banks, and do not regard this as a problem area.

Others, however, complain bitterly about the lack of flexibility on the part of the banks. These complaints do not appear to come from companies whose track record might make them unbankable. Often it derives from not having hard assets to offer as collateral.

- One well-established service company has great difficulty undertaking its ordinary business development activities because its bank refuses to advance any funds against its foreign receivables.

- Another company has found the banking environment here to be very cumbersome and difficult, especially in comparison to its experiences in other places.

- Some of the complaints relate to lack of local decision-making power; several instances were cited where relatively simply credit decisions had to be referred from Halifax to Toronto. As a result, negative outcomes are common.

- It also appears that the banks have no ability to evaluate the real quality and strength of firms in which the assets "walk out of the door at the end of the day."

It is clear that many financially healthy companies are constricted in both their month-to-month operations and their growth potential as a result of lack of credit due to uninformed or unresponsive banking approaches.

▼ **The banks have a particular, although limited, role to play in the development of innovative companies. While risk-taking is not their role, contrasts with banking attitudes in other jurisdictions are marked. Ways need to be found for banking functions to be provided in a manner which provides the right level of support for the activities of innovative companies.**

The story with financing seems to be:

- Use your own resources wherever possible. This creates the most flexible and efficient situation.

- Do not expect to access much private money locally. It undoubtedly exists, but few local investors are familiar with the needs of growing companies, and no pools of venture capital currently exist in the region.

- Be patient if you plan to work with government. Be sure that deadlines are not important to you.

- Make contacts outside the region if you need private money, and make use of the entrées these investors can provide to new opportunities.

- Don't look to the banks for help where there is risk. If you are profitable enough, and have the security to offer, you will probably be able to work with them in a satisfactory way.

Getting to Market

The firms participating in the project sell in a wide range of different markets. The following are some of the key issues they identified in building their export businesses:

Identifying a Niche

Without exception, all the companies have identified a very specific niche and have found a place within it.

- For Sarsfield, the niche is fresh frozen fruit pies.
- For Spots Pots, it is based on the unique look of their hand-made products.
- For Tri-Star, it is the custom ambulances that larger manufacturers do not have the flexibility to make.
- For GN Plastics, it is one type of machinery used in a specific part of the packaging industry.
- For Metals Economics Group, it is information services addressing the specific needs of a particular industry.

None of these companies tries to be all things to all people. They know what they are good at, they understand their market, and they work hard at adding further value for a narrow group of customers.

Focusing on Core Strengths

In order to serve a narrow niche well, each of these companies makes a point of focusing on its core strengths.

- Fenwick Laboratories continually builds its expertise in the field of environmental testing, focusing efforts on improving efficiency and adding value to the output.

- Orion Electronics makes a point of sticking to its core expertise in electronic tracking technology.

- Precision Biologicals' customers appreciate the high level of service the company provides; the company focuses on exceeding expectations in that respect.

- Canadian Fishery Consultants takes care to avoid straying into areas in which larger competitors could outgun their particular expertise.

Establishing an Export Base

The companies each took a slightly different approach to the way in which they established their export business. In some cases, they built a local or domestic business first.

- Sarsfield started by selling pies up and down the Annapolis Valley.

- Nautel established a reputation in Canada before attempting to go overseas.

However, many of the companies had no local market on which to build their initial business. If the niche is specific enough, and the market approachable enough, this works.

- GN Plastics first sold in the US and expanded into several other overseas markets (including Australia and Malaysia) before ever making a sale in Canada.

- Diagnostic Chemicals found the Canadian market to be very difficult and competitive; they started to do much better when they went into the US.

- The major part of Prograph's market initially developed in the US.

- Some firms, such as Metals Economics Group, do not even think in terms of "exporting" -- they are just selling to their clients, wherever they happen to be located.

The question of how to enter into export markets in the first place depends heavily on the circumstances of the business.

Forging Linkages

Forging linkages with other (often much bigger) companies is sometimes beneficial.

- Orion Electronics is seeing tremendous growth in business, in part as a result of an association with a multi-billion dollar US corporate partner in a particular niche.
- Jacques Whitford figures that to get into a Chinese market, it is essential to enter into a joint venture with a local partner.
- Fenwick Laboratories has made a strong relationship with a billion dollar company which provides access to a network of similar firms across North America.
- Sarsfield Foods decided to sell to a larger company in the business, largely in order to provide the linkages necessary to enter new markets in a strong and credible way.

Developing a Good Reputation

In the narrow market niches occupied by these companies, the power of good word-of-mouth is crucial to their success. These firms are not in mass markets; they do not influence their buyers through TV or any other medium. For the most part, the selling is done through business-to-business transactions. Most do not advertise at all. Again and again, they commented on the importance of informal networks within their market places.

- Nautel, whose customer base is very well defined, meets the same group of players at international trade shows, whether in Nevada, Holland or the Philippines. They all talk to each other, so credibility and reputation is critical.
- Canadian Fishery Consultants depends for future business on a large network of colleagues and contacts.
- Focal Technologies has become the world leader in the marine slip rings market; its products are widely known as the "Nova Scotia slip rings."

- Salter Street Films relies on credibility and reputation built up over many years to enter into new areas of business and obtain financing for new projects.

- GN Plastics develops new markets for its products almost entirely through the recommendations of satisfied users and other word-of-mouth referrals.

Building on Relationships

Several companies expressed skepticism that the process of exporting can be taught except through experience. A key factor in many cases is the personal relationships with agents and distributors that are built over time.

- Salter Street Films markets new project ideas almost entirely through a network of contacts that has been built over many years.

- CanJam's trading business relies on relationships at both the selling and the purchasing end; a key success factor is the trust and confidence of their customers ("they rely on our word and they know they can count on us -- always").

- Canadian Fishery Consultants emphasizes the importance of building personal relationships; they take every opportunity to pay a visit to bankers, project managers and agents all over the world.

The approach to developing export markets is unique to each situation. Some of the key messages seem to be:

- Find out exactly what you do well -- and focus on that.
- Identify a niche -- and build from the base that provides.
- Work with business fundamentals first -- if your target market is all outside the country, you must export right away. If not, consider carefully where your best initial market is located. Some parts of Canada may be more receptive than others.
- Linkages with other firms, partners or suppliers can leverage export potential.
- Relationship-building and word-of-mouth selling go hand-in-hand with niche markets, which by their very nature have a relatively small group of customers.
- Pay a lot of attention to the service component.

Overcoming Obstacles in the Environment

A distinction needs to be made between:

- natural obstacles (such as physical location or isolation from markets) on the one hand, and
- man-made or cultural obstacles (such as government bureaucracy or lack of appropriate employee skills), on the other.

The former have to be accepted and worked with, while the latter can potentially be changed.

Dealing with Physical Obstacles

Firms overcome the physical obstacles they face in various ways:

Isolation from markets

The degree to which this is a problem depends on the nature of the product, the market, and the marketing approach.

- Diagnostic Chemicals addressed the issue many years ago when it opened a US sales office, which has paid off in terms of closer customer contact.
- Nautel does not consider itself to be isolated from its markets -- "we are exactly centrally located in our market, which is the whole world." It also has a US subsidiary.
- Metals Economics Group uses the phone continuously to maintain ongoing contact with all its major clients.
- Worthington Software's business involves a lot of travel to visit collaborating licensee sites.

- Sarsfield Foods expects to make frequent trips to its main markets in Ontario in order to stay close to its customers, in spite of the fact that a well-developed distributor network has been in place for years.

Isolation from suppliers

Isolation from key suppliers tends to be more of an issue. The main problems are:

- Increased turnaround time for delivery
- Fewer opportunities for the contacts which lead to closer relationships and better support
- Increased cost of transportation for incoming raw materials
- Higher cost (from missing special deals, and ordering in small lots)
- Less choice

This particular obstacle is not readily surmountable -- everyone has to deal with it. (There are also related costs based on customs problems, discussed below.) The best approach seems to be to develop good linkages with key suppliers and to iron out all the possible kinks in the delivery chain.

- Atlantech maintains a close relationship with its primary supplier in Germany.

- Precision Biologicals, which receives its major raw materials frozen by overnight courier service from the US, has developed iron-clad procedures for shipping incoming product, building on a cooperative supplier relationships and a close tie-in with one particular courier system.

Isolation from technical support

This adds both cost and time to the process of getting equipment up and running. In addition, it creates a lag time in improving efficient usage.

- Diagnostic Chemicals notes that closer access to technical consultants would enable them to utilize new technology more effectively and quickly.

Isolation from peers

Two of the firms whose businesses depend to a large degree on keeping up with events and relationships in their industry noted that being a long way from the action hurts their business.

- Metals Economics Group observes that its distance from the major mining business centres means there is no opportunity to discuss current topics and exchange information over informal business lunches and other social situations. Phone contact is not an adequate substitute, yet travel is both expensive and wearing.

- Salter Street Films also reckons that being out of the mainstream of the business is a problem. They don't have the day-to-day industry contacts, and they don't have access to the talent pool available in major centres. Michael Donovan deals with this issue by travelling extensively to major industry centres.

Isolation is not always a problem

There is no one way of dealing with the apparent problem of isolation. In some cases (and especially for companies selling on a world-wide basis), this is not an issue at all.

- GN Plastics, producing sophisticated machinery shipped all over the world, figures it can do as well from Chester as it could from more likely locations such as Toronto, Chicago or New Jersey. Visitors to the company's plant appreciate the environment and often comment that it seems to be conducive to producing good-quality products.

Several companies see certain other advantages in being isolated:

- It prevents poaching of employees and spying on processes.

- It enables them to get into competitors' sites in major market centres because they are not viewed as a threat.

- It forces them to address world markets instead of just local ones. One company noted that in a more populous area, small businesses often have the luxury of focusing on just their local markets.

- Isolation can provide a "think-tank" atmosphere more readily than is possible in a busier centre.

▼ Companies here have to turn their isolation into an advantage by focusing on niches in which they can succeed on a global basis.

Working with travel and transportation issues

Travel and transportation are other challenging areas. The degree to which these issues are problems again depends on the nature of the particular business. The high cost and time delays associated with the transportation of goods are particularly irksome to manufacturers.

- Diagnostics Chemicals' PEI location creates some problems for them in getting goods to market; this underscores the importance of their US office.

- Atlantech, in Cape Breton, has to face high costs associated with making small shipments; however, access to raw materials from Europe is relatively easy.

The service firms do not have to overcome difficulties with transporting goods. However, air connections (especially to Boston) came under strong criticism from at least six of the companies. The lack of quick and easy access to the US through Boston is clearly an impediment to many firms.

- Canadian Fishery Consultants finds the poor Boston connection to be a significant and frustrating problem.

- Prograph finds that the lack of good connections into the States through Boston extends the time required for trips south of the border, and hurts their ability to do business in the US.

- Metals Economics Group pointed out that, in addition to the high cost of air travel into the US, the slow connections into US destinations causes additional "wear and tear" on employees. Often, an overnight stop is called for which makes sales trips to the US a day or two longer than would otherwise be necessary.

- One company that flies frequently to and through the US opened the interview (unprompted) with a comment that the poor Boston air connections provide a stranglehold on development, with Air Canada's limited flight schedule effectively "holding the region to ransom."

▼ It would not take much to improve this situation. Better scheduling of direct flights to enable convenient connections into the US airline system is really all that is necessary.

The thin supporting and industrial infrastructure

Isolation is not the only hurdle these companies contend with. Atlantic Canada's industrial infrastructure is extremely thin. This affects a host of things, such as the availability of goods and services, the quality of local suppliers and service-providers, and the level of technological support in the area relative to the neighboring US economy.

The thin industrial infrastructure hurdle is a big one; it affects almost all the support services these firms rely on.

- For example, Orion Electronics is unable to obtain components at competitive prices or good quality paint with which to finish its products.

- Acadian Seaplants has experienced problems with the quality of packaging materials, resulting in additional expense and delays in delivering its products in good condition.

The thin industrial infrastructure (and the relatively uncompetitive environment for local suppliers) leads to problems of poor quality. Consequently, companies have to go to extra lengths to both (a) obtain the materials and services they require, and (b) ensure that what they obtain locally is up to the standards appropriate for their international business.

This results in part from the physical obstacle of isolation, and in part from the "man-made" obstacle of a relatively uncompetitive supplier environment, which is discussed below.

Dealing with Man-Made Obstacles

Many of the above issues arise out of the physical circumstances of the region. There is not much that can be done about them, short of increasing the population or changing the geography.

However, the same is not true of the man-made hurdles these companies are jumping over every day. These include:

Dealing with poor quality suppliers

The problem of poor quality at the supplier level was cited by over half the firms as being an obstacle, including most of the service providers and many of the manufacturers. Much of the poor quality seems to derive from lack of competition in local markets and a long history of protectionism.

How do these firms deal with the phenomenon? They badger and complain until something changes. Occasionally, they go elsewhere as an alternative.

This kind of infrastructure problem requires firms to work that much harder to generate high value for their customers, since some of the items that are basic to a larger centre are so difficult to obtain.

Printing came in for repeated criticism; at least five of the companies in this project complained bitterly about the poor quality and high cost of local printing work.

- Both Prograph and Metals Economics Group (firms with extensive exposure to American standards and prices) regularly get their printing done in the US.

- Canadian Fishery Consultants recently got a very nice brochure printed up in Singapore; proofs were delivered via fax in a week, and the finished product arrived on their doorstep by air within two weeks. The cost was *one third* that of the local competition.

These are examples of creative solutions to a perceived local problem.

Inventive firms will always find creative solutions to problems such as these if they impact their ability to provide appropriate service to *their* customers.

- The message is that in an increasingly global economy, even seemingly localized services like printing are becoming an international commodity.

- Local suppliers will eventually be forced through competition from outside the region to provide the levels of product and service quality required by these firms.

Finding a way through bureaucracy and red tape

Every firm, without exception, had some kind of horror story to tell about working through government bureaucracy and red tape. In some instances, this issue has threatened their health or survival.

These companies have generally found ways to work around these obstacles, but they waste a huge amount of time and effort doing so. It would be better if they could spend their efforts focusing on building export business rather than finding their way around rules and regulations.

Battling with Canada Customs

This a frustrating hurdle for many people.

- Canada Customs came in for criticism by almost every one of the manufactured goods exporters.

The specific issues are addressed in the next section.

Using communications

Most of the firms find modern communications to be quite effective and adequate. With competition in the industry, costs have come down substantially.

- Diagnostics Chemicals notes that the real cost of telephone communication is 20% of what it was 20 years ago.

- The extensive use of fax machines has also played a big part in reducing the isolation factor.

- However, Metals Economics Group still finds telecommunications costs to be higher than they are in the US.

For firms doing telephone research or sales, the cost of phone usage can be higher than the cost of physical premises, making this is a significant issue.

Some problems exist with communications networks

While overall communications receive generally positive comments, the two software firms in the group both complained strongly about the lack of adequate service in data transmission.

- For example, Prograph noted that they cannot get a lease line facility to link them into their San Francisco office at anything approaching reasonable cost. This puts them at a significant disadvantage against a software firm anywhere in the US, and possibly North America.

Overcoming regional prejudices

Many firms encounter no prejudices against Atlantic Canada; but it depends on where they do business. Six firms said they have been negatively affected by prejudices against the region. These arise especially in central Canada.

- Focal Technologies has found it to be a waste of time to attempt to sell in Ontario, since a frequent attitude is that "nothing good could possibly come from the Maritimes." (This view is mainly in regard to larger programs rather than component sales.) Focal addresses this by not putting much emphasis on trying to build business there.

- Prograph finds that prospective investors have a hard time understanding why a dynamic young software firm would locate itself in Halifax, of all places.

- Metals Economics Group senses that it loses business as a result of its unusual location.

- Efamol Research believes it is virtually impossible for a firm such as theirs to raise money in Canada, in part because of negative attitudes in Toronto towards Nova Scotia.

- What do these firms do in response to these perceptions? Since they do not have the time or money to change attitudes, they go somewhere else to find markets or raise money.

Dealing with an uncompetitive tax environment

Finally, there is the question of the tax environment. There is not much that any one firm can do about taxes; the question of tax policy is addressed more broadly in the next section, which relates to the role of government.

- People and companies complain about taxes all over the world. But the issue of taxes was raised as a major disincentive to operating from the region by almost half the firms in the project.

THE GOVERNMENT INFLUENCE – A MIXED BLESSING

About this Section of the Report

The previous section of this report addressed the first of two objectives: to highlight success factors of innovative export companies in the region.

- This section addresses some of the crucial ways in which the policy environment has affected the ability of these companies to establish themselves and grow. The purpose of this is to highlight some of the "artificial" obstacles which arise as a result of government policy and/or action.

A number of the structural obstacles encountered by the project firms relate to public sector policies and actions. Given the large influence of this sector on the regional economy, it was felt that these issues merited a separate section.

All of the companies in this project have found some way to work with, or work around, these issues. But they represent major resistance points in the environment. Some of them are significant enough to present insurmountable obstacles to other people. Their reduction or removal would clearly help foster the formation and growth of other innovative companies.

One of the most vexing problems in today's economy is finding the appropriate role for government, because clearly government's role is changing and must change further. This study of innovative exporters points to some of the key challenges to government in this region as it changes in response to the kinds of radical changes taking place in the economy at large.

Countries such as Canada, Japan, Germany and others have a view of government's role that has generally been more encompassing than those in other jurisdictions. The challenge is to find ways to retain the positive aspect of government's contribution to economic health, while removing impediments to private-sector growth. Those impediments generally derive from outmoded models of government's role.

The Large Government Presence

Any discussion of economic or business issues in this region is inextricably linked to the pervasive role of government in the economy.

Government in the region not only plays the role of the setter of policy; it also acts as a deliverer of services in many sectors. As such it is a major direct and indirect employer. A government presence appears in the sphere not only of legislation, economic and social policy, education and healthcare, but also in finance, banking, export promotion, tourism, training, transportation, manufacturing, laboratory services and liquor retailing, to name but a few.

As a major delivery system for so many services, arms of the government are also therefore consumers of many products and services -- which are provided either by the private sector or by other government agencies.

The Military Presence

The role of government is further extended through the large military presence in the region. The Department of National Defence has almost 14,000 direct employees in the Halifax Metro area alone. Using a common multiplier factor to account for the other employment created as a result of these direct jobs, this translates into something in the order of 27,000 jobs derived directly or indirectly from the military presence -- about 18% of all Halifax Metro jobs. Similar situations exist where other military bases are located.

Multiple Layers of Government

Then there are the multiple layers of government. There are the federal agencies, the provincial agencies, and the local or municipal agencies. At the provincial level, there are effectively three versions of every government agency in the Maritimes

alone. This vast government infrastructure acts in the service of a population of under two million people.

In very real ways, the private sector in the region is captive to the interests of government. No company operates in the region without having multiple points at which it interfaces with government agencies. By international standards, there is an unusually high degree of government influence on the economy. Some companies have more dealings with the government than with their customers.

What is the effect of all this government activity?

Benign in Intention, Debilitating in Effect

Without question, the intention of almost all the government agencies is benign. This is not a police state, seeking to control the every movement of its citizens. On the contrary, there is a stated desire on the part of the government agencies at all levels to help encourage economic development.

This has led to a number of programs at the individual company level, with the goal of supporting research and development, assisting start-up and expansion financing, promoting exports, and enabling new technical skills to be brought into companies.

At the level of personal interactions, many companies in this project commented on the pleasant and positive nature of government contacts.

- Diagnostic Chemicals describes their experience working with government as being "very positive."
- Spots Pots comments that ACOA has been "very helpful in helping us get into our Burnside location."
- Efamol reports that many of their dealings with the provincial Nova Scotia Business Development Corporation have been "a miracle of efficiency."
- Prograph appreciates the role government assistance has played in developing their product.

- Many other companies described the impact of government financing on their businesses as being "positive", "crucial" or words to that effect.

However, as the experience of many of the firms in this project demonstrates, the overall effect of the high level of government activities on the economic health of the region is questionable. Eighty-five percent of the participating companies expressed serious concerns about the negative impact of some government activity or another on their ability to do business efficiently.

In addition, government activities can in some instances have unintended side effects, such as:

- The unwitting distortion of private-sector incentives, which can lead to a discouraging environment for the creation of pools of private capital.

- Wage-rate and other forms of government competition with the private sector.

- The weakening of private-sector capabilities through the low incidence of outside service contracts, which, if more broadly used, could strengthen the ability of private firms to do more export business.

- The slowing up of business activities resulting from burdensome bureaucratic processes.

If wealth-creating companies are at the heart of a strong economic base, then the various effects of government on their activities need to be examined further.

Effects on the Business Environment

As the place where policy is established, government lays the ground rules and sets the guidelines within which private organizations operate. As noted earlier, the influence of various levels of government in the Atlantic region is particularly strong. There are many historical and cultural reasons for this which need not be addressed here.

Every policy decision affects the system of implicit and explicit incentives in place. Those operating in the environment have no option but to respond as best they can to the structure of interlocking policies. The question is, what effect do they have on the business environment in general, and specifically, on the innovative export companies that are the focus of this project?

The Financing Environment

Despite the fact that many firms express satisfaction with the overall attitude of government in these transactions, there are a number of adverse effects on the business culture which arise from the extensive reliance on government sources of finance.

First and foremost, it creates dependency.

Absence of a private investment culture

Government's role in financing business has helped to create a culture in which private investment in local business is very under-developed. There is no venture capital to speak of in the region, and very little experience on the part of private investors with the needs of growing companies. Several companies in the project referred to this issue. Without access to private finance, they either starve for capital or go outside the region to get it.

- Efamol, for example, could have been the parent, not the subsidiary of its group if dynamic venture capital had been forthcoming when it needed it.

- There is no "fast-track" system for public offerings appropriate for smaller firms.

- There are only a couple of dozen publicly traded companies based in the region, and most of them are either utilities or resource-based companies.

- The unusual lack of active public markets related to the region's growing companies aggravates the "early-stage" investment problem, since it drastically limits the range of exit routes available to early-stage investors.

- The absence of interest in this area tends to encourage more successful companies to remain very "private" organizations. Their progress is not widely acknowledged or appreciated, and there is no opportunity for local involvement in their development or success.

The widespread reluctance on the part of many firms to accept financial partners into their businesses may in part be associated with historical issues surrounding predatory business practices on the part of a few large interests in the region. The benefits associated with active, knowledgeable investors are not generally appreciated. "Venture capital" is often viewed as "vulture capital."

Role of government in discouraging private investment

Government frequently plays a key role in financing decisions made by private firms. One firm in the project was strongly encouraged by its bank to go to ACOA, more or less as a precondition to the bank's involvement in a financing package. Many other firms structure their financing needs to fit the requirements of a particular government program, adapting their own view of their needs accordingly.

The effect of all this government involvement in the financing sector is three-fold:

- First, entrepreneurs become accustomed to the notion of raising money without making relationships with investors.

- Second, business people are often required to "adapt" their business plans in order to fit into the requirements of government programs.

- Third, the fact that government financing is an option means that private investors tend to stand on the sidelines. Why put private money at risk if there is a government program that might cover it?

The result is a situation where entrepreneurs would rather not take in investors if they can avoid it, while no investment climate is created on the "supply side" either.

This means that companies miss out on the benefits of receiving intelligent money -- money which brings with it the support, advice and discipline demanded by a private-sector view, for which no government involvement can provide a proxy. The best investors work to support the success of companies they invest in.

- As Cris Worthington, CEO of a company which has received outside financing, put it: "Successful money hedges its bets by helping people."

- Metals Economics Group credits its survival through some difficult early periods to both the pressure and advice provided by some of its key investors.

The Tax Environment

Almost half the firms raised the issue of tax structure in the region as a major impediment to both growth and recruitment. While complaints about taxes are commonplace everywhere, the tax structure is an important factor in helping or hindering particular activities.

The tax structure encourages flows of private money through the incentives and disincentives it provides. A clear policy regarding

which activities are to be encouraged would imply changes in tax policy which could make a big impact on these companies.

- The question is, to what extent does a particular government value the contribution that innovative export companies can make?

Deciding what to encourage

If the impact of export revenue earners is viewed as valuable, it would not be difficult to find ways within the tax system to encourage their growth. Other jurisdictions which put a high priority on exporting companies create tax incentives directed at their activities.

The tax environment is a matter of competitive advantage when it comes to international business. Within the rules set forth by the GATT, it should be possible to adapt tax policy to encourage innovative export companies, perhaps through:

- Special tax credits related to new export earnings.
- Tax incentives related to new employees working in these kinds of companies.
- Tax incentives related to the purchase of goods and services used by these firms.
- Substantial tax incentives related to equity investment in these companies, as an alternative form of government support. This would help build private-sector relationships, encourage the development of investment skills, and save money on program administration costs.

  Some efforts have recently been made by government in these directions, but they are not yet very vigorous.

- Some firms noted that that the large increase in corporate tax rates on annual income exceeding $200,000 encourages the distribution of earnings to the owners. This discourages the strengthening of a small company's retained earnings base, which is a key element required to fuel growth.

Public Sector as Competition

Several of the firms in the project noted ways in which the public sector creates direct competition for them.

Wage rate competition

There is clearly a significant level of competition from the public sector in the area of compensation.

- A recent study by the Canadian Federation of Independent Business found that average annual pay levels in the public sector in Atlantic Canada were 15-20% higher than for similar occupations in the private sector.

- One of the companies in this project complained bitterly about losing a key employee to government, as the result of his having been offered $20,000 more in annual salary in order to move to a government job.

One could argue that private-sector pay rates are too low, but these rates respond to market demands and must therefore be regarded as being realistic.

Without the discipline of the bottom line (or any proxy for it), it is difficult to determine what the "right" level for public sector wages should be.

- In most places, pay rates are lower in the public sector than in the private sector, with the understanding that public-sector workers experience a level of security that those in the private sector generally do not have.

- In the US and the UK, for example, it is widely accepted that the greater employment security common in the public sector goes hand-in-hand with a lower rate of pay.

The current uproar among the public sector unions in the region in response to budgetary constraints does not appear to have this perspective.

Not surprisingly, the net effect of this situation is that private-sector employment has long been less attractive to many people in the region. The tacit understanding is often that "government-paid work is better if you can get it."

This has undoubtedly contributed to the weak industrial infrastructure, the general lack of interest in successful small enterprises, and the lack of interest on the part of private investors to support their growth.

Service competition

Direct competition in the delivery of services presents another obstacle to business, and it affects some of these firms profoundly.

A number of the service companies face direct competition from government, or government-subsidized, entities providing nearly identical services.

- For example, Fenwick Laboratories competes directly for environmental testing services with a group which receives substantial support from government.

This competition creates jobs in the public sector, at the expense of the private sector firm. It can also on occasion undercut the financial support being provided by ACOA or other agencies to help the private company grow.

- One participant voiced the conclusion that "many people here tend to think that for every private sector job created, we're taking one away from a government employee."

Missed opportunities for building strength

Contracting out builds strength in private-sector firms. If government does the work itself, the opportunity to build this strength in dynamic firms is missed.

- At least two firms in the project that provide services overseas have only been able to generate that business as a result of the experience and expertise gained in their home market. One said: "No-one abroad wants to engage a firm which doesn't have experience at home. It implies that they are no good at what they do."

The historical reluctance on the part of the government sector to contract services out therefore serves to protect government jobs, but not to create further economic strength in the region.

Effects on Efficiency

The actual operations of government also have a significant impact on the way innovative export companies are able to conduct their business.

The Bureaucratic Factor

The bureaucratic factor is by no means unique to Atlantic Canada. What are some of the characteristics of the local government bureaucracy? How can the climate be improved?

Slow response times

On the whole, government is set up to deal with *processes* rather than *results*. This tends to encourage slowness rather than action. But the times call for a much more dynamic approach to decision-making. Slow response times just don't cut it for these firms.

It is noteworthy that:

- Over *two-thirds* of the companies participating in this project specifically cited slow response times as being a major problem in dealing with the government sector.
- Part of this results from government staff not having adequate appreciation of business issues; part of it results from the disincentives within the public sector to take risk.
- Four or five firms have essentially given up on accessing government financing because "the experience was a lousy one," as one of them put it.
- Management resources are scarce commodities in these firms. As one of them said: "My time is

better spent doing what we need to do to build the business rather than chasing after bureaucrats."

As one wag described the situation: "Working with government on financing is fine as long as you can afford to take one business element entirely out of the picture: the time factor."

A natural resistance to change

Most bureaucracies naturally resist change. Change involves risk, and risk could backfire on the person taking the chance.

There are many competent, accommodating, willing people working within government bureaucracies, but if it is clear that their jobs depend on following the rules rather than finding new ways to get results, they will take care not to step out of line.

The issue of jobs

Finally, it is contrary to the interests of almost everyone in government to make any major changes. Jobs in government are at stake at many levels. This, in turn, affects the political environment, creating pressure on politicians not to upset the apple cart.

The Border Issue

One of the most pervasive complaints made by participants in the project relates to the issue of customs and, to a lesser extent, immigration. It might be thought that these are simply typical of the complaints about bureaucracy to be expected from a group of energetic entrepreneurs. But the repeated nature of the comments, and the level of exasperation with which they were expressed, give cause for thought.

Customs

Canada Customs makes it very hard for some of these firms to do business efficiently. The complaints include:

- Delays encountered getting raw materials essential to the production process into the country.

- Delays in doing the paperwork related to goods returned for replacement or repair.

- Disincentives to foreign buyers (especially US customers who expect fast turnaround) to deal with a Canadian supplier.

A number of firms commented that Free Trade has not made any difference, primarily because the paperwork remains so complicated.

In addition, there were frequent complaints about the drawback procedures, in which duties which have been paid on goods to be re-exported are later refunded. These procedures result in money being tied up, sometimes for months, with extensive amounts of time required to find a path through the bureaucracy.

Immigration

The issue of immigration affected a smaller number of firms, but the range of comments was remarkably similar.

The question most frequently asked by Immigration officials when a foreigner arrives at the airport to either provide technical assistance or collaborate on a project seems to be: "Can't a Canadian do this?"

- As one participant put it: "If we can import the products we need in order to do our business, why can't we import the people we need?"

- Metals Economics Group found an incredible lack of coordination between the economic development agencies (which encouraged their move here) and Immigration (which presented ongoing obstacles to the move). MEG found the process very difficult, and has not subsequently attempted to bring in new people from outside Canada.

Structural and Regulatory Burdens

Regulation is a key and legitimate role of government. But the process of regulation needs to be implemented in a way which is manageable at the user level.

Levels of government

The many levels of government cause particular concerns to those businesses operating in multiple jurisdictions. Some of the companies in this project spend an inordinate amount of time dealing with rules laid down by government departments in several provinces, in addition to the federal government.

- Different rules and policies in each jurisdiction create a tremendous burden of time and paperwork.
- In some cases, dealing across Canada is more complicated than working outside the country.

Regulatory issues

Specific problems arise in particular areas of activity. Dealing with different regulatory regimes creates a lot of extra work. A lot of time is wasted because regulations in Canada do not dovetail with those in the US.

In addition, certain kinds of regulations (for example, in the area of clinical trials for new medical products) tend to be much more burdensome in Canada than in other jurisdictions. Expensive and restrictive securities regulations for small companies in Atlantic Canada also create barriers by curtailing financing options; very few firms would consider going public here. These factors discourage development activities in the affected fields.

Regulation is necessary to protect the public interest. However, over-regulation is burdensome and hurts dynamic companies. It diverts valuable human resources from creating wealth in the economy and building the necessary strength to compete effectively in international markets.

Government: Policy-Maker or Implementer?

A fundamental question arises in connection with all the government-related issues:

- Is the most appropriate role of government to set policy, or should government also be implementing policy?

To a large extent, government is an implementer of policy here.

There are signs that this may be changing, primarily because financial constraints leave no alternative. But it appears that the upcoming changes are not generally welcomed within the society at large.

- How can the positive attitude towards challenges and change exhibited by firms like the innovators in this study be taken up within the public sector?

MOVEMENT AND CHANGE: THREAT OR OPPORTUNITY?

Key Issues: Problems with Flexibility, Movement and Change

The many common threads that emerged in meetings with 20 innovative export companies in the region have several important implications:

- There are success stories. Some of these are extraordinary, and all of them are instructive. These successful exporters suggest strategies for others in the Atlantic region.

- Successful innovative exporters suggest that the standard complaint of physical isolation can, for the most part, be dealt with, and in some cases may actually be considered to be a bonus.

- The artificial burdens imposed by human institutions are at least as big as, and possibly more impenetrable than, those derived from geographic factors.

- Most of the man-made obstacles faced by these companies can be traced back to issues inherent in the economic structure in the region, and subsequent reliance on the public sector.

- The evidence of the paralyzing effect of these man-made obstacles is increasingly clear in the Atlantic region. Paralysis leads to a lack of movement in many spheres.

- These obstacles are not easily susceptible to change. However, pressures on the fiscal front create opportunities. These pressures may be the lever that is required to change aspects of the policy and institutional environment.

- The goal must be to effect these changes and increase flexibility and movement in the system.

Many Spheres are Affected

The obstacles related to movement and change affect many spheres of activity in the region. Most of the individual players are doing a good job in their own realm within the constraints laid down around them. However, generally speaking, each group focuses on its own strategy for survival, leading to an atmosphere of "turf protection." There is very little awareness of the effect of one institution or structure on the whole system.

This is no longer affordable. The lack of sympathetic communication between one group and another is leading to an impoverishment of the whole. Better communication, better understanding of the underlying issues, and increased flexibility and movement are all required.

One interesting way to look at the issues raised in this project is to view the major obstacles with local institutions and cultural habits as being associated with *problems with flexibility and movement in the system.* Some of these result from a *lack of movement,* while others are associated with *unhealthy patterns of movement* which are built into the present system and structure.

What makes things move? What prevents them from moving? These seem to be key underlying questions that need to be addressed if any meaningful change is to take place.

- *In the physical realm,* there is constraint on the movement of goods. This relates to both transportation links and (more importantly) with institutional barriers to trade such as the customs regime.

- *In the realm of personnel,* there are constraints to the movement of people *into* the region, including the ability to strengthen the workforce through immigration. There is also the issue of movement of people *out of* the region, resulting in an emigration of skills and a weakening of capabilities.

- *In the realm of education,* there are restrictions in the movement of both people and ideas between public institutions and private companies. There is often a lack of interest on the part of one side in the activities of the other.

- *In the realm of finance,* there is a well-established yet curious phenomenon: a tremendous movement of private money *out* of the region (in the form of private capital and pension funds), combined with a tremendous movement of public money *into* the region (in the form of transfer payments and federal programs). At the same time, there is a lack of movement of money *within* the region from one sector of society to another, and specifically between private investors and local companies.

- *In the realm of government and public-sector institutions,* there is a general inability to move processes along at the speed called for in a business context, coupled with a frequent lack of will to make changes. Extensive dependence on the public purse to fund non-government activities tends to encourage bureaucracy.

The fact that there are problems with various aspects of the institutions and bureaucracy is not anyone's fault. There is nobody to blame. In fact, many people within the system feel trapped by it. They are just trying to protect what they see as being in their best interests. Especially in a time of cutbacks and economic threats, fear and apprehension abound. Old habits are threatened and new situations appear daunting. Uncertainty is everywhere.

- One of the key lessons to be drawn from listening to the experiences of the group of companies who participated in this project is the fact that *they know how to deal with change.* In many cases they actually manage their own change.

- These companies clearly exhibit many of the signs of what are now being called "*learning organizations,*" which are being hailed as prototypes of the kinds of organizations which can be successful in the rapidly changing environment in which we are all now living. There is, therefore, a lot to be understood from the way they go about dealing with dynamic situations brought on by uncertain conditions.

What is a Good Business Environment, Anyway?

What is a good business environment for the kinds of activity that will help bring new revenues into the region? What are the institutional and cultural obstacles to making the necessary changes? What are the points of highest leverage?

The real challenge is to find ways to marry a vision with some kind of practicality.

Based on the responses of the firms participating in this project, a business environment that would nurture innovative export companies would include all or most of the following characteristics.

Quality of Life

- *A desirable place to live.* This is one of the major attractions of continuing to do business here for people in the firms in this project. Quality of Life is one of those oft-mouthed clichés touted in brochures all over the world. Yet this is one of the key reasons cited by many of the participants in this project for being here.

  It is probably under-rated in its importance, and not well communicated.

Access to the Right People

- *Access to skilled people with an energetic, problem-solving attitude.* In particular, this means people with the ability to take charge of a situation and champion new projects, combined with the ability to work with others in collaborative team efforts.

  Ways need to be found to develop these characteristics. To the extent that such people are not available here, ways need to be

found to encourage them to come, perhaps through incentives within the tax system. Skilled managers and marketers are points of especially high leverage in a business organization.

- *Flexible access to good specialist expertise and technical skills,* through the universities, research institutes, community colleges and trade schools. What is needed is an open-door attitude on the part of the institutions, combined with relevant training and a sympathetic understanding of real-world needs.

  Extensive use of co-op programs as a requisite part of the degree-granting process would be an obvious way to begin.

- *An educational system that encourages people to think, not follow rules.* It is important to find ways to help the educational system encourage people to do this.

  More interactions with dynamic firms in the region would be one useful starting point, perhaps through some kind of mentoring program.

Responsive Suppliers and Supporting Services

- *High quality supporting suppliers and service providers,* geared towards helping enhance the value that client companies can deliver to their own customers.

  Growing international competition is helpful in strengthening local firms by forcing them to improve.

- *Convenient transportation links,* especially those air links which provide access to major markets such as those in the US.

  Strong lobbying activities need to be mounted to Air Canada, Air Nova and the transportation authorities to find out what is preventing the provision of a frequent, fast and conveniently scheduled Boston service.

- *A competitive telecommunications network,* enabling cost-effective telephone usage across North America, and access to all the services typically available in the US.

  Any weaknesses in service and pricing as compared to US standards need to be eliminated wherever possible.

- *Good information access,* including access to hands-on knowledge of specific markets, opportunities, and obstacles.

  While government sources are helpful, they tend to be general and theoretical. Practical schemes such as financial support to seek new export business need to be rapid and flexible.

- *Business networks.* Business networks, in which small companies work together to complement each others' strengths, form common marketing fronts, or reduce common costs, have been successfully established in other jurisdictions such as Norway, with very positive effects on the competitiveness of participating firms.

  The Chambers of Commerce and Boards of Trade are very well positioned to initiate activities in these areas.

A Supportive Investment Environment

- *Access to capital, in the right form and when it is needed.* Whether this comes from public or private sources, it is essential that it be responsive, flexible, available and intelligently managed by people with appropriate business experience. Bank financing is generally inadequate for the needs of growing companies; but a slow, unresponsive government financing option can amount to death by promise.

  A responsive pool of equity capital is essential to underwrite growth. If government money is involved, this needs to be handled within a private-sector context. A continuum of financing options needs to be available, including a vastly simplified "fast-track" system for small companies to go public, which would help encourage both companies and

early-stage investors. Some kind of regional stock exchange, responsive to local conditions, could become a focus of pride in local successes, as well as a channel for investment capital.

Other useful vehicles include community investment bonds, with government backing as to principal but not returns, which have been successfully applied in other jurisdictions.

- *A banking system which is responsive to the realities of the local environment,* with local management and decision-making to the highest levels.

  If the commercial banking establishment cannot provide this, perhaps some innovative approaches through the credit union system or other potential providers could be devised.

Positive Government Policies

- *A clear understanding of the role and importance of government:* to articulate a vision, set policy and simplify pathways.

  This requires a review of the accepted roles of government within the system, and an orderly transition to private-sector alternatives wherever they would be more efficient.

- *A clear and coherent regulatory policy* on all fronts, well coordinated with those of major trading partners.

  The key is to ease the burden by simplifying systems while protecting the public interest.

- *A tax system which encourages the right things.* The government has sole control over the sluice gates at many points in this natural irrigation system.

  Obvious examples for tax incentives include new export revenue generation, innovation and risk taking, investment in high-quality human capital, investment of long-term equity capital, and appropriate training.

A No-Nonsense Bureaucracy

- *Government employees who have the training and authority to make decisions* without the fear of being second-guessed by someone else in their organization.

  This requires commitment and leadership at the top, placing emphasis on results rather than processes, and with internal incentives structured accordingly.

- *A low-bureaucracy government infrastructure,* specifically geared towards serving the needs of those companies that are capable of creating new wealth, or anything which supports such companies.

  A vast simplification of the system of overlapping jurisdictions between the various levels of government must be made.

  Another start could be made by initiating a major shift in the direction of contracting out any service which government itself is not absolutely required to perform. This would call for a carefully coordinated package of incentives and a skillful communications effort, so that those public-sector employees affected could understand that changes can lead to more productive, sustainable jobs for them within a private-sector context.

- *Permeable borders in and out of the region,* through which people and goods can readily come and go. This needs to be specifically designed to enable companies which are creating wealth through their interactions with other parts of the world to go about their business in a straightforward and hassle-free fashion.

  Representations to Canada Customs and Immigration Canada need to be made at the highest possible level, in combination with work at the local level, to establish cooperative approaches to solving the very definite problems in this area.

Concluding Comment

The purpose of this project has been to try to understand some of the issues that help and hinder the formation and growth of innovative export companies in this region. The intention was not to produce a set of neatly-wrapped recommendations. The above comments are presented as pointers, not conclusions. They represent areas for exploration.

There are are a number of structural impediments to the development of these kinds of companies, but the most important issues surround attracting skilled and energetic people willing and able to make the necessary commitments of effort and time.

This research project clearly suggests the need for additional analysis, and discussion of these findings in a broader context. Certain actions on a number of policy fronts seem obvious. However, to effect the kinds of changes that are called for requires a process of interaction between many different parties in order to remove the structural obstacles that presently exist.

Based on an understanding of the issues and a commitment to intelligent change, it should be possible to create a healthier environment in which innovative export companies can grow and prosper.

APPENDICES

Appendix A: Size and Growth Rates of the Companies

(expressed as a percent of all participating companies)

No. of Employees

10 employees or less	20%	
11-20 employees	25%	
21-50 employees	20%	
51-100 employees	20%	
over 100 employees	15%	

Export Revenues

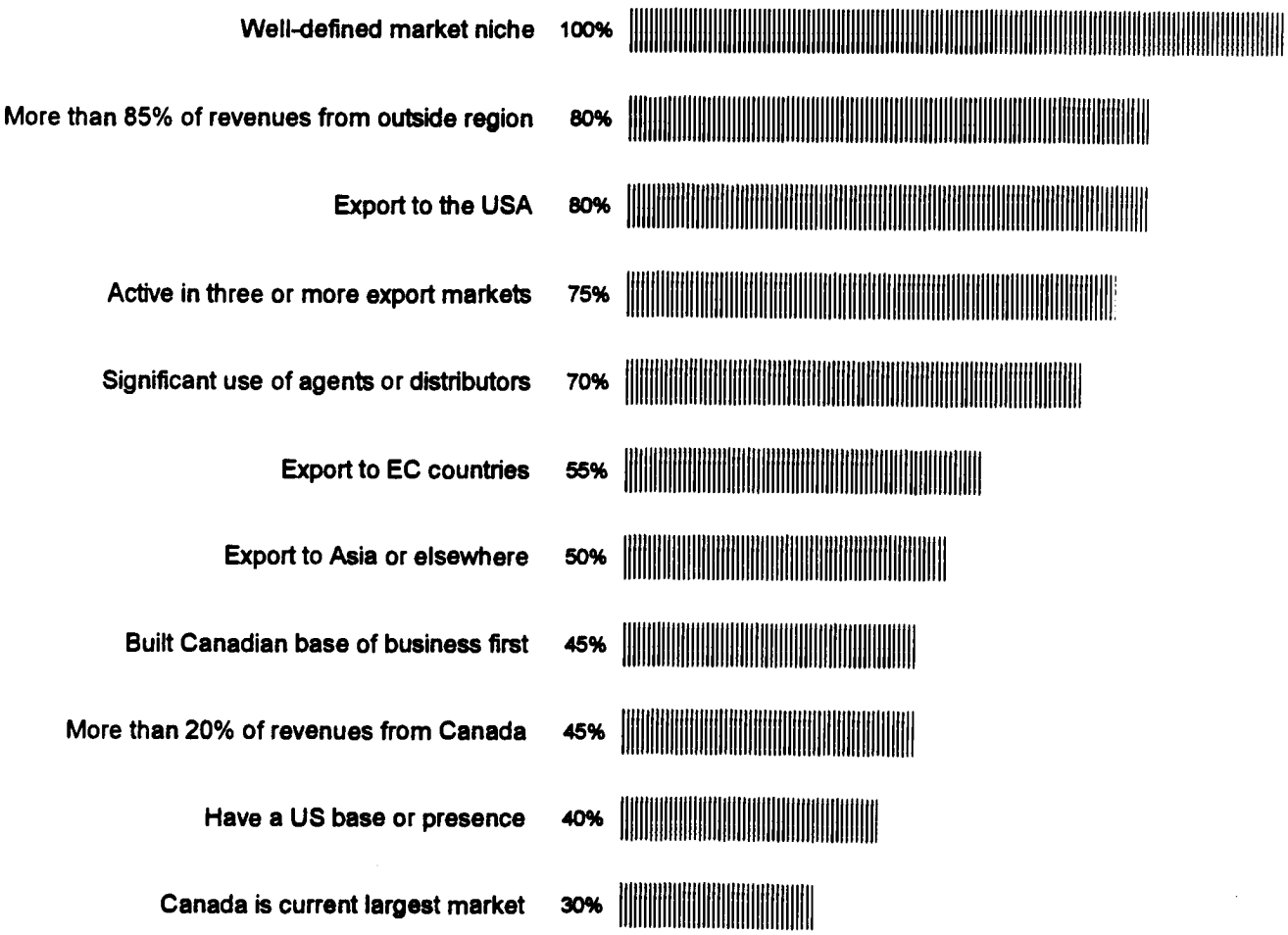
under $1 million/annum	20%	
$1-3 million/annum	20%	
$3-5 million/annum	20%	
$5-10 million/annum	25%	
over $10 million/annum	15%	

Projected Growth Rates

under 10% per annum	20%	
10-30% per annum	60%	
over 30% per annum	20%	

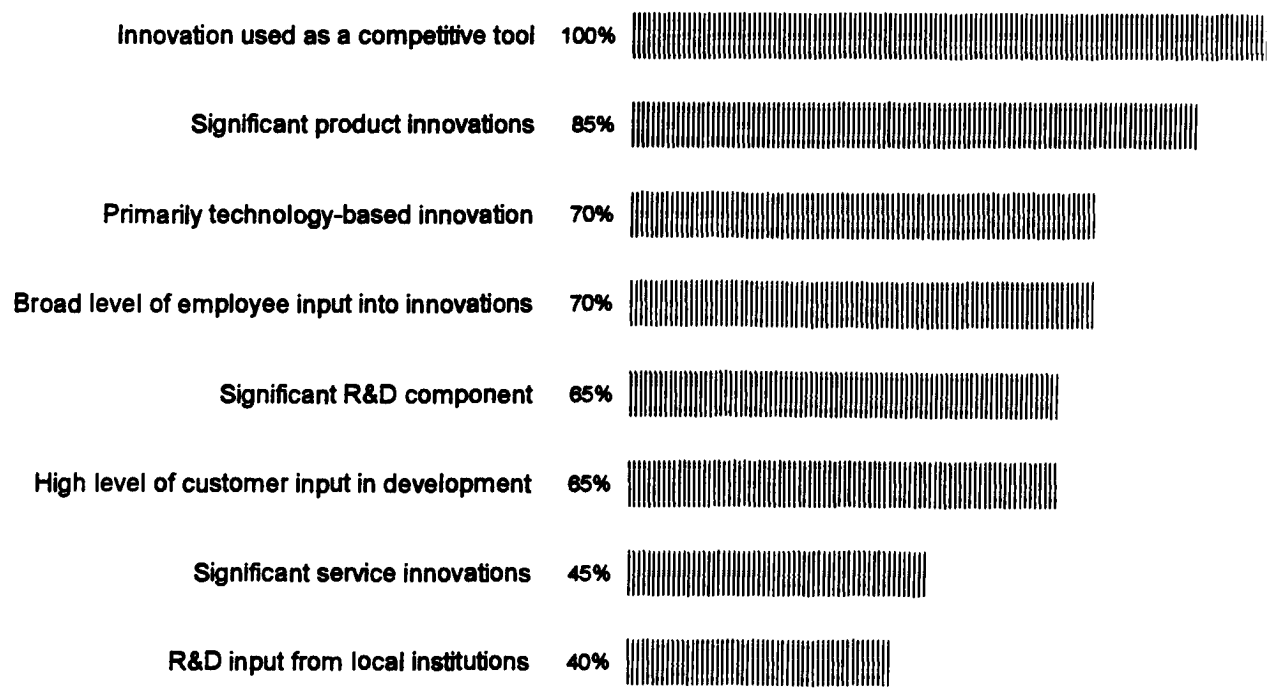
Appendix B: Exporting Issues

(expressed as a percent of all participating companies)



Appendix C: Innovation Issues

(expressed as a percent of all participating companies)

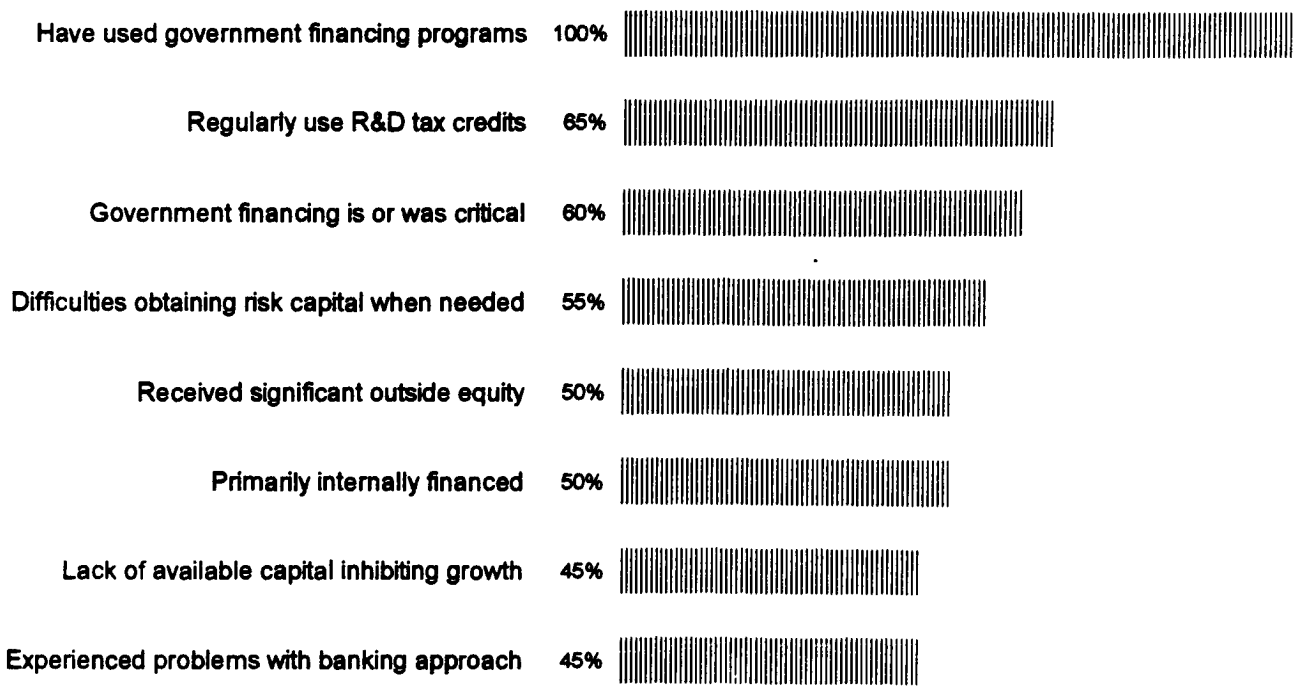


Appendix D: People and Human Resource Issues

(expressed as a percent of all participating companies)

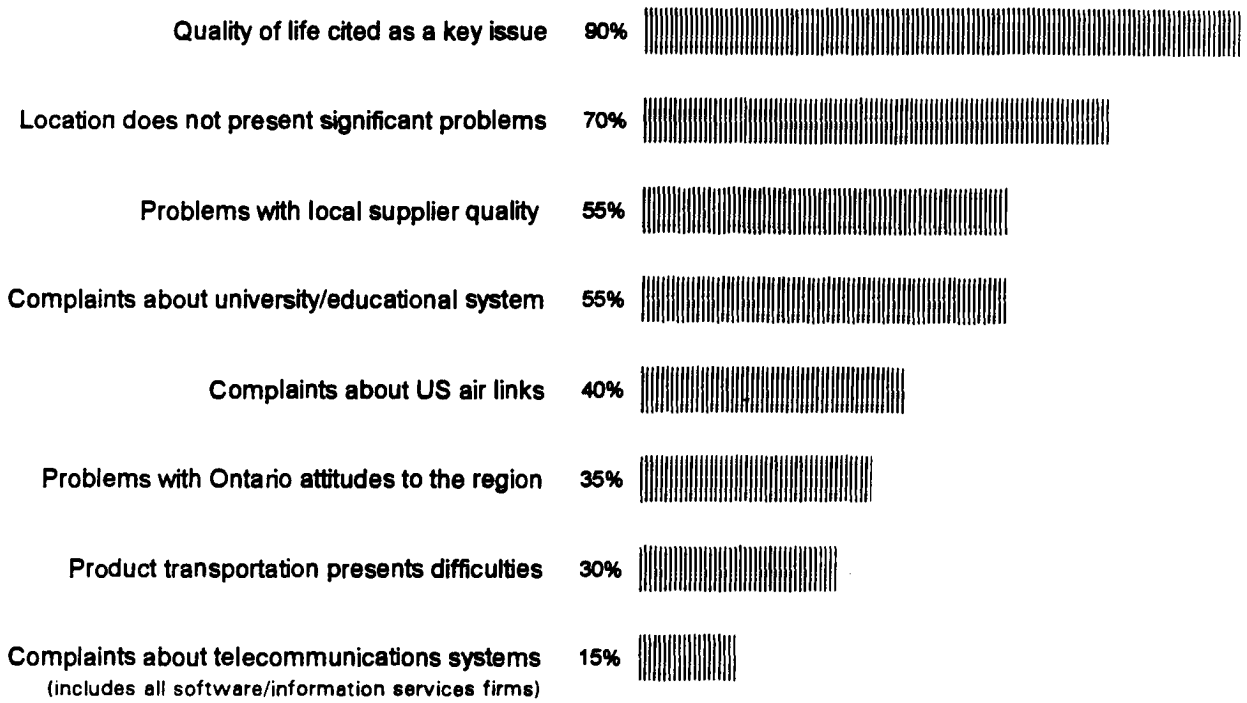
Appendix E: Financing Issues

(expressed as a percent of all participating companies)



Appendix F: Location and Supporting Infrastructure

(expressed as a percent of all participating companies)



Appendix G: Issues Related to the Role of Government

(expressed as a percent of all participating companies)