FOREIGN DIRECT INVESTMENT: A CASE STUDY OF AN INFORMATION TECHNOLOGY CONSULTING FIRM

by

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Foreign Direct Investment: A Case Study of an Information Technology Consulting Firm

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Abstract

This project reviews the economic and strategic business theory of foreign direct investment and business practitioners' views of the management of multinational enterprises (MNE's). The theoretical and practical analysis is applied in a case study format to an Information Technology (IT) consulting firm that is contemplating foreign direct investment in Malaysia. Ultimately, the firm decided against making the investment at this time. The conclusions put forth by the case analysis confirm those made by the theorists and practitioners of MNE management.

Dedication

This project is dedicated to my family --June, Stan, Linda, and Damian -- and numerous friends who provided unbounded enthusiasm and encouragement while I was undertaking my EMBA degree. A special mention goes to my grandfather, Bronic Harasymowich, who passed away last year. Bronic's advice to me and the rest of my family was to always "keep yourself happy".

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Chapter 1
Introduction

The global business environment is becoming increasingly competitive. Many firms, both large and small, consider expansion into foreign markets as a means of keeping ahead of their competitors. When a firm decides to investigate investment alternatives in foreign countries, it must first ask itself a critical question: Why would this firm be successful in a particular foreign market? Presumably, the foreign market already contains a competitive environment of established firms and potential newcomers. In order to successfully enter that foreign market, the firm must possess competitive advantages which set it apart from its rivals.

In order to answer this question, the first step is to acknowledge the vast theoretical work that has been completed by economics theorists over the past few decades. The economic theory of multinational enterprises (MNE's) has numerous contributors, but the seminal work was done by Hymer in 1960. Later, in 1971, Caves popularized Hymer's theory that a firm must possess a knowledge-based asset in order to be successful in a foreign market. Caves' work[1] set the stage for the further development of MNE management theory. Subsequent theorists attempted to determine first why a company would consider foreign investment, and secondly, what would be the pre-conditions for success of the foreign investment.

Once the question of why a firm would successfully invest in a foreign market is answered, the next step is to determine an appropriate method of

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[1] Richard E. Caves, "International Corporations: The Industrial Economics of Foreign Investment", *Economica* (London, England: London School of Economics, 1971).

market entry. Various strategies abound for entering a foreign market. Some of these strategies involve direct forms of investment, such as acquiring an existing firm, while others involve less direct investment forms, such as exporting. Each investment strategy involves a certain amount of risk, and the firm considering the foreign investment must determine the risk it is prepared to take. The amount of risk to be undertaken is a clear measurement of the firm's commitment to the foreign investment: higher risk entails higher commitment.

Assuming that the firm chooses a form of direct investment -- either by acquiring an existing firm, starting its own subsidiary branch, or forming a joint venture with a foreign partner -- the firm must then plan a suitable approach for the investment. Practical guidance for formulating such approaches is offered from various sources, such as authors of international business texts, and seasoned veterans of specific investment strategies. These approaches and techniques for managing a foreign investment provide a useful framework for a firm planning its foreign investment.

In order to effectively apply the economic theory and practical techniques provided, a case study of a particular firm contemplating foreign direct investment is analyzed in detail. The firm selected for analysis is Sierra Systems Consultants Inc. (Sierra), a consulting firm offering professional services in the information technology (IT) sector. Sierra's investment opportunity is to form an international joint venture in Malaysia. From Sierra's point of view, the main purposes of the joint venture are to procure higher returns in the Malaysian IT market and to gain a foothold into other ASEAN (South East Asian) countries. This particular investment opportunity is compared to the results of economic theory and practitioners' views, with the ultimate objective being to determine the following:

- Why does a firm expand into international markets?
- Under what conditions does a firm have a reasonable chance of success against its foreign competitors?
- What approach should a firm take to establish its foreign investment and manage the ongoing operations?

Chapter 2
The Theory of Foreign Direct Investment

2.1. Definitions

Corporations, like individuals, invest for the purposes of realizing profits. When an individual shops for a suitable financial investment, he or she will carefully weigh the potential financial gains against the security of the investment. Corporations perform a similar type of decision when they invest in a foreign operation; the potential profit must be weighed against the many risks. The decision to purchase either a corporate bond or a publicly-traded stock is a fairly simple, discrete financial task. However, the decisions facing a corporation that is contemplating foreign investment are much more complex.

The investment that a firm makes in a foreign country may be merely financial, where the firm focuses on channeling funds to the foreign entity. Alternatively, the venture may extend to the investment of real assets, such as management services. A foreign investment that involves more than just capital sourcing is known as foreign direct investment, since the corporation possesses a level of control over the foreign operations. Other variables that may be transferred from the corporation (based in the "home" country) to the foreign entity (based in the "host" country) include production processes, R&D, and knowledge of advanced technology.

The main forms of foreign direct investment are greenfield investments, acquisitions, and joint ventures. "Indirect" investment in a foreign country, on the other hand, refers to exporting and licensing activities.

2.2. *The Nature of Multinational Enterprises*

A corporation which controls operations in more than one country can be defined as a multinational enterprise (MNE). The main reason that a company would decide to do business internationally would be for the purposes of diversifying the firm's activities[2]. There are three distinct methods of diversification: vertical, conglomerate, and horizontal.

2.2.1 Vertical Diversification

A company which is heavily dependent on external suppliers (for raw materials or intermediate goods that are required to carry out its own production processes) may decide to vertically integrate the sourcing of these intermediate goods with its own production processes. Vertical diversification is viewed as a means of eliminating opportunistic behaviour on the part of a firm's suppliers.

2.2.2 Conglomerate Diversification

A company pursuing conglomerate diversification produces several different product types in various locations. Conglomeration tends to mitigate the risk associated with specific industries; for example, a firm which produces goods that span two or more industries is not as vulnerable as a firm which is firmly entrenched within a single industry.

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[2] Peter J. Buckley and Mark Casson, *The Future of the Multinational Enterprise* (London, England: Macmillan, 1976), p. 72.

2.2.3 *Horizontal Diversification*

In order to become horizontally diversified, a firm must produce the same (or similar) product lines in different countries. The focus of this paper will be on the horizontal form of foreign direct investment, as it is the most common type of MNE[3]. The majority of international firms produce the same product lines (or provide similar types of services) in different geographical locations. In each foreign market, the product (or service) is customized to suit the local conditions.

Why do MNE's even exist? Why are markets served by foreign direct investment instead of by domestic production and/or exports from foreign companies? As a first step to answering these questions, it is necessary to review the theory of foreign direct investment that has evolved over the past few decades.

2.3. Evolution of the Theory[4]

Much has been theorized about the multinational firm. Why does a firm become a multinational enterprise? Why does it choose to invest directly (real assets as opposed to mere financial assets) in a foreign country? Several attempts have been made over the past half century to address these questions. Finance theorists approach foreign direct investment using the theory of international portfolio diversification, while economists view foreign direct investment by relating it to industrial structure theory and the Coasian theory of

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[3] Ibid, page 20.

[4] The theory presented in this section draws primarily from secondary sources, as well as from original sources. Buckley and Casson's summary of alternative theories was used as the main secondary source of information; original theorems are referenced individually.

the firm. Strategists offer their explanations for the international investment phenomenon by reviewing the evolution of strategic planning from a rigid planning exercise (early 1900's) to the more flexible model that is in practice today (1990's). A summary of the alternative theories of foreign direct investment and the MNE follows.

2.3.1. The Hymer-Kindleberger Theory[5]

In 1960, Hymer and Kindleberger set out to determine why a foreign firm would be able to compete effectively against a domestic firm. The domestic firm holds two substantial advantages over the foreign firm:

1. The domestic firm has an intimate knowledge of local consumer tastes, legal and business infrastructures, and business customs, and
2. The foreign firm sustains higher operating costs (for activities such as travel and communication).

In order for a foreign firm to be successful in the domestic market, therefore, it must possess its own set of advantages that more than compensates it against its domestic competitors. The foreign firm's advantages may be generalized (for all firms originating from that country), but the most salient advantages are those which are firm-specific. Such firm-specific advantages usually have the nature of a "public good," in that they can be exploited by any subsidiary of the firm, at a relatively low cost. Since the yield of such an advantage has already been proven within the foreign firm's home

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[5] S. Hymer, "The International Operations of International Firms: A Study of Direct Investment," *unpublished Ph.D. dissertation* (Massachusetts Institute of Technology, 1960).

market, the advantage can potentially be exploited in the host market without having to incur again the sunk costs associated with the original implementation. Examples of firm-specific advantages include:

- recognizable brand name,
- highly differentiated products or services,
- special marketing skills,
- patent or access to specialized technology,
- readily available sources of capital financing, and
- contemporary management skills (e.g., team-building techniques).

It is entirely possible that a firm might decide to invest in the foreign country by a more indirect approach, such as exporting or licensing. Hymer and Kindleberger give two reasons why a firm might not seek to exploit the foreign market through exports or licensing:

1. Trade barriers and high transportation costs may prevent profit-maximization by exporting, thus forcing the firm to look at more direct forms of investment.
2. Information asymmetry between the foreign and the domestic firm may prevent a competitive bid being realized for licensing. Transfer and policing costs (for monitoring the transferred property rights) may be exorbitant. In this scenario, it may be more cost effective for the foreign firm to consider forming a partnership with the domestic firm, as opposed to a licensing agreement.

2.3.2. *Aliber's Theory of Currency Area Phenomenon*[6]

Aliber, like Hymer and Kindleberger, sought to identify the advantages held by a foreign firm over its domestic competitors. Instead of looking at the advantages specific to the firm, Aliber contended that the advantages are particular to firms grouped within a given currency area. The assets of the firm are valued in the home currency; if the home currency is valued higher than the host currency (due to exchange rate changes), then the foreign firm can borrow more cheaply than can a domestic firm. When a major capital expenditure is required, the foreign firm has a distinct advantage over the domestic firm with respect to borrowing the necessary funds for the expenditure.

Some firms have been known to attempt to predict the rise of exchange rates as a means of making keen foreign investment decisions. For example, a business situated in a country with a devalued currency might be purchased by a foreign firm; later, when the currency of that country increases in value, the foreign firm would sell the business and realize a tidy profit. This type of foreign investment strategy is extremely risky to the firm; speculating on currency futures is the safer, preferred method of investment.

2.3.3. *Vernon's Product Cycle Theory*[7]

Vernon's theory postulated that a product exists in three distinct phases:

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[6] R.Z. Aliber, *The International Corporation: A Theory of Direct Investment* (Cambridge, Mass., 1970).

[7] R. Vernon, "International Investment and International Trade in the Product Cycle," *Quarterly Journal of Economics* (1966).

Phase 1. Production is located close to the market in a highly developed country, where communication costs are low, and competition is domestic only (no foreign entrants).

Phase 2. Production location becomes less dependent on the market location. As the product matures, only the most sophisticated product designs survive. Buyers become more knowledgeable and demanding, with the demand becoming more price-elastic. The technology itself becomes somewhat stabilized, and exports start to enter into the market. Exports remain in the market so long as the sum of the marginal production costs in the home country and the marginal transportation costs is less than the average production costs in the host country.

Phase 3. The product becomes standardized, thus evolving into an undifferentiated product. Pricing of the product becomes highly competitive, and producers search for the cheapest sources of supply and labour.

Vernon's Product Cycle theory only explains direct investment that replaces export activities (a form of indirect investment); it cannot be used to explain why a firm would choose to bypass export activities in favour of a more direct form of investment, such as the acquisition of a foreign firm.

2.3.4. Aharoni's Theory of Foreign Investment as a Behavioural Process[8]

According to Aharoni, the decision to invest depends on chance stimuli. For example, a manager may be guided by self-fulfilling interests to invest in a new office overseas; the manager may believe he/she would be promoted if the foreign investment proves fruitful. The manager's enthusiasm may then spill over to other managers. Profit maximization may or may not be the compelling reason to initiate foreign investment, but the chance stimuli may move the concept along so that upper management ultimately approves it. The chance stimuli may also be external to the firm. For example, the government in a foreign country may increase its tariff on imports, thus forcing an export firm to decide whether to continue with exporting, or to start producing within the host country.

2.3.5. Buckley and Casson's Synthesis of Theories[9]

In an attempt to synthesize the numerous theories presented, Buckley and Casson have suggested that foreign direct investment is a logical intersection of the following theories:

1. International capital markets,
2. International firms, and
3. International trade.

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[8] Y. Aharoni, *The Foreign Investment Decision Process* (Cambridge, Mass., 1966).

[9] Peter J. Buckley and Mark Casson, *The Economic Theory of the Multinational Enterprise* (London: Macmillan, 1985), p. 114.

The theory of international capital markets addresses the issues of funding sources and risk-bearing. The optimum location of the firm (where it is registered, where the main headquarters are situated, where the management core is located) can be analyzed in terms of the theory of international firms. The theory of international trade addresses the question of where each major asset should be produced.

2.3.6. Maximization of Shareholders Wealth (Practical Considerations)[10]

A more practical view on the reasons for foreign direct investment relates to the basic focus of the firm: to maximize the wealth of the shareholders. From the shareholders' perspective, the two main reasons for investing internationally are to improve profits, and to diversify risk.

The reasons for improving profits are obvious: net cash flow is increased by increasing sales revenues (net cash inflows) and/or by decreasing costs (net cash outflows). Once the domestic market has been saturated, any further growth may require that the firm increase its market share, at the expense of it's competitors. A substantial leap in market share may be too difficult or costly to achieve, so the firm will start to look afield at international markets. The potential profits in international markets may exceed the domestic profit by a large margin; this could occur if foreign sales prices are higher, and are not associated with higher than average costs. Lower production (e.g., labour, raw materials) and overhead (e.g., advertising) costs in a foreign country would all contribute to a potentially higher profit margin.

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[10] Steven Globerman, *Fundamentals of International Business Management* (New Jersey: Prentice-Hall, 1986), p. 30.

Risk diversification is realized by investing internationally in foreign business activities which are not well correlated. The resulting variance in net cash inflow is reduced, thus providing a safety net for the shareholder investments. Low correlation between business activities in different geographical locations may be due to differing economic and political conditions.

2.3.7 Ansoff's Historical Perspective on Strategy Development[11]

H. Igor Ansoff studied the patterns of strategy development from its infancy in the early 1900's to the mid-1970's and onward. The various strategic methods have evolved into the most current method in place, that of strategic market management. A discussion of this evolutionary process follows.

Budgeting/Control

In the early 1900's, management used the budgeting/control system of strategic management. Prior to each fiscal year, a company's divisions would set financial budgets based on past years' performance. During the fiscal year, strict controls would be monitored to determine if any budget deviations had occurred. Deviations would be evaluated in detail, with appropriate corrective action being considered where necessary. The key assumption of this strategic planning method is that the past repeats itself.

Long-Range Planning

By the 1950's, the budgeting/control method had expanded somewhat to include future-oriented planning. Based on past performance and trends, a

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[11] H. Igor Ansoff, "Strategic Issue Management," *Strategic Management Journal* (April-June 1980), pp. 131-148.

company would project future revenues, costs, technology, research & development efforts, etc. The company's resources (production plants, equipment, employees) would be developed to accommodate these projections. Employees would be hired (or fired), equipment bought (or sold), or research efforts increased (or decreased), depending on the projected growth (or decline). Time frames for the trend analysis and projections typically extend five to ten years.

Strategic Planning

The strategic planning method of the 1960's contradicted the fundamental assumption of previous methods, namely, that the past is a valid predictor of the future. Past trends are no longer acceptable for predicting future trends. Changing capabilities and strategic thrusts are perceived as the driving force behind the development of new strategies. Only by enhancing the company's abilities (by investing in additional research and development, for example), or by changing the company's strategic thrust (by entering a new product market, for example) can a company forge a strategy that can withstand changes in the external environment. The external environment is monitored carefully by paying close attention to the actions of competitors and customers. This monitoring process enables the company to anticipate changes in its external environment, and to better plan for these changes. While this strategic planning method varies from past methods, it still employs a period planning process, similar to the annual budget preparation process. A typical company will prepare an annual strategic plan by analyzing the external environment at that point in time. The resulting plan will reflect the strategic decisions to be made for the remainder of the year.

Strategic Market Management

The most recent method of strategic planning follows from its predecessor by focusing on the external environment: the market. However, strategic market management is not based on a period planning process. Instead, strategic decisions are influenced by external conditions. Due to the uncertainty of changing external conditions (e.g., government policy, political situations, demographics), strategic decisions must be made outside of the planning cycle. These strategic decisions must enable the company to respond to the environmental change proactively, not reactively. By becoming more proactive in its strategic decision making, a company has the opportunity to shape it's own environment, instead of being shaped by the environment and merely reacting to changes.

Strategic Market Management and FDI

The strategic market management system highlights the critical nature of market information to the competitive firm. In order to succeed domestically, the company must understand its domestic customers and competitors. As foreign competitors enter the market, the company must expand its horizons to monitor global competitors as well. At some point, the company's industry may expand beyond local boundaries towards international markets. Once a domestic market becomes saturated, it becomes necessary for a company to investigate more distant prospects in other countries. A key component of a company's success in entering a foreign market lies in its ability to forecast future market potential in foreign countries, and to assess the strengths and weaknesses of its potential competitors in the foreign market.

2.3.8 *Ansoff's Growth Matrix*

Companies must achieve significant growth in order to stay ahead of their competitors. Indeed, some measure of growth is required to merely survive in the competitive arena. Without any growth, a company will eventually stagnate, and its competitors will be only too eager to attack the company's weakest points of defense. Ansoff's Growth Matrix illustrates the available growth strategies which are based on present and new markets, as well as present and new products (or services).

Figure 2.1 - Ansoff's Growth Matrix

	Present products	**New products**
Present markets	**Growth in existing product markets:** - increasing market share - increasing product usage: - frequency - quantity - new applications	**Product development:** - add product features - add product refinements - expand product line - develop new generation product - develop new products for same market
New markets	**Market development:** - expand geographically - target new segments	**Diversivication involving new products and new markets:** - related - unrelated

The amount of risk involved increases as one moves from the top left quadrant of the matrix towards the bottom right quadrant of the matrix. Growth in existing product markets is likely the most viable growth alternative for many companies, since it draws upon existing knowledge and resources. Growth can be achieved in one of two ways using this alternative: either by increasing market share in existing product markets, or by increasing product usage by the existing customer base.

The next growth alternative, product development in present markets, may be in the form of adding new features to products. expanding a product line,

developing new generation technologies to replace older, obsolete technologies, or by developing entirely new products. Product development involves a higher degree of risk than does growth via present products in present markets, since the potential success of new markets is largely unknown. Market research studies may assist in alleviating some of the uncertainty, but an excellent projection produced by a market research study does not necessarily guarantee product success.

The expansion into new markets normally takes place only after a company has succeeded in its present markets, and significant growth is no longer possible even with the introduction of new products or product refinements in existing markets. Geographic expansion is one type of market development. A second type of market development involves the expansion into new market segments. Expansion into new market segments involves the definition of new target segments by focusing on non-users, new distribution channels, age groups, and differing attribute preference.

A company considering geographic expansion may first expand regionally, then nationally or internationally. Each successive expansion involves a higher degree of risk, since differences in distribution methods, government policy, and culture tend to vary more widely between countries than between regions. Regional differences, however, do exist, and should not be overlooked when expanding regionally.

The final growth alternative, diversification involving new products and new markets, represents the highest risk alternative of all four alternatives. A company may purchase another company which is in a different product market, or it may enter a new product market on its own. A diversification that allows some commonalities between apparently diverse businesses is said to be related. Commonalities may exist in the production processes, distribution

channels, and operating systems of two diverse businesses, thus achieving some amount of economies of scale and efficiencies. Unrelated diversification, however, does not involve commonalities between businesses, and is primarily used to improve a company's financial situation, such as obtaining a higher return on investment, taking advantage of tax benefits, or by improving the management of the company's cash flow.

The general prescription for corporate growth is to start from the upper left corner of Ansoff's matrix (within the present products/present markets quadrant), considering other quadrants only when the current product markets have been exhausted, the potential returns in new markets are outstanding, and the increased amount of risk within the other quadrants can be accepted. The initial point of this growth path represents the lowest amount of risk to the company, since it builds upon existing knowledge and experience in current product markets. By pursuing growth in existing product markets, the company can substantially minimize its risk, and take advantage of opportunities while they exist in current markets. The company should only pursue growth represented by the other quadrants (such as expanding geographically into a new market, or developing a new generation product) if the potential returns in these new markets are exceptional. It is likely that a company would only consider higher risk methods of growth if the opportunities in its current product markets had decreased considerably. A company with deep pockets would, however, be able to enter new markets even when excellent opportunities still existed in their current markets, since the company's financing capabilities would mitigate against the risk of outright failure or delayed acceptance in a new market. A company with lesser financing capabilities would likely remain in current markets until such time that the opportunities in these markets had declined substantially.

.2.3.9 *The Competitive Advantage of Nations*[12]

Traditional theory maintains that the determinants of a nation's competitiveness stem from the nation's interest rates, exchange rates, labour costs, and economies of scale. In 1990, Michael E. Porter undertook an investigative study of 10 major nations. The study sought to discover why certain nations gain competitive advantage in particular industries. Porter's findings varied significantly from conventional theory. Instead of relying on its inherent assets, a nation's industry gains a competitive advantage by successfully dealing with constraints and pressures, and by continuously innovating and upgrading. By overcoming factor disadvantages (such as high labour costs), competing against strong domestic rivals, and satisfying a demanding customer base, a nation's industry can gain a competitive edge over its global competitors.

Innovation can take many forms, and involves more than just new technologies and new business processes. An old product may be redesigned to suit changing conditions. A business process may be improved by reviewing problems and bottlenecks with the process, and making incremental improvements on an ongoing basis. Many innovations are just old ideas that have never been successfully implemented. Other types of innovation include:

- discovering a new market opportunity
- satisfying an unserved segment of the market
- anticipating foreign needs (based on successfully met domestic needs)

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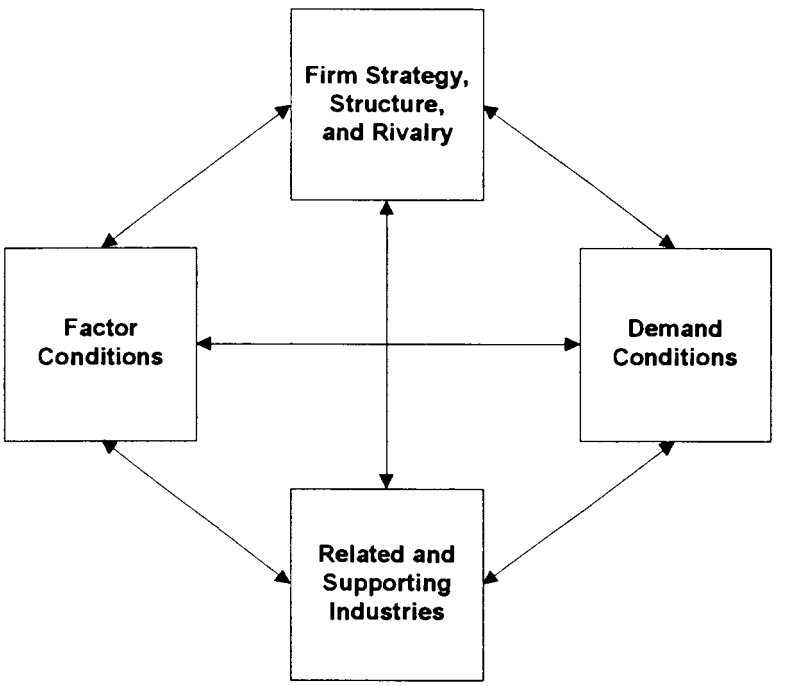
[12] Michael E. Porter, "The Competitive Advantage of Nations", *Harvard Business Review* (HBS Publishing Division. 1990).

The determinants of a nation's competitive advantage can be illustrated using Porter's Diamond of National Advantage, a system consisting of the inter-relationships between four attributes: factor conditions, demand conditions, related and supporting industries, and firm strategy, structure, and rivalry.

Figure 2.2 - Porter's Diamond



Factor Conditions

Factors of production, such as a highly skilled team of technical specialists, must be created, not inherited. Those factors which contribute most heavily to a company's success are those which are specialized and which require a significant level of investment. The more specialized a factor is, the more difficult it is for a foreign competitor to imitate the factor. For example, a

consortium of pharmaceutical companies might fund a research institute specializing in the development of new drugs. Non-specialized factors that are merely inherited can be overcome by new technologies or processes, and thus do not prevent foreign competitors from entering the market and gaining valuable market share.

As well as being able to create production factors, a firm must strive to overcome factor disadvantages. Japan succeeded in overcoming the factor disadvantage of exorbitantly high land costs. The "just in time" production process was an innovation borne of streamlined inventory processes and lack of storage facilities. Those nations with vast amounts of storage facilities were not sufficiently motivated to discover this innovation. Japan had no choice but to innovate in order to overcome the high land cost disadvantage and effectively compete against global competitors.

Demand Conditions

The characteristics of an industry's domestic buyers will govern the competitive success of that industry's companies. Demanding domestic buyers will force companies to continuously innovate and upgrade their products and services. Companies are thus pressured to innovate faster in order to compete with their domestic rivals. A successful company will ask it's customers for product suggestions and improvements, and then respond to these suggestions by upgrading its products. Eventually, demanding buyers enable the company to anticipate its customers' needs, as the company becomes more attuned to the demands of its local customer base.

Demanding buyers may impact the international market for an industry, especially if the local demand foreshadows the needs of other countries. Denmark, a country long known for its position on environmentalism, is

renowned for companies specializing in pollution-control. This concern for the environment has eventually spread to other nations, with Denmark's pollution-control companies leading the global pack of competitors.

Related and Supporting Industries

Home-based related and supporting industries afford a company several advantages. Firstly, home-based suppliers can deliver inputs to a company quickly and efficiently, sometimes giving preference to local companies over foreign companies. Secondly, and more importantly, related and supporting industries allow for faster communication of ideas and innovations. Because the industries are inter-related, they can remain in constant contact and thus keep each other informed of changes in the workplace, product offerings and new suppliers. As information flows between the companies, the rate of innovation and upgrades increases.

Firm Strategy, Structure, and Rivalry

National context tends to shape the manner in which companies are formed and managed. Italy, known for its strong family values, tends to consist of small or medium-sized companies that are privately owned and operated. In order to be competitive, however, a company must successfully forge its national context with its industry specific competitive advantages. The goals of a nation's industries tend to differ from its global counterparts, since every country strives to achieve different goals and objectives. For example, American companies tend to promote short term gains as a means of rewarding its employees. More emphasis is placed on short term results than on longer term results. This directly contrasts with behaviour in Germany and Switzerland, where the majority

of the nation's shareholders are banks that focus on long term savings and mature growth.

Intense local rivalry spurs the companies in an industry to innovate at a faster pace. The competition itself serves as a stimulus that effectively forces companies to keep improving and upgrading their products, in order to compete in the local market. Without such a stimulus, a company tends to stagnate. Companies require motivation to continuously improve, and intense local competition provides this motivation.

Impact of Porter's Attributes on FDI

A company that skillfully manages Porter's four attributes will be innovative and efficient, enabling the company to develop a sustainable competitive advantage against foreign firms if it subsequently expands into a foreign market.

Any specialized factor conditions which the company has developed will be difficult for foreign firms to imitate in the short run. Demand conditions which spill over from the company's market into the foreign market will allow the company a significant lead over its foreign competitors, since foreign companies have not yet had the opportunity to evaluate and respond to customers' escalating requirements. The advantage of related and supporting industries for a company entering a foreign market is less obvious, however, since it may be difficult to sustain the existing level of communication when the company expands into a new country. Also, the company will have to establish new links with related industries in the foreign market, which will likely take some time. The processes established for rapidly diffusing information and ideas within the company, however, will certainly assist the company in the foreign market. This

diffusion process will allow the company to draw on expertise and knowledge from its home base as required.

Although the company may have an edge on its foreign competitors upon entry into the new market, in the long run the company will have to continuously innovate and upgrade in order to stay ahead of the competition. A competitive advantage that sets the company apart from its foreign competitors is not protectable. Wherever possible, competitors will attempt to either copy the new service or product innovation, or else challenge it with their own innovations. Therefore, it is essential that the company strive to upgrade and develop new innovations on an ongoing basis. Without continuous innovation, the company will become complacent, settle into inertia and eventually forfeit its lead position.

2.4. Summary of Theories

The purpose of theoretical analysis is to answer one or more questions. If the theory does not sufficiently address the key questions, then the theory does not provide any confidence whatsoever in its predictions[13]. The theories presented in the previous sections answer two basic questions:

1. Why do firms become multinational?
2. Why do multinational firms succeed in foreign markets?

From the theory, one can analyze the probable sequence of analysis that the firm must embark upon during its journey from purely domestic activities to

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[13]James. R. Markusen, "The Theory of the Multinational Enterprise: A Common Analytical Framework," *Direct Foreign Investment in Asia's Developing Economies and Structural Change in the Asia-Pacific Region* (Boulder: Westview Press, 1991), p. 12.

foreign direct investment. A suggested framework for this analysis consists of three phases, and can be applied to firms in a single industry:

Phase 1

- The firms in the industry are involved in domestic activities only, and foreign competitors have not yet infiltrated the local market. Growth is achieved via existing product markets, or through product development.
- Companies continuously monitor the domestic market and make proactive strategic decisions.
- Once the domestic market becomes saturated, and business opportunities have been fully exploited, firms begin contemplating other growth strategies, such as market development into newly targeted segments, diversification into new products and new markets, or investment in foreign markets,
- Chance stimuli, both internal and external, may trigger the contemplation of foreign investment.
- Shareholders may pressure management into looking further afield for more lucrative investments, in order to reap bigger profits and to diversify the firm's risks.

Phase 2

- Once a firm has identified one or more possible foreign markets to pursue, it must "look inside" itself to determine its core strengths, or advantages. These firm advantages, which have the nature of a public good, must set the firm ahead of its competitors (domestic or foreign) if it is to succeed in the targeted foreign market.
- For each targeted foreign market, the firm conducts research on optimal locations for management, administration, and production. Sources of

funding, differences in exchange rates, and trade barriers are some of the criteria used to evaluate possible locations.

- The firm gathers the relevant information on the foreign market (political conditions, geographical issues, established competitors) in order to make robust strategic decisions.
- The competition in the local market intensifies as customers become more knowledgeable and demanding, and product designs become more sophisticated. Companies continuously innovate, upgrade, and improve in order to stay ahead of their competitors.
- Rivalry among companies intensifies, and the rate of innovation escalates.
- The local industry will start to increase its level of exports to foreign countries.

Phase 3

- Those firms already involved in exporting will begin to investigate the possibility of more direct forms of foreign investment. Transportation costs, communication costs, and knowledge of foreign business practices are all included in the list of factors used to evaluate between direct and indirect investment.
- Firms enter those foreign markets where demand in their home country foreshadows the demand in these foreign countries.
- The successful international firm competes against local (and possibly other foreign) competitors in the foreign market.
- The international firm exploits its assets with "public good" characteristics which give it a competitive advantage, thus enabling the firm to overcome the home court advantages of local firms.

- Product and process innovations are continuously sought and implemented, thus maintaining the firm's lead over local firms.

2.5 Potential Investment Strategies

A firm can exploit market opportunities in a foreign country by one of the following strategies:

- export
- license
- greenfield investment
- acquisition
- joint venture

The first two strategies, export and license, are indirect forms of investment: the firm does not directly invest in operations located in foreign markets. Foreign direct investment involves significant managerial participation in the foreign market itself. Neither exporting nor licensing requires the investment of management expertise in foreign markets. The latter three investment types -- greenfield, acquisition and joint venture -- are direct forms of foreign investment, since they require varying amounts of capital, knowledge-based assets, and management expertise to be invested in foreign markets.

Chapter 3
Modes of Foreign Direct Investment

3.1 Introduction

The degree to which a company invests in a foreign country governs how readily the company can exit from that market, if need be. An investment which requires significant sunk capital outlay does not provide the "easy out" that a less capital intensive venture does. Other requirements which may vary between investment options include management expertise, staffing of operations and administration activities, regulations imposed by foreign governments, and payback term. Before a company decides which type of investment it should make in a foreign market, it must first determine the level of commitment it is willing to make: it must define how much it is prepared to lose if the foreign investment fails.

The three entry modes for foreign direct investment are acquisition, greenfield investment, and joint venture. These options range from most risky (greenfield investment), to a lesser level of risk (acquisition), to the least risky option: joint venture. The risk rating is measured based on the ease with which the company can enter the foreign market, as well as exit from that market, if the investment does not fulfill management's objectives. The definition, advantages, and disadvantages of each of these entry modes are discussed below.

3.2 *Entry Modes*

3.2.1 Greenfield Investment

A greenfield investment is the startup of either a brand new company in a foreign country, or the establishment of a foreign subsidiary by a parent company.

The responsibility for the planning, design, and implementation of the new company (or subsidiary) lies with the acquirer. Although limited somewhat by government and industry regulations, the acquiring company retains the exclusive right to mold and shape the new company. Decisions faced by the acquiring firm include: where to locate the firm's operations, and administrative and management functions; which source of labour is most appropriate; which supplier(s) to source raw materials from; and which customer segments to target in the foreign market.

The amount of time and capital required for a greenfield investment is usually significant. High cost items such as land, buildings, and equipment must be purchased. Determining the best location for operational and administrative activities may take a lengthy period of time, depending on the availability of real estate and suitability of sites. Startup costs can be difficult to estimate, particularly if the investing firm has little experience working in the foreign country and, specifically, within the foreign target market.

Depending on the political and economic conditions of the foreign country, the risk of expropriation of the greenfield company may be notable. Expropriation is the physical take-over and control of foreign assets by the host government, usually accompanied by some kind of compensation or

reimbursement to the firm, the value of which is decided by the host government[14].

3.2.2 Acquisition

For a company to acquire a foreign firm, it must purchase all or part of the voting stock or assets of the foreign firm[15]. Acquisition allows a company to retain ultimate control over the most critical aspects of the business: operations, profits, management and production decisions. A tight rein on technological assets and management practices can also be secured[16].

A large capital outlay is usually required for an acquisition; besides purchasing the foreign firm's physical assets (land, plant, equipment, inventory, etc.), the acquirer must pay for less tangible items such as goodwill and patents. Depending on the firm's financial situation, it may be necessary to raise funds for the acquisition through increased debt and/or equity financing.

Acquiring an existing firm will pose less risk than making a greenfield investment if the acquired firm is already firmly established within the industry. A firm that has successfully operated within an industry for some years will have already established its own unique brand of operational, strategic and organizational structures, policies and procedures. These intangible assets provide the acquiring firm with a solid starting point. The acquisition of a failing

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[14]Sonia El Kahal, *Introduction to International Business* (Berkshire, England: McGraw-Hill, 1994), p. 22.

[15]R. Duane Hall, *Overseas Acquisitions and Mergers - Combining for Profits Abroad* (New York: Praeger, 1986), p. 27.

[16]Sonia El Kahal, *Introduction to International Business* (Berkshire, England: McGraw-Hill, 1994), p.124.

firm, however, may offer as much risk as a greenfield investment if the acquired firm's credibility has already been significantly damaged by its past behaviour.

Similarly for greenfield investments, the host government may be openly hostile to the prospect of foreign ownership, thus increasing the risk of expropriation.

3.2.3 Joint Venture

A joint venture is the formation of a company by two or more partners. The partnership may be between firms from different countries, between foreign multinationals (MNE's) and local governments, or between MNE's and local business people[17]. The main purposes of a joint venture are to build a larger resource pool that all partners can utilize, and to accomplish as a team what each single partner is unable to accomplish on its own[18].

Forming a joint venture operation allows a firm to share its risk, learn a multitude of skills from its partner(s), attain additional proprietary knowledge, and gain access to new distribution channels[19]. Compared to greenfield investments and acquisitions, joint ventures offer less danger of expropriation by government, provided the amount of foreign ownership does not exceed stipulated limits[20]. Other advantages of joint ventures (from the point of view of

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[17]Ibid, pp. 127-8.

[18]Beamish, Killing, Lecraw, and Morrison, *International Management: Text and Cases* (Illinois: Irwin, 1991), p. 118.

[19]Lei and Slocum (1991), pp. 44-62.

[20]In some countries, the amount of foreign ownership of an international joint venture is limited to 40%.

the home firm) include access to government contacts, experience with the host culture, and extensive knowledge of the host industry.

One disadvantage of joint ventures is that they are frequently very difficult to manage: usually, both partners want to dominate. Joint ventures involving partners with divergent objectives, corporate cultures, and management styles find it difficult to focus on a single vision and purpose, and the final product (or service) ultimately suffers. Even if the partners share a similar set of goals, and the relationship is managed effectively, the possibility still exists that the host partner could take advantage of the learned skills and/or technology by creating another new company that eventually competes in the same market.

3.2.4 Choosing the Lowest Risk Alternative

Clearly, the joint venture is among the lowest risk alternative modes of entry, in terms of capital investment, and barriers to entry and exit. The problems inherent to joint ventures can be mitigated by ensuring that the correct partner is selected.

Joint ventures have also been used as a means of reducing political risk. The rationale for this approach is that once the partnership is formed, any negative government initiatives will affect both partners. By choosing to form a joint venture (as opposed to acquiring an existing company), the foreign firm hopes to avoid discriminatory restrictions, increase its bargaining position with respect to the host government, and to minimize its exploitive image[21].

The balance of this chapter focuses on the planning, design, and ongoing management of international joint ventures. For simplicity, international joint

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[21]Sonia El Kahal, *Introduction to International Business* (Berkshire, England: McGraw-Hill, 1994), pp 17-8.

ventures involving two partners (not three or more), one from the home country and one from the host country, will be discussed.

3.3 International Joint Ventures

Historically, joint ventures were used as a means of gaining access to foreign markets that firms were only marginally interested in. Recently, joint ventures have become more of a mainstream activity of the corporation. MNE's with independent operations scattered across the globe have now started to increase their joint venture activities. General Motors and IBM, both companies with subsidiaries in several countries, have started to form joint ventures with overseas companies[22].

"Competitive collaboration" is a form of foreign direct investment that includes joint ventures, but also includes activities such as outsourcing agreements, product licensing, and cooperative research. Collaboration between competitors is viewed as a way of enhancing internal technologies and skills, while protecting a firm's competitive advantage from it's partner. The key principles guiding a success collaboration are:

a) Collaboration is competition in a different form.
b) Harmony is not the most important measure of success.
c) Cooperation has limits: companies must defend against competitive compromise.
d) Learning from partners is paramount[23].

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[22]Beamish, Killing, Lecraw, and Morrison, *International Management: Text and Cases* (Illinois: Irwin, 1991), p. 118.

[23]Hamel, Doz, and Prahalad, "Collaborate with Your Competitors - and Win", *Harvard Business Review*, Jan.-Feb. 1989.

3.3.1 Motivations for Forming a Joint Venture

There are four basic purposes that can be achieved by forming a joint venture[24]:

Table 3.1 Motivations for Forming a Joint Venture

New Markets	To take existing products to foreign markets	To diversify into a new business
Existing Markets	To strengthen the existing business	To bring foreign products to local markets
	Existing Products	***New Products***

The two motivations involving existing markets (collaborating with a local competitor to strengthen one's local business, and collaborating with a foreign company to bring foreign products to the local market) will not be examined here, since they deal with investment in local markets. The remaining two motivations (introducing existing or new products into a foreign market by collaborating with a foreign company) are examined below.

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[24]Beamish, Killing, Lecraw, and Morrison, *International Management: Text and Cases* (Illinois: Irwin, 1991), p. 119.

Taking Existing Products or Services to Foreign Markets[25]

Firms entering joint venture agreements with foreign companies attempt to reduce entry risk by starting out slowly, gradually expanding their business in the foreign country as their experience in the foreign market grows. To begin with, the joint venture may focus on sales and marketing functions only. The home partner, after shipping the finished product to the host country, will work with the host partner to attract and retain customers. Similarly for a service-oriented business, the home partner will introduce the service to the host partner, ensuring that the host partner is sufficiently trained to provide the service to customers in the host country. Once the product (or service) has gained a foothold in the host market, the home partner may open a simple assembly plant to assemble the new product (or a studio to showcase the new service) in the host country. This gradual increase in commitment on the part of the home country is designed to reduce market uncertainty. Once market uncertainty is reduced, the home firm will invest more resources in the venture.

Another method of reducing market uncertainty is for a firm to follow its existing customers to foreign markets. Many Japanese automobile suppliers have followed Japanese automobile producers such as Honda, Toyota, and Nissan into the foreign markets of North America and Europe. Joint venture partnerships have formed between Japanese and host automobile suppliers, in an effort to learn more about the production of Japanese automobiles in the host country.

Firms in the service industry may also follow their domestic customers abroad. Ernst & Ernst, a major accounting firm, followed many of its major

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[25]Ibid, page 125.

clients into foreign markets. In the late 1960's, Ernst & Ernst followed Corn Products into Western Europe as a means of satisfying the accounting requirements of Corn Products' subsidiary in Denmark. Accounting practices differ widely between United States and Denmark, and the Danish subsidiary was required to complete accounting statements as per Danish accounting practices. Since Ernst & Ernst had no experience with Danish accounting practices, it became necessary for Ernst & Ernst to enter the Danish accounting market to learn the necessary accounting skills to satisfy the Danish subsidiary. Once they had gained new knowledge in foreign accounting practices, the accounting firm was able to attract new foreign customers[26].

Diversifying into a New Business[27]

Many firms have attempted to diversify into new industries, only to fail miserably because they lacked the knowledge required for this new type of business. An example of this is the case of three Japanese firms (Mitsubishi, Fuji, and Kawasaki Heavy Industries) that attempted to produce a medium-sized aircraft, called the YX-11. Because the joint firms did not possess an up-to-date knowledge of aircraft design, production, or appropriate marketing techniques, the venture failed. It was not until these firms partnered with an experienced American aviation firm (Boeing) that they succeeded in developing a new jet engine. The most important benefit of this joint development for the Japanese firms was to learn how to design, develop, and test aircraft components. Since

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[26] Personal correspondence with Dr. Richard Schwindt, Faculty of Business Administration, Simon Fraser University (July, 1995).

[27]Beamish, Killing, Lecraw, and Morrison, *International Management: Text and Cases* (Illinois: Irwin, 1991), page 128.

this venture, the three firms (in conjunction with Boeing) have proceeded to jointly develop the Boeing 777. This example highlights the importance of joint ventures for the transfer of knowledge between companies who have chosen to diversify into new types of business.

3.3.2 Identifying Capabilities and Needs

Before deciding to enter into a joint venture, the home firm's management must consider the planned time period for the investment: is a partner required for only the short term (e.g., six months to a year), or for a longer term period, such as several years. A partnership which is likely to exist for only a short period of time should be reconsidered: perhaps a less formal, non-binding relationship would be more appropriate.

Once the decision has been made to enter into a joint venture agreement in a foreign country, the firm must first take stock of its internal environment by identifying its capabilities and needs. The firms' capabilities are those areas which the firms' management believe do not require enhancements from a partner, whereas the firms' needs are those areas requiring specific assistance from a partner. For example, a manufacturing firm may have access to specialized technology and patented products which it intends to market to a foreign country. However, the firm's management may be inexperienced in the management practices of the foreign country, as well as with the product customizations required for successfully marketing the product abroad. A joint venture partner with management and marketing expertise in the foreign country would fulfill the needs of the manufacturing firm; since the manufacturing firm already has extensive technical and production knowledge, it does not necessarily require a partner that already possesses these skills.

3.3.3 Selecting the Appropriate Partner

When searching for a joint venture partner, it is likely that the firm will interview several candidates. The two most important questions to be addressed as part of each partner assessment are:

1. Would this partner bring needed skills and resources to the joint venture?
2. Would this partner and my own firm cooperate effectively?[28]

The first question should be fairly simple to address if the firm has already completed its background research by identifying its own skills and resources, and if the candidate partner has provided the requisite information regarding its own corporate profile.

The second question is a more difficult question to address, especially if the two firms have not yet built up a business relationship. The degree of cooperation required will likely depend on the planned level of integration between the partners: if both partners will be responsible for managing the joint business, then a higher level of effective cooperation will be required. Similarly, those joint ventures which encompass several functional areas (e.g., production, marketing, R&D, etc.) will also require a higher level of cooperation between the joint venture partners. A lesser degree of cooperation would be required in joint venture relationships where each partner has a discrete set of responsibilities, with minimal interaction occurring between the partners.

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[28]J. Peter Killing, Foreword to *Joint Venture Partner Selection* (Westport, Connecticut: Quorum Books, 1988), p. xiii.

If the following scenarios exist in the relationship between the partners, then the degree of cooperation between the partners will be enhanced[29]:

- the partners are of similar size,
- the partners share similar objectives for the venture,
- the partners have compatible operating policies,
- there are a minimum of communication barriers between the firms,
- the partners have compatible management teams,
- there is a modest level of mutual dependence between the partners, and
- the partners develop a degree of trust and commitment.

Before a joint venture has been made legally binding, the potential partners should seriously consider working together on a small project first. The experiences gained on this initial project would allow the partners to critically evaluate each others' business performance, and to potentially re-negotiate details of the relationship before the legal contract is signed.

3.3.4 Designing the Joint Venture

The first step in the design of the joint venture is to define the scope of activity: namely, what are the basic strategic requirements to be met by the joint venture? The attractiveness of the targeted market, assessment of major competitors, description of required resources, etc. all must be addressed in the scope definition. The amount of strategic freedom to be accorded to each partner must be carefully defined and agreed upon; for example, how much freedom does each partner have with respect to making major product or service modifications, choosing a new supplier, or approaching new customers? A key

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[29]Ibid, p. xiv.

element in successfully defining the scope of activity and addressing the strategic freedom issues is the potential payoff to each partner: the payoff to each partner must be considerable. If the payoff to each partner is only minor relative to its other business activities, then the degree of motivation necessary to make the joint venture successful will be lacking.

The structuring of management roles must also be addressed: will the partners share the management fairly equally, or will one partner dominate? The amount of power that each partner holds for the two basic types of decision-making -- operational (day-to-day) and strategic -- governs the ease of joint venture management. A joint venture in which one partner dominates both types of decision-making is typically easier to manage; similarly, if one partner dominates day-to-day decision making, while strategic decision-making is shared by both partners, the venture will run more smoothly. The most difficult types of ventures to manage are those in which both partners play a shared role in both operational and strategic decision-making[30].

Although dominant-type joint ventures are easier to manage, they may not necessarily lead to success in terms of healthy profits and significant market share. Those decisions which overlap both operational and strategic environs (such as what type of product modifications are required when only one partner has extensive knowledge of the product) will likely require input of both partners. Shared decision-making may be more difficult to manage, but it is necessary for those ventures requiring constant input from both partners. Before deciding on a shared management joint venture, however, the two partners must determine that the benefits of shared management clearly outweigh the extra costs

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[30]J. Peter Killing, *Strategies for Joint Venture Success* (Praeger, 1983), Chapter 2.

incurred. If a partner is contributing assets and/or attributes only, and does not have significant contributions to make to managerial decisions, then that partner should become passive, with the other partner dominating. Examples of assets and attributes include capital, trademarks, patents, nationality, and source of raw material or component supply. These assets and attributes are critical to the success of the joint venture, but they do not require managerial involvement from the partner supplying them[31].

Once the management characteristics of each partner have been determined, an appropriate reward system must be established. Dividends, management fees, technical fees, and profits on goods sold to the venture must be distributed between the partners. In dominant-passive joint ventures, management and technical fees are typically given to the dominant partner, while profits on goods sold to the venture are given to the passive partner. In shared management ventures, the foreign partner usually receives a technical fee, with the local partner receiving the management fee. Once the reward system has been designed, re-negotiation of payments may be necessary to balance the rewards received by the partners.

3.3.5 Writing the Legal Contract

Once an informal agreement has been made between two or more partners to form a joint venture, a legal contract which binds the agreement must be written. A sample table of contents for a joint venture agreement follows[32]:

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[31]Ibid, pp. 53 - 54.

[32]Deloitte, Haskins, & Sells International, "Teaming Up for the Nineties - Can You Survive without a Partner?", undated.

1. Definitions.
2. Scope of operations.
3. Management.
    - Shareholders and supervisory regarding board.
    - Executive board.
    - Arrangements in the event of deadlock.
    - Operating management.
4. Arbitration.
5. Representations and warranties of each partner.
6. Organization and capitalization.
7. Financial arrangements.
8. Contractual links with parents.
9. Rights and obligations and intellectual property.
10. Termination agreements.
11. Force majeure[33].
12. Covenants.

"Arrangements in the event of deadlock" are necessary for ensuring that a set procedure is in place when the joint venture partners come to loggerheads over one or more issues. Without such a clause in the agreement, the partners could potentially waste valuable time (weeks, months, or even years) fighting a battle which neither side wishes to concede. One example of such a clause would be to procure an unbiased negotiator (external to both firms), who would arbitrate the discussions and provide a compromise solution.

The purpose of a termination agreement is to ensure that a clause is in place in the event that one (or both) of the partners decides to end the venture before the contract completion date. This clause can be likened to a marriage

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[33]A force majeure clause establishes the actions to be taken in the event of an Act of God (such as an earthquake or major storm).

contract: the two parties establish how to dissolve the relationship if serious disagreements cannot be resolved. A "shotgun clause" is normally used for a termination agreement: each partner establishes a price it is willing to pay for the other partner's shares, in the event of termination.

3.3.6 Monitoring the Joint Venture Relationship

The ongoing relationship of the joint venture partnership must be monitored carefully. A well-crafted legal contract and a strong working relationship will help get the joint venture off to a smooth start, but management must be on the lookout for potential problems. Cultural differences may begin to be noticed: differences in management styles, use of team-building techniques, levels of bureaucracy, etc., may lead to frustration on the part of management and staff alike. Cultural differences encompass not only corporate culture, but differences in foreign culture as well. Training employees to work in harmony with their foreign counterparts is frequently used to minimize cultural rift between partners.

Many joint ventures start with two partners with similar goals and objectives, but as the two firms grow and expand, their goals and objectives tend to diverge. The main indicator of a successful joint venture is the ability of its partners to maintain coincident objectives over a long period of time. The key reasons for joint venture failure are[34]:

- Lack of adequate pre-planning
- Lack of attention and flexibility

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[34]John Walmsley, *Handbook of International Joint Ventures* (London: Graham & Trotman, 1982), p. 10.

- Lack of policy agreement

To be successful, joint venture partners must relentlessly focus on the shared business objectives, giving constant attention to the evolving needs of the joint venture.

Chapter 4
The IT Consulting Industry

4.1 Introduction

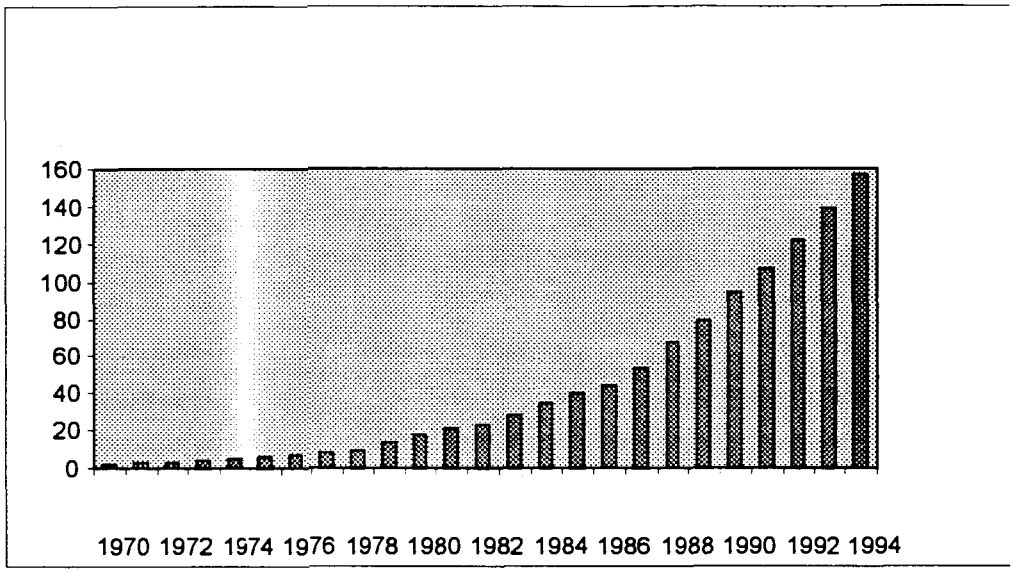
Sierra Systems Consultants Inc. (Sierra) is a Canadian Information Technology (IT) consulting firm. IT consulting is a subsegment of the professional services segment of the computer software and services industry in North America. Sierra is considering expansion into the ASEAN market by forming a joint venture with a Malaysian company. Before analyzing this foreign direct investment opportunity, it is necessary to first investigate the overall computer service industry in North America, focusing on IT consulting within Canada and the United States. This industry review will be followed by an in-depth analysis of Sierra: its corporate history and structure, customers, competitors, and inherent strengths.

4.2 Computer Software and Services

The computer software and services segment is a rapidly expanding industry. The following chart illustrates the expansion of this industry in the United States (the U.S. generally sets the trends of the industry in North America):

Chart 4.1 - U.S. Computer Software & Services[35]

(Revenue in $B U.S.)



The three major categories of the segment are processing services, professional services, and information services. Also known as the software services segment, the computer services segment consists of companies that sell services in which software plays an integral role[36]. The categories are defined as follows:

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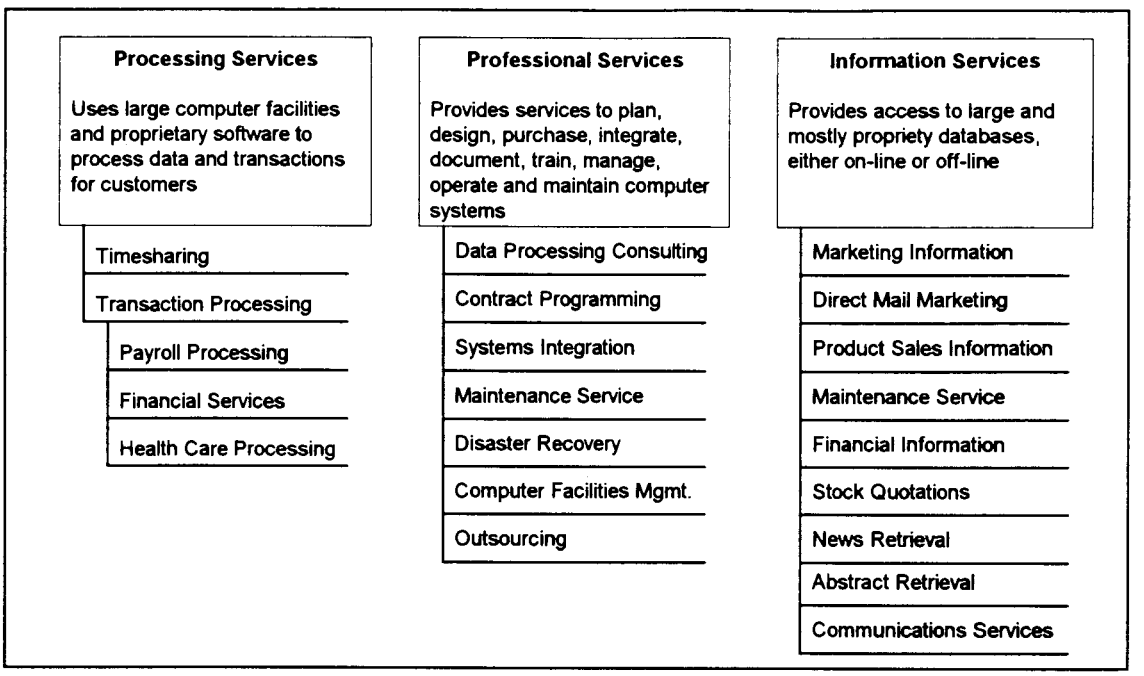
[35] Egil Juliussen and Karen Petska-Juliussen, *The 7th Annual Computer Industry 1994-95 Almanac* (The Reference Press Inc., Austin, Tx, 1994).

[36] Science Council of Canada, *Sectoral Technology Strategy Series: No. 15 The Canadian Computer Software and Services Sector* (Minister of Supply and Services, Ottawa, Canada, 1992), p. 8.

Figure 4.1 - Computer Service categories[37]



The two subsegments of processing services are timesharing and transaction processing. Processing services firms use their own hardware and software for processing large volumes of transactions for customers. Timesharing, once popular in the 1960s and 1970, has declined in use since the 1980s with the introduction of smaller and cheaper computers. Providers of transaction processing offer vertical market applications for processing large volumes of transactions. Examples include payroll processing, insurance claim processing, and brokerage processing.

Within the professional services segment, systems integration is the most important subsegment. Systems integration involves the planning, design, and

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[37] Egil Juliussen and Karen Petska-Juliussen, *The 7th Annual Computer Industry 1994-95 Almanac* (The Reference Press Inc., Austin, Tx, 1994), p. 18.

implementation of a computer system and associated networks. Professional services includes data processing consulting, systems design, development, custom software, implementation, documentation, training, facilities management, maintenance, disaster recovery services and outsourcing. Companies typically offer one or more of these services. Outsourcing is a relatively new development within this segment. An outsourcing company typically uses its own employees, hardware and systems software to take over all or part of a customer's information services department.

The collection, manipulation, and dissemination of information is handled by information services providers. Information is taken from proprietary databases and distributed using different formats: paper, disks or tapes, CD-ROM or via on-line sources, such as CompuServe and the Internet.

The computer services industry began in the 1960's, when vendors of mainframe computers provided system software[38] and their customers, usually government or large corporations, developed their own application programs with the support of the vendor. The application programs were typically large and complex systems, such as airline reservation systems. In 1969, IBM, the leading mainframe vendor, decided to sell hardware and software separately. This action paved the way for specialist software firms, who entered the market to develop applications software.

The introduction of the personal computer (PC) by IBM in 1982 signaled the start of the computer revolution. PC's offered advanced processing power, increased memory and disk storage capacity, and they were cheaper, making

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[38] System software performs housekeeping functions on a computer, such as managing the sharing of CPU usage or printer devices between multiple users. An operating system (e.g. MS/DOS, MS Windows, OS/2) is one type of system software.

them instantly accessible to businesses large and small, as well as individual users. Finally, software was being developed for both home use and business use, at an affordable price. The rapid rise of PC usage facilitated the growing demand for new application software, or software packages.

Software packages are required by corporations to apply computer power to business tasks. At first, many companies used their own resources to build software packages. Many companies simply do not have the financial resources nor the employees with the required skill sets to effectively support the company's application software needs. Outsourcing was born as a direct response for this need to contract a company's software development and systems integration to a professional services company. In-house development has given way to the purchase of software packages, which can be customized to suit a company's particular business needs. Professional service firms provide software package evaluation, customization, and implementation services to companies that lack the resources to develop their own application software from scratch.

Globally, the computer services market was estimated at $60B U.S. in 1990[39]. The following two sections of this paper deal with the professional services subsegment of the computer services industry, focusing specifically on the market situation in the United States and Canada.

4.3 Professional Services Industry in the U.S.

The computer software and services sector of the information technology industry in the United States has grown rapidly since the 1970's. The

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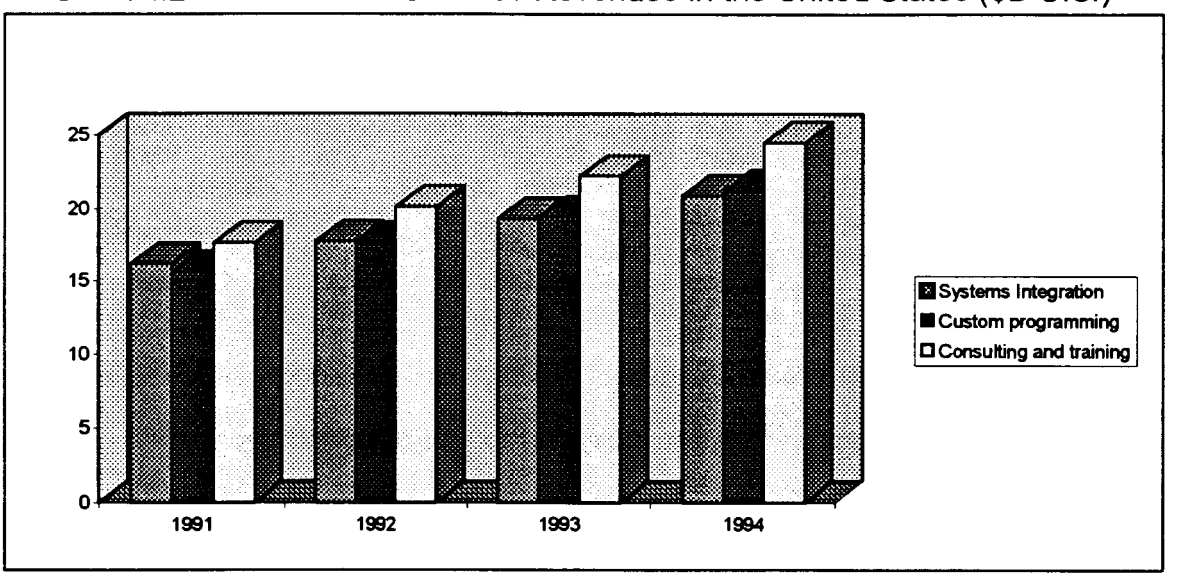
[39] International Data Corp., "Canada's software market," *Financial Post* (August 16, 1991).

professional services industry in the U.S. is made up of three subsectors: systems integration, custom programming, and consulting and training. The following graph illustrates the substantial growth of each of these subsectors from 1991 through 1994[40]:

Chart 4.2 - Professional Services Revenues in the United States ($B U.S.)



System integration involves the provision of total integrated solutions to customers. The integrated solution is implemented in several phases: design, construction, testing, documentation, and installation. The largest customer for systems integration in the U.S. is the federal government. Federal agency customers include the Department of Defense, the Environmental Protection Agency, and the Federal Aviation Administration. In the commercial sector, the market for systems integration is expanding swiftly. The commercial market is expected to expand by 15% to 20% annually through 1995. Systems integrators

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[40] *U.S. Industrial Outlook 1994* (Bernan Press, January, 1994), p. 25-5.

will be made up primarily of hardware vendors, the regional Bell companies, and the Big Six accounting firms.

The rate of growth in the custom programming subsector has actually slowed. The demand for custom programming services has slowed primarily due to the increased use of packaged software, fourth generation languages, and CASE (computer-aided software engineering) application development tools. Once a software package has been purchased, it only requires enhancements in order to customize it to the customer's specifications. Fourth generation languages typically include basic application functionality that can be built upon to create the desired system, instead of building the system from scratch. CASE tools, like fourth generation languages, enable the systems designer to build upon previous systems design, development, and testing experiences to decrease the amount of effort required to complete a system.

Consulting and training is being marketed in the United States as one of the main contributors to worker productivity and firm efficiency. Revenue growth in this subsector is somewhat constrained by the increase of computer-related training in educational institutes, and by increases in software-based and video-cassette tutorials available in retail stores. Over 30 percent of consulting and training revenues are expected to come from overseas customers, with the largest computer service providers in the U.S. generating most of these revenues[41].

Some of the largest providers of professional services in the United States include Andersen Consulting, Computer Sciences, Electronic Data Systems (EDS), IBM, and SHL Systemhouse. IBM, for example, offers IT

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[41] Ibid, p. 25-6.

consulting services through its Consulting Group division. Although the industry has experienced many mergers and acquisitions in the past decades, the majority of professional services providers are independent, entrepreneurial-based companies which offer professional services in combination with other goods and services. The total number of U.S. firms offering professional services as their primary source of revenue in 1994 was approximately 4,100. Almost 50% of these firms concentrated on offering system integration services. Between the years 1991 and 1994, approximately 400 new firms were created, with the majority of these new firms resulting from the incorporation of sole proprietorships[42].

The required skill set of professional service employees has changed dramatically in response to the rapid changes made in computer technologies. Historically, systems development projects were completed by a single company (such as IBM or DEC) which supplied an integrated system of hardware, software and service. Recently, the number of vendors offering hardware and software has risen exponentially. Competition has driven hardware and software prices down, but the complexity of integrating several vendors' products has increased dramatically. Systems integration projects often require that a client complies with industry technical standards such as integrated systems digital network (ISDN) protocols and the ISO 9000 series of quality-system technical standards. Compliance to technical standards is expected to continue throughout the 1990's.

Across the United States, there continues to be a shortage of computer science professionals, such as programmers and systems designers. College

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[42] Ibid, p. 25-5.

enrollment in computer courses is down throughout the United States; this situation is expected to worsen by the late 1990's. The demand for new software applications within organizations, coupled with the shortage of computer science professionals, has resulted in delayed system implementations. Backlogs of up to two years for software application installations are becoming the norm in companies which are unable to attract and retain computer science professionals.

The provision of outsourcing services is the latest phenomenon of the professional services industry. The first outsourcing contract was signed in 1989 when Eastman Kodak outsourced the management of its information systems division to IBM. An outsourcer (in this case, IBM) takes on an agreed-upon level of a company's data processing and data management tasks. A company may choose to outsource the management of its information technology resources to an external professional services firm because of a lack of skilled IT professionals employed within the company. The primary advantages to a company considering outsourcing include:

- reduced costs, since providers of outsourcing services are much more efficient at managing IT resources, and often can achieve economies of scale,
- high quality service offered by IT consultants, and
- ability to focus on the company's core competencies, by freeing it from dealing with IT related issues.

The outlook for the professional services industry in the United States is healthy: annual growth is expected to exceed 9 percent through 1997, with total

revenues approaching $86.6B[43]. This rate, though healthy, is somewhat slower than the rate of 20 percent experienced in the late 1980's. The professional services industry is, however, one of the fastest growing segments of the U.S. economy. The professional services market will be driven by companies, both in the private and public sectors, which are focusing on increasing both productivity and quality in the workplace. By providing assistance in the design, construction, and implementation of information systems, professional services firms can assist companies to focus on their core business as they "reinvent the corporation"[44].

4.4 Professional Services Industry in Canada

In Canada, the revenue of professional services firms has risen substantially. The following chart shows the rise of revenue as reported by Canadian firms offering professional services[45]:

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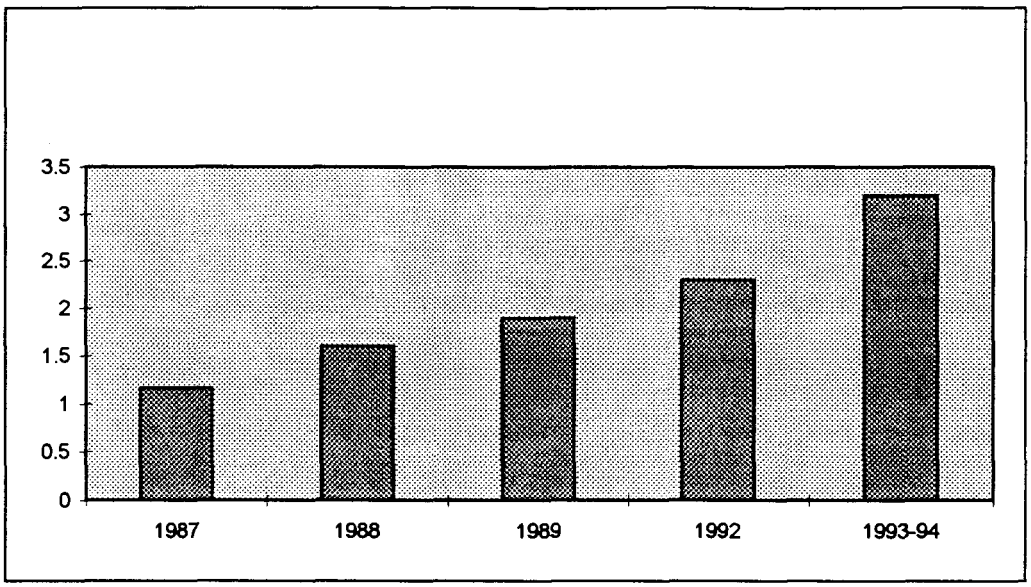
[43] Ibid, p. 25-7.

[44] Ibid, p. 25-8.

[45] Statistics Canada, *Computer Service Industry* (Catalogue 63-222, 1987 - 1994).

Chart 4.3 - Professional Services Revenues in Canada ($B Cdn.)



Revenue estimates for Canadian professional services firms vary widely. According to International Data Corp. (IDC), information technology consulting revenue was only $1.9B in 1992[46], as compared to Statistic Canada's estimate of $2.3B. This disparity is likely due to differing categorizations of professional services by data gatherers.

The top providers of professional services in Canada are large multinationals with over 1,000 employees: IBM, SHL Systemhouse Inc., DEC, ISM Information Systems Management Corp., DMR Group Inc., and Andersen Consulting. All of these large companies have consulting divisions which focus on this subsector of the computer software and services sector, and are capable of providing services to clients in virtually every industry within the country. The remaining professional services firms are small- to medium-sized firms. These

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46 "Complex computer technology a boon to consultants", *The Financial Post* (October 16, 1993), p. S20.

smaller firms generally focus their marketing efforts either regionally (e.g., Western provinces, Prairie provinces, Central Eastern provinces), by industry (e.g., forestry, manufacturing, defense and communications, government, utilities), by application or business focus (e.g., Human Resources, Materials Management, Information Systems Planning), or by computer technology (e.g., client/server, legacy systems, object oriented programming).

Over eighty percent of the worldwide revenues generated by the 50 top professional services companies in the country came from professional services including systems integration and outsourcing[47]. Virtually all export revenues were generated by the top 5 firms. While most of the largest professional services providers are publicly traded, many of the smaller firms are privately owned. Of the 50 top firms, 26 percent reported some degree of foreign ownership.

The professional services industry can be segmented by industry: namely, the class of customer for which computer services are provided. The following pie chart depicts the breakdown of revenues generated by computer service firms according to class of customer, for the years 1993-94[48]:

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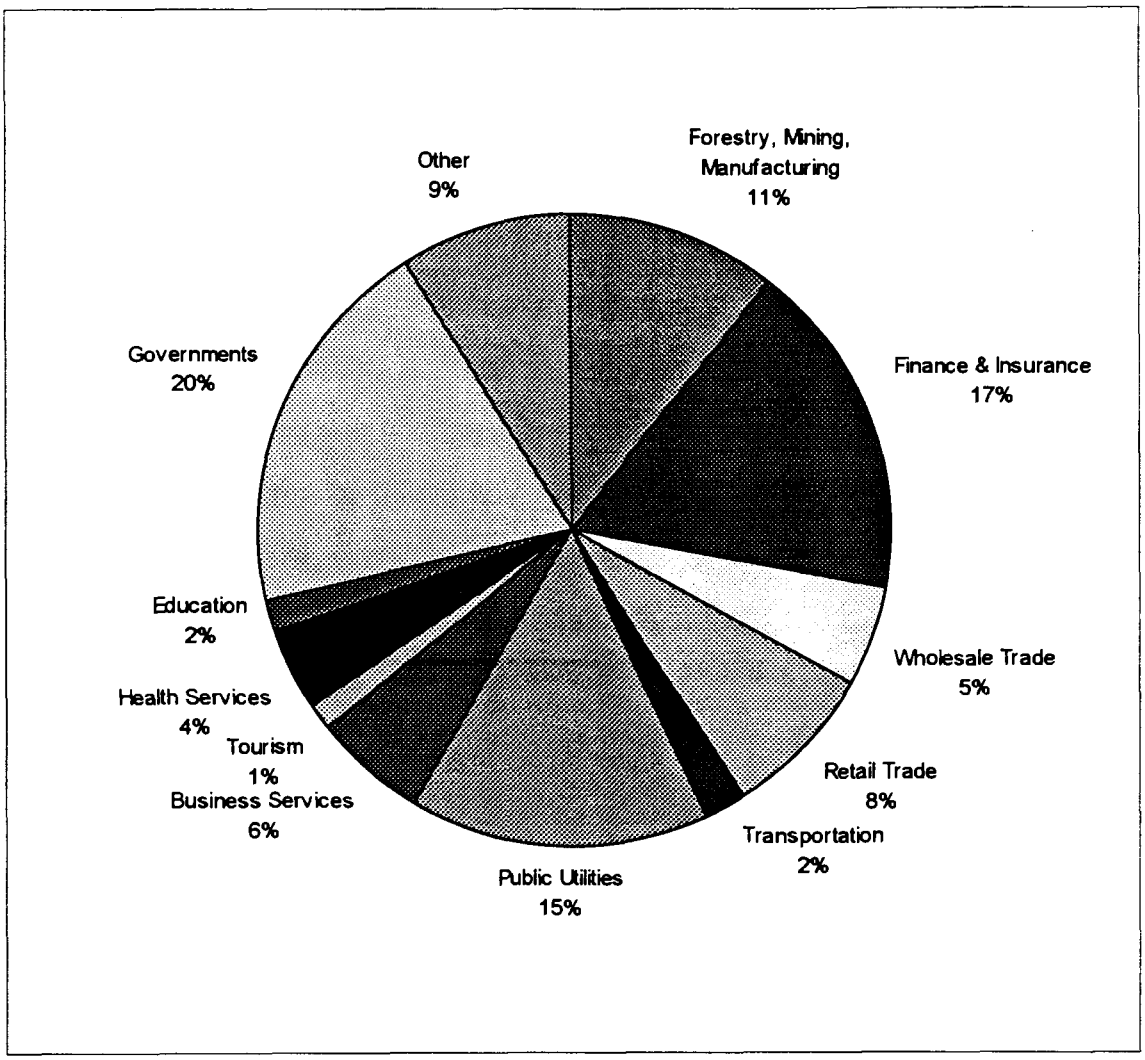
[47] "The Branham 50 Top Canadian IT Professional Services Companies", *The Financial Post Magazine* (March, 1995), p. B6.

[48] Statistics Canada, *Computer Service Industry* (Catalogue 63-222, 1987 - 1994).

Chart 4.4 - Revenue According to Class of Customer,
for Software Development and Computer Service Industry,
as a Percentage of Operating Revenue.



The biggest demand for computer services in Canada comes from the following sectors: governments (federal, provincial, and municipal); forestry, mining, and manufacturing; finance and insurance; and public utilities.

The U.S.-Canada Free Trade Agreement (1989) has resulted in far fewer acquisitions of Canadian professional services firms by U.S. firms than originally

expected. The main result of the agreement has been an increase in cross-border sales. The continued weakening of the Canadian dollar has facilitated increased sales to American clients by Canadian professional services firms.

The most recent development in the Canadian professional services industry is the acquisition of IT consultancies by large multinationals. Amdahl recently announced plans to acquire DMR, the Canadian IT consultancy. Amdahl's goal is to become a supplier of fully integrated hardware, software and service solutions[49]. DMR hopes to expand its consulting business within the United States, where it currently is a small player in the professional services industry. Another potential acquisition is the bid made by MCI Communications Inc. to acquire SHL Systemhouse. Systemhouse, like DMR, hopes to expand its international business by taking advantage of MCI's international client base. If this trend of acquisitions continues, the competitive field for IT consultancies will expand to include the computer services divisions of large multinationals.

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[49] Geoffrey Rowan, "Amdahl to buy DMR for $122-million", *The Globe and Mail* (September 15, 1995).

Chapter 5
Sierra Systems Consultants Inc.

5.1 Company Background

5.1.1 Company History

Sierra Systems Consultants Inc., an information technology (IT) and management consulting firm, was formed in 1966 by three founding partners: Grant Gisel, Ian Reid, and Dave Bowman. The head office in Vancouver, B.C. was opened on October 1, 1966. Eight years later, in 1974, a new branch office was opened in Victoria, B.C. to meet the growing demand of provincial government contracts. Over the last 29 years, Sierra has expanded throughout Canada and the western United States. Branch offices have been opened in Prince George, Calgary, Edmonton, Ottawa, Toronto, Seattle, Los Angeles and Dallas. As of 1995, Sierra employed over 350 staff members.

5.1.2 Corporate Goals and Objectives

Sierra's overall goal is to advance the competitive position of its clients. To accomplish this, Sierra provides high quality and cost effective information technology professional services in order to solve clients' business problems. Sierra provides practical advice and technical expertise to clients in both the private and public sectors, covering a variety of industries.

The vision of Sierra, as articulated by management, consists of the following objectives:

1. To be an industry leader in delivering Information Technology based business solutions.
2. To earn a reputation for quality solutions provided in our client's best interest.
3. To manage our business so that all staff can achieve their full potential.
4. To be a responsible corporate citizen, demonstrating integrity and respect toward all individuals.

Key elements of the industry leadership objective are increased revenues and improved profitability. Sierra's revenue goal for 1997 is $50M Cdn (revenue in 1994 was $26.8M Cdn). In order to meet this goal, Sierra must attract more business from existing clients (repeat business is the largest contributor to Sierra's revenue base) and procure consulting projects with new clients. Sierra does not have a marketing department. Instead, employees are encouraged to market the company's services to existing clients whenever the opportunity arises. New clients are normally procured by responding to requests for proposals (RFP), attending industry-related trade shows and conferences, and by pursuing business or personal contacts.

Profitability is measured as net income before taxes on revenue. Revenue is measured as employee hours billed to a client, multiplied by the employee's billing rate. Each employee has the potential to bill at least 100% of standard hours: 37.5 hours a week. If an employee is not currently billing on a project (i.e. working on a client project and recording hours worked), he/she is referred to being "on the bench". Profitability is negatively affected by significant "bench time", which occurs when several employees are on the bench. While an employee is on the bench, he/she will either help write proposals for client work, work on an internal project (i.e. develop an in-house software application), or perform research on an IT related subject. Although work performed while on

the bench is certainly beneficial to the company, it does not directly translate into increased profits. A profit sharing plan is employed by each branch in order to motivate employees to decrease bench time, thus improving profitability. Each month, if a branch realizes a significant profit, a percentage of the profit is shared between the branch employees. Each individual's share is affected by years of employment and individual salary.

The second objective -- to provide quality solutions to clients -- is achieved by deploying well established methodologies and business practices. Sierra has developed a series of guidelines to be used as structured methods for completing projects for clients. Sierra's Guidelines for Systems Development have been revised continuously over the past 10 to 20 years as a means of keeping ahead of advances in software, hardware, and related technology. Other approaches used to improve the quality of delivered solutions by Sierra include:

- attending seminars and meetings at IT-related organizations, such as the Canadian Information Processing Society (CIPS),
- making presentations (on IT-related issues) at leading conferences and trade shows, and
- publishing papers on IT-related issues.

The third corporate objective involves a significant amount of investment in Sierra's employees. Staff are encouraged to reach their full potential by completing advanced degrees or certificates in IT or general business education. Sierra provides financial assistance for completing further education, and may also rearrange working schedules so that an employee can meet course demands (i.e. subcontract work vs. full-time work).

The fourth and final objective is not unique to Sierra: indeed, most firms aspire to be responsible corporate citizens. Sierra has been involved in numerous committee endeavours, such as conducting charitable drives for the United Way Association of B.C.

The company has set forth the following business strategies as a means of meeting the above corporate objectives:

A. To exploit our expertise in four key industries (vertical focus):

- *forestry;*
- *utilities;*
- *health care; and*
- *the justice system.*

B. To exploit our advanced technical expertise: for example, in system engineering tools, client/server processing and network management.

5.1.3 Corporate Profile & Structure

Sierra Systems Consultants Inc. (Sierra) is fully owned by Sierra Systems Group Inc., a privately held company. The primary shareholders are three senior partners. In the mid-1980's, Sierra initiated a share purchase plan for its employees. Every five years or so, employees are invited to purchase shares in return for a 20 percent tax credit. Once an employee leaves the company, his/her shares are repurchased. Majority control of shares remains with the three senior partners, however.

Sierra can be classified as a multinational enterprise (MNE), since it has established 10 branch offices throughout Canada and the U.S. The company made its first move into international operations in 1980 when it opened its first U.S. office in Seattle. The following table shows Sierra's branch offices, key

vertical and horizontal focuses for each office, ordered chronologically by branch opening:

Table 5.1 - Sierra Branches

Branch	Opened	Vertical Focus (Industry)	Horizontal Focus (Application)
Vancouver	1966	Forestry, Utilities, Local Government, Health Care, Education	Human Resources, Customer Information
Victoria	1979	Provincial Government	
Seattle	1980	General commercial, State Government	
Los Angeles	1985	Government, Judicial	Offender Management
Dallas	1986	Utilities, General commercial	
Edmonton	1990	Utilities, General commercial	
Calgary	1992	Utilities, Oil & Gas, Health Care	
Toronto	1994	General Commercial	Human Resources
Prince George	1995	Provincial Government, Utilities	
Ottawa	1995	Federal Government	

Establishment of a greenfield operation was chosen as the appropriate foreign investment method for entering the United States, since it required less

capital investment than acquisition, and retained 100% Sierra ownership. A startup branch requires only minimal office space, administrative support, and a small group of consultants to staff potential projects.

All three of the American branch offices, especially Seattle, performed unremarkably at first. Revenues were low, and none of the offices managed to turn a profit for some years. In the early 1990's, all three American offices started to produce small but consistent profits. It has taken some time for Sierra's U.S. branches to establish themselves in the U.S. marketplace, but the time and effort appears to have paid off.

Functionally, the organization is divided into three business units: Industry; Utilities; and Government, Education, and Medical. Each business unit relates to Sierra's clients' particular area of activity. Within each business unit, there are several partners responsible for the unit's clients and their projects. There are many horizontal specialties which cross over business unit boundaries: these include Human Resource and Customer Information systems.

Sierra has a relatively flat organization of only 3 levels: partners, then principals, then employees. At each branch office, there are between 1 and 16 partners. A partner's main responsibilities are to procure new business, maintain business contacts at current client sites, and monitor the progress of projects within his/her Business Unit. For every project for which a partner is responsible, he/she provides free consulting services to the client for the duration of the project.

Principals, the second level of management, assist with marketing functions, manage projects, and manage the rest of the Sierra employees. Although principals typically are involved in client projects themselves, they are also responsible for monitoring the performance of employees and assisting them with their career plans. The third level of employees is not actually a

"level" as such, since the range of experience among them is great. Employees in this category range in experience from junior programmer to senior consultant.

5.1.4 Corporate Culture

The culture of Sierra strikes a balance between innovation in information technology and controlled company growth. Although the company has grown substantially to over 350 employees, this growth has taken place over a time period of 29 years. Company growth has occurred in a controlled fashion in order to maintain financial stability and long term viability. During the recession of the early 1980's, Sierra did not dismiss a single employee, but the rate of new hires dropped off substantially. Once the economy had recovered, hiring resumed at a healthy rate.

Major shifts in technology, methodology, and business practices have contributed to an environment where companies find it increasingly difficult to keep abreast of technology. These companies need an expert to turn to for advice on using Information Technology to help them keep ahead of their competitors. In the vast sea of technological experts, Sierra has maintained a stable position as an experienced provider of technology based business solutions. This rock-like image has been carefully cultivated by the partners of the company, so that current and potential clients are made aware of Sierra's deep-seated commitment to information technology consulting.

Sierra employees are continually reminded of the importance of focusing on the needs of the client. The credo "the client is always right" applies to Sierra's business as well as to any service organization. Client satisfaction surveys are sent to each client after a project has been completed. The results of these surveys are published within Sierra; the high success rate of these surveys demonstrates Sierra's effectiveness of satisfying it's clients' needs.

Within Sierra, there is an "open door" policy: every employee is welcome to speak to any of the partners or principals. An employee may be working directly for a particular principal, but he/she has the right to speak with any other manager for the purposes of discussing upcoming projects or future career prospects. The open door policy contributes to an overall atmosphere of collaboration and openness.

Business and technical knowledge is diffused throughout the organization in several different ways. Several informal procedures are generally used by Sierra consultants in order to share business and technical knowledge on an as-required basis for upcoming projects. These informal procedures are presented within an orientation course given to new Sierra employees.

Each branch office distributes an internal newsletter each month. This newsletter, known as the "Branch Link", highlights new projects, potential project opportunities, current industry information, upcoming technical and business forums, as well as new staff announcements. A monthly "Corporate Link" is distributed throughout the entire organization, and summarizes highlights from each of the branch offices. Contributions to the newsletters are welcomed from every employee.

Each business unit sponsors a monthly beer and pizza meeting. The purpose of these meetings is to allow the consultants within each business unit to share business and technical knowledge within a relaxed environment. A month-end meeting is held for each branch office, and is yet another opportunity for all branch employees (from all business units) to meet and informally discuss upcoming projects, marketing contacts, and other related business.

Newsletters and monthly meetings provide the general basis for knowledge transfer, but a more specialized method is required for a consultant

starting a new project who needs to learn more about a particular knowledge area.

First, the consultant can solicit information by broadcasting a message via the electronic mail or voice mail system. The recipients of the message may encompass Sierra's entire organization, or they may be limited to a particular set of branch offices, or a targeted group (e.g., database administration experts). Usually, the response from this type of message assists the consultant in identifying a select group of Sierra consultants, or knowledge experts. These knowledge experts will have varying levels of expertise in the specific knowledge area. The collaborative atmosphere of the organization tends to facilitate quick and comprehensive responses to appeals for expert help.

Next, the consultant can communicate with one or more of the knowledge experts in order to learn more about the knowledge area. This knowledge transfer can occur via phone calls, voice mail, electronic mail messages, or in-person meetings.

This method of knowledge transfer is quite informal, yet it fits well with Sierra's consulting business. The nature of the IT consulting business is such that there is usually a very limited amount of time between when a contract with a client is signed, and when work is scheduled to start on the consulting project. Depending on consultant availability, it may not be possible to assign Sierra's top expert in a knowledge area to a particular consulting project. Consultants are assigned to projects by attempting to match the required project skills against the skills of currently available consultants. In some cases, a project may be staffed with consultants who have general skills that relate to the project, but do not have an expert level of knowledge. For example, a consultant with general design and analysis skills may be assigned to a design project for a log inventory system. Although the consultant has never designed a log inventory

system, his/her general analysis and design background satisfies the basic requirement for completing the project. Once the consultant has identified a "log inventory design expert" within Sierra, he/she can work with this individual before (and possible during the project, after working hours) to further his/her knowledge in this area in as short a timeframe as possible.

5.2 Service Offerings

Sierra provides an extensive range of services:

- Systems Integration and Delivery,
- Consulting Services,
- Implementation Management, and
- Technology Management.

5.2.1 Systems Integration and Delivery

Systems Integration and Delivery services encompass both the development and installation of custom systems and the implementation of software packages. Throughout the 1970's and part of the 1980's, most computer systems were custom developed: a development team would design, develop, test, and install the system. More recently, however, the installation of packaged software systems has become common. Software packages exist now for most major applications, precluding most of the need for systems development from scratch. Although software packages typically offer most of the business functions and application features sought by companies, it is still necessary to implement the package as a formal systems development project. Some custom design and development is usually required; issues such as data conversion and interfaces to other systems must still be resolved even with a package system. An example of a software package is PeopleSoft's Human

Resources (HR) system, used for maintaining employee information such as job history, career planning, skills and training information.

A significant strength that Sierra holds over its competitors is the methodology employed to successfully complete systems development projects. Sierra has developed a set of guidelines for developing systems; these guidelines have evolved along with the shift from custom developed to package systems. The systems development guidelines encompass all phases of a systems development project, from business design through to implementation. An in-house orientation course, held twice yearly, is used to train new employees in the correct use of these guidelines. Included in the guidelines is a rich set of tools and techniques (e.g., data flow diagrams, process flow diagrams, system testing checklists), and the prescribed deliverables (written documentation) to be produced for the client. Every project is different, and those steps which apply to one project may not be applicable to another project. By considering every step, however, the manager responsible for the Sierra project ensures that nothing is overlooked.

This systematic and thorough approach to systems development projects minimizes systems risk: following these guidelines minimizes the chance that the system will fail due to the omission of important steps in the systems development process. Sierra's competitors who provide systems solutions without the benefit of a proven methodology are at a distinct disadvantage: to the client, a solid methodology speaks volumes of the experience of the company that developed it and successfully deploys it.

Another significant corporate strength is Sierra's use of project management on every client project. When Sierra consultants perform billable work for a client, they work on what is referred to as a project. Every Sierra project requires a project manager, team members, and proper project

management techniques. Sierra has defined guidelines for project management as well: these guidelines provide the basis for an internal project management course. Similar to the systems development guidelines, the project management guidelines include tools and techniques (e.g., sample project plans, project task estimating standards, risk assessment strategies, and software application tools such as Microsoft Project), and standard deliverables to be produced (periodic status reports, budget reports, employee timesheets). The purpose of this structured environment is to ensure that the ultimate project goal is met in a controlled, business-like manner: to solve the client's business problems.

As well as following project management guidelines, each project must be audited by a Sierra consultant who is not a project team member (typically, a partner or principal). The purpose of a project audit is to ensure that the project is being managed properly and meets or exceeds corporate quality measures. The overall quality of a project is based on the perceived quality of the deliverables produced, and on the results of interviews held with client representatives. Deliverables are reviewed to ensure that they are readable, accurately portray the business problem, produce a solution that is appropriate to the problem, and focus on the client's key success factors. The client representatives are interviewed by the Sierra auditor, and are asked to provide feedback on the effectiveness of the management techniques employed by the project manager. Sierra's focus on project management training, the careful adherence to project management guidelines, and the auditing of project management techniques all contribute to Sierra's strength as a capable provider of project management.

5.2.2 Consulting Services

Sierra's consulting services include strategic planning, organization reviews, feasibility studies, and software package evaluation and selection. The output of a typical consulting service project is a series of recommendations for the implementation of a new computer system. These recommendations may be at a high level (such as a document that outlines the scope of the proposed system), or at a more detailed level (for example, a project plan that details the implementation steps necessary to install the proposed system). Other consulting service projects may not be as tightly focused on a single computer system: a strategic plan may be developed which covers all of the client's major business processes, thereby affecting the client's entire organization.

When conducting a consulting services project, Sierra staffs the project with those employees who have specific skills geared to the client's industry, and the type of consulting service being undertaken. Instead of providing a veritable stable of management consultants with relatively homogeneous skills, Sierra cultivates employees with skills specific to certain projects. For example, a consulting project for a gas utility company undergoing organizational change would be staffed with senior Sierra consultants possessing the following attributes:

- experts in change management techniques (used to assist employees and the company to deal with organizational change), and
- over 10 years experience with the main business processes and systems applications used by gas utility companies.

Sierra's consulting services have recently expanded in scope to be referred to as management consulting services. Management consulting can be simply defined as "helping managers to perform their jobs better". The output of a management consulting project may include an information technology recommendation, but not necessarily so. Some of the different types of solutions recommended during a management consulting project include policy and procedural changes (requiring extensive policy analysis, and documentation of new policy and procedures), organizational changes (i.e., new roles and responsibilities for existing employees, new organizational structures, changes to shifts and operating hours), and legislative changes. Since Sierra's expertise historically lies in the systems development area, the positive fallout of many management consulting projects is the initiation of one or more systems development or software package implementation projects.

The majority of consulting firms are categorized as either information technology, or management consultant firms. Some of the larger consultancies, however, serve both industry segments (e.g., , Andersen, Deloitte and Touche). The core business of these larger consultancies, however, was founded on accounting and management consulting; it was not until later that they diversified into information technology consulting. Sierra is somewhat unique in that it started first as an information technology provider, diversifying later into management consulting.

Since these two segments are so closely integrated, Sierra has chosen to target both segments. Working in both segments gives Sierra a competitive edge: while working on information technology projects, Sierra employees seek out potential management consulting projects with the same client. The reverse situation (keeping abreast of IT opportunities while conducting a management

consulting project) is exploited as well, thus giving Sierra a two-pronged lead over its competitors.

5.2.3 Implementation Management

Implementation support and system integration services are intended to meet the needs of end users: there is a growing need to provide total solutions to clients. An implemented system may be recognized as a technical success (i.e. the technical components installed are successfully integrated, with the integrated system meeting the specific performance requirements), but it may be considered a failure by the end users of the system themselves. A totally successful implementation requires the total involvement of the end users.

End users are provided with proper training and documentation in order to ensure that they understand how to use the new system. Any perceived difficulties in the use of the new system must be addressed during the implementation stage. For example, an end user may notice a redundant step in the data entry of specific information. The data entry screen will then need to be modified to remove the redundancy. The discovery of such a redundancy may be easily overlooked by a developer, who does not necessarily have a good understanding of how an end user completes his/her daily work.

As with systems development and project management, Sierra has developed its own methodology for completing implementation projects. These guidelines are a consolidation of the implementation expertise of partners, principals, project managers, and project team members within Sierra. This methodology sets Sierra apart from its competitors, because it provides the client with the assurance that the system works and will be used by the target employees in their day to day work.

An installed system that the client employees are afraid to use is an utter failure. Without gaining the acceptance of the users, the system cannot succeed. Within many organizations, employees are extremely resistant to change. A new computer system will almost always involve a significant amount of change, since it requires that employees change the way they perform their daily work. Even though a new system may improve the efficiency of an organization's employees, the usual resistance employees feel towards change makes the implementation stage of the project the most important stage of all. It is the responsibility of the implementation team to ensure that the end-users learn how to use the system, voice their concerns regarding potential problems, and suggest improvements.

Sierra's total solution approach to implementation projects is a strong corporate asset: instead of leaving the project when the system is installed, Sierra consultants continue to the next phase of the project -- the post-implementation review. This review covers activities such as working with the users for an extended period (one week to several months) to ensure that they fully understand how to use the system; monitoring the technical performance of the system and making the necessary adjustments; and making any customizations required to make the system work better for the client.

5.2.4 Technology Management

The installation and ongoing support of technology requires both technical and management knowledge. Sierra provides management and technical expertise for a wide range of different technologies. There has been a major shift in the use of hardware: huge mainframe computers have given way to powerful personal computers, in many companies. The introduction of local area

networks[50]and wide area networks[51]has changed the way companies transfer information between departments and branch offices. Sierra has kept abreast of new technologies as they have been introduced, and continues to ensure that these technologies are installed and supported appropriately for their clients.

A partner within Sierra is responsible for tracking new technologies: David Wills is referred to as the Director of Emerging Technologies. Mr. Wills' mandate is to analyze the appropriateness of new technologies for Sierra's clients, and to select target technologies and tools for incorporation into the corporate skill set. Visual Basic, a graphical user interface (GUI) development tool, is one such target tool. A set of Sierra employees was selected for extensive training in this new development tool. True to the Director's prediction, Visual Basic has become one of the predominant development tools in systems development projects. By closely watching the technical environment, and ensuring that its employees are trained in the skills of the present and future, Sierra ensures that its clients receive technical expertise that is appropriate to the problem at hand.

Sierra has installed a wide area network for all of its branch offices. The knowledge base of the company extends to each of its branches, but in the past, it was difficult to share information between branches. The advent of wide area networks has allowed for rapid dissemination of corporate knowledge: no longer does a branch office have to rely only on the experience of its own employees to solve a client's problem. Although a project is managed from a single branch office, team members may be pulled from several branch locations. The

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[50]A network of computers usually located within a single building.

[51]A network of local area networks or personal computers, spanning several locations.

completed project thus draws on the expertise of the entire company, and is not limited to the consultants that happen to work at the branch initiating the project.

5.3 Customers

5.3.1 Current Industries Served

Sierra has clients in the following industry sectors:

- Distribution
- Manufacturing
- Utilities
- Telecommunications
- Oil and Gas
- Education
- Lumber
- Pulp and Paper
- Health Care
- Provincial & Federal Government
- Municipalities
- Airlines

Traditionally, companies providing professional services have focused on the automation of their clients' "back office" functions, such as payroll and accounting processing, and health-care and insurance claim processing. Now, however, most companies have their back office functions in place, and are instead focusing on the automation of their "front office" functions. These front office functions are the systems which attract business by automating tasks such as customer service, fund transfers, materials requirements planning, and inventory requisition. The use of automation in front office functions has been primarily instigated by increased competition throughout most industries, coupled with the improved price/performance of hardware and software[52].

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[52] Standard & Poors, *Standard & Poors Industry Surveys,* (November 24, 1994), p. C104.

In the past few decades, most companies in virtually all of the sectors served by Sierra have experienced major reorganizational change, due to external factors such as deregulation, environmental issues, funding cutbacks, and changing political agendas. To cope with such monumental change, many firms have used methods such as business process reengineering as a means of redefining their organizations. Companies have attempted to transform the way they do business by defining their core competencies, and determining which businesses will be maintained and which will be shed. Consultancies that offer reengineering expertise, such as Sierra, are in high demand by companies faced with significant change. As was mentioned previously in this chapter, many of Sierra's reengineering projects result in follow-on IT work, such as systems development projects.

While Sierra will continue to market to clients in all of the above sectors, as well as other sectors as opportunities arise, there are four industry targets which Sierra will focus on during the next 5 to 10 years:

- Forestry
- Justice System
- Health Care
- Utilities

5.3.2 Industry Targets

Forestry

Sierra has been involved in applying IT to the forestry industry in B.C. and the Pacific Northwest since 1970. Sierra has undertaken major systems development assignments for clients from all industry sectors including solid wood, pulp and paper as well as manufacturing. Projects have included the development of Information Systems Plans as well as hardware and software selections. Some of Sierra's clients include Fletcher Challenge, Canadian

Forest Products, MacMillan Bloedel, Scott Paper, Weyerhaeuser and Westar. The systems typically developed for forestry clients include:

- order entry and tracking, billings and accounts receivable systems for lumber and plywood;
- inventory control, order processing and invoicing systems for newsprint sales;
- mill inventory, warehouse sales and distribution systems for finished lumber and plywood;
- production control systems including production scheduling, bill of materials, production reporting and analysis, inventory, invoicing and sales reporting for corrugated and converted products;
- log scaling, log inventory and database information systems;
- log production and log productivity;
- contractor payments, stumpage and royalty management;
- forest management using geographic information system (GIS) packages.

In the forestry industry, most systems development is performed in-house: relatively little IT work is outsourced to external consultants. Over the last 20 years, Sierra was awarded the largest share of external business generated by forestry companies within B.C.[53]

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[53] "Sierra's Experience in the Forestry Industry", *Internal marketing material* (July, 1995).

Justice System

Sierra has been engaged in a wide variety of information technology assignments in the criminal and civil justice system. Projects have included providing management support and consulting assistance, package implementation, feasibility studies, as well as all aspects of systems development. Within B.C., Sierra has completed numerous projects for the Ministry of Attorney General:

- Prepared cost/benefit data to support a business case for an Integrated Case Processing System, a system intended to allow sharing of case information among the various independent parties within the justice system.
- Developed a Systems and Technology plan for the Robson Square Automated Courthouse. Major components of this plan included the evaluation of software package and hardware alternatives, and the identification of pilot projects involving technologies such as bar coding, touch screen and voice response.
- Assisted the Ministry in developing a plan and strategy for combining the Small Claims Court with the Family and Youth Court. Facilitated workshops with a cross-section of court staff were used to re-define job functions, information flow and procedures, as well as to develop the physical layout of the new registry.

Within the United States, Sierra has created a name for itself as an experienced provider of IT expertise to the Los Angeles County judicial system. L.A. County operates the largest criminal justice system in the United States. The system involves many organizations as interrelated roles including more than 40 police departments, several prosecuting agencies, the Probation

Department, Municipal and Superior Courts, County jails and state and federal agencies. Each year, more than 500,000 misdemeanor and felony arrests are made in Los Angeles County, the majority of which are prosecuted. The criminal justice system and the supporting information systems have a case-oriented focus, e.g., arrest, court cases, jail bookings, probation cases, etc. Frequently, access to an individual's complete criminal history is required for setting bail, determining charges, prisoner releases or making sentencing decisions. The current information systems do not readily support this required, consolidated view of an individual's criminal history.

Sierra was retained to conduct a preliminary study of this situation. The Sierra consultants identified the fundamental need for better, faster and more consistent identification of individuals in all systems and promoted fingerprint identification technology as a practical solution. The consultants then described a strategy to retrieve and display consolidated information to key criminal justice users including judges and prosecuting agencies. Other projects completed for the County of Los Angeles include:

- Performed a feasibility study for a new case tracking information system to support the Marshal of Municipal Court's (Marshal's) serving of civil process.
- Developed the Marshal's first strategic business plan and long range information systems plan. These plans were intended to improve the efficiency of the Marshal's organization, in light of the recent decline of L.A.'s economic climate.
- Assisted in the implementation of a Countywide digital fingerprint capture system, a system which eliminates the need for rolled ink fingerprints. The high quality fingerprint images produced can be more easily and accurately

communicated from the capturing location to the County's central fingerprint classification location.

Health Care

The health care industry has experienced the same changes in information technology that have occurred throughout most industries. The shift from centralized mainframe to client/server systems, and the integration of networks, gateways, servers, and client workstations has been keenly felt by the health care industry. Traditional systems -- General Ledger, Human Resources, Admission/Discharge -- formerly the focal point of a health institution's information systems strategy, have moved to the background to make way for systems which directly support end-user needs. These systems support the view that health care has shifted from a "wholesale" to a "retail" business, in which the consumer/member/patient is the new primary customer[54].

Clinical systems form the backbone of a health institution's operating activities. Nursing, Operating Room, and Pharmaceutical systems are being developed to better meet the needs of the end-user: namely, the patient. Nurses spend most of their working hours documenting their daily tasks. Nursing Systems are being designed to increase the productivity of nurses by reducing the effort required to document daily tasks.

Many hospitals continue to keep paper copies of documentation. One objective shared by most health institutions is to eventually store all patient data in electronic format. By retaining patient records electronically, the accuracy and completeness of the data and the timeliness in retrieving the data will be

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[54] IBM Corporation, "Healthcare customer service continuum", *White Papers: Healthcare Solutions* (IBM Corporation, Internet World Wide Web Home Page (www.ibm.com), 1995).

greatly improved. Reducing errors and retrieval times will help to increase the productivity of hospital staff at all levels.

Sierra has completed IT projects for various health care institutions, including hospitals, health centres, and extended care facilities. Some of the patient care systems implemented include:

- Admission/Discharge/Transfer (ADT)
- Radiology
- Electrodiagnostics
- Outpatient Scheduling
- Pharmacy
- Dietary
- Laboratory - Surgical Pathology, Chemistry, Haematology, Microbiology
- Rehabilitation Information System
- Nephrology (Renal Dialysis)
- Medicus (Nursing Workload Management)
- Case Mix
- O.R. (Operating Room) Booking
- Surgical Preference

Utilities

Many utilities have already experienced widespread deregulation (e.g., telecommunications), while other utilities have only experienced partial deregulation (e.g., natural gas). Full deregulation will likely be the future status of all utility companies. The open markets that have arisen as a direct result of deregulation will drive up the level of competition. Most utilities that directly

serve customers, whether residential or commercial, have already discovered that customer satisfaction is key to an organization's competitive success. Customer Information Systems (CIS's) are being redesigned to focus on market information and the needs of the customer. Historically, CIS's were built as an add-on feature to a customer billing system. Now, however, utilities are recognizing the importance of building a system that directly supports and enhances customer service. Since deregulation first occurred, customer expectations have risen: they will likely continue to rise well into the 21st century.

Deregulation also forces companies to cut costs and operate more efficiently. Solutions are being sought by utilities for improving the effectiveness and efficiency of operational functions, such as the management of natural gas throughout a complex network of pipelines. Reengineering is frequently used to facilitate the generation of such solutions, some of which may be information technology solutions.

Sierra has completed IT projects for over a dozen utilities in B.C. and Alberta. Some of Sierra's clients include BC TEL, BC Hydro, Westcoast Energy Inc., Union Gas and Edmonton Telephones. One of Sierra's longest term clients is BC TEL: since 1969, Sierra has provided consulting, design, development, implementation and project management services to the B.C. telephone company. Typical projects completed for BC TEL include:

- Planned the changes required to support the new GST tax within the customer billing system.
- Provided design, development, implementation planning and testing assistance on a project team to develop the nationwide consolidated billing

system for Stentor, an alliance of Canadian telephone utilities, of which BC TEL is a member.

- Performed analysis to define the systems impacts of various new service offerings, including Virtual Corporate Network, ISDN, 800 Plus, Virtual Data Network, Advantage Discount Plans, Card Enhancements and Telemanagement Reporting.

5.3.3 A Representative Project

Westcoast Energy Inc. is a major natural gas transporter and distributor responsible for bringing gas from northern British Columbia to markets in B.C., eastern Canada and the U.S. Westcoast is one of Sierra's largest clients within it's utilities industry focus.

As part of a large project team involving Westcoast staff, IBM and Oracle, Sierra participated in the design, development and implementation of Westcoast's Gas Management System (GMS). The GMS supports gas ordering, invoicing, service agreements, allocation, production source availability, energy accounting and gas measurement. It is fully integrated with Westcoast's office systems including electronic mail, electronic fax, document scanning and word processing. Electronic Data exchange with Westcoast's customers is also a component of the system. Sierra provided project management, systems integration, implementation services and software development expertise to the GMS project.

Sierra's initial involvement was to facilitate JAD workshops to define the system requirements. During the System Design phase, these requirements were used to development the Gas Management business model using Oracle CASE technology.

The GMS was developed using Gupta's SQL Windows development tool and the C programming language. The database was implemented using Oracle database management software on an IBM RS/6000. The system front-end was developed to run on IBM PS/2 workstations networked via Microsoft LAN Manager. An OS/2 LAN Server is used to support the office applications and remote access to the business application.

Sierra is currently involved with the development of an interface between the Westcoast GMS and the Electronic Information System bulletin board being jointly developed by Westcoast, Nova and TransCanada Pipe Lines Ltd.

5.4 Competitors

Sierra was ranked as the 16th largest professional services firm in Canada based on 1994 revenues[55]. Sierra practically doubled its revenues between 1990 ($15.7M Cdn) and 1994 ($ 26.2M Cdn), yet its standing dropped from ninth[56] to 16th place in the space of only four years.

The leading players in the Canadian professional services industry include well-established multinationals (e.g., SHL Systemhouse Inc., DMR Group Inc., Andersen Consulting) as well as two relative newcomers that were spin-offs of larger companies (e.g., IBM and BC Tel merged its systems integration businesses into ISM Information Systems Management Corp., and Bell SYGMA Inc. was formerly the corporate systems arm of Bell Canada). All but four of the firms leading Sierra in the Canadian professional services

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[55] "The Branham 50 Top Canadian IT Professional Services Companies", *The Financial Post Magazine* (March, 1995), p. B24.

[56] *Trends and Forecasts for the Information Technology Industry 1990-1994*, (Evans Research Corporation, 1990).

industry employ more than twice as many staff members, and the revenues of the top 10 companies account for almost 85% of the total revenues generated by the top 50 companies in Canada. One of the companies that has managed to jump ahead of Sierra is OCS Technologies, a software and services provider specializing in justice information systems. OCS Technologies achieved most of its phenomenal growth due to its acquisition of four companies in 1992 and two companies in 1993.

Sierra's competitors can be analyzed from three viewpoints: by country, by branch office, and by industry.

Within Canada, Sierra competes with large multinationals as well as small- to large-sized consultancies. Some of Sierra's stiffest Canadian competition comes from Minerva Consulting, a similar sized consultancy based in Calgary, Alberta. Within the United States, Sierra tends to compete against similar sized consultancies that are based in the U.S. Although Sierra actively competes with the consulting division of IBM in Canada, Sierra does not compete with IBM in the United States.

Unlike the relatively strong position it holds in the professional services industry in Canada, Sierra does not rate within the top 50 IT professional services firms in the United States. Sierra's first American branch office was opened just 15 years ago; it will likely take several years before Sierra becomes established in the United States as it has managed to do in Canada. Experience in the Canadian IT industry does not translate into American IT industry experience, at least from the perspective of potential U.S. clients.

Each of Sierra's branch offices competes both with local consultancies (typically similar sized or smaller than Sierra) as well as with the large multinationals.

The nature and size of Sierra's competitors on any given prospect depends primarily on the industry of the prospective client. The large multinationals such as IBM and SHL Systemhouse Inc. have both the resources and the breadth of business experience to compete with Sierra in all of its current and target industries. Some of the small- and medium-sized consultancies tend to focus on a single industry, and are able to compete with Sierra based on depth and focus of business experience within that particular industry. OCS Technologies Corp. is Canada's leading provider of justice information systems and associated professional services and is approximately the same size (both in terms of revenue and employees) as Sierra.

The following table summarizes the nature of the competition for selected industries:

Table 5.2 - Nature of Competition by Industry

Industry	Size Small (< 50 employees) Medium (50 - 500 employees) Large (500+ employees)	Specific Advantage of Competition
Provincial Gov't (Canada)	Small	Ability to undercut Sierra's chargeout rates
Health Care	Small, Medium	In-house developed software for the Health Care industry
Justice System	Small, Medium	In-house developed software for the Justice System industry
Oil & Gas	Medium, Large	Oil & Gas experience
Utilities	Medium, Large	Utilities experience

5.5 Specialized Assets

The next chapter describes a joint venture opportunity for Sierra in the Malaysian IT market. In order to assess the viability of this opportunity, it is

necessary to identify Sierra's specialized assets: namely, its sources of competitive advantage. Sierra's key assets can be categorized as follows:

- leading edge technical expertise
- diverse business experience
- comprehensive project guidelines
- stable corporate position
- strong competitive position

5.5.1 Leading Edge Technical Expertise

Every Sierra consultant has a strong technical background in the subject of information technology. Technical degrees and certificates in Computer Science are held by virtually every employee, and the average length of experience in the IT industry is 10 years.

Several special interest groups (SIGs) have been formed within the company for the purposes of building and sharing knowledge on high profile information technology topics. SIG meetings are held after regular working hours, indicating a commitment on the part of employees to keep abreast of new technologies. Electronic mail groups[57] have been established to facilitate further information sharing within SIGs. Current SIG groups include client/server, object oriented programming, and workgroup computing. SIGs provide the opportunity to share technical knowledge between business units and branch offices.

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[57] An electronic mail group is a list of user identifications (userids) in an electronic mail environment. This list is established to group users (e.g., Sierra consultants) with a common interest (e.g., object-oriented programming) so that messages pertaining to the common interest can be broadcasted to the entire group.

Another means of learning and successfully deploying leading edge technology is to perform intensive research and development. Sierra performs its own brand of R&D by obtaining advance copies of leading edge hardware and software, and developing in-house systems using the products. Consultants currently "on the bench" are responsible for designing, developing, and testing these products in advance of implementing the products for a client. Experiences, problems and opportunities encountered with a new product are documented and distributed throughout the branch offices, and are used to provide a solid experience base for future client projects involving this new product.

5.5.2 Diverse Business Expertise

Sierra's clients come from virtually every industry, including health care, education and government. The diversity of industries that Sierra serves enables it to diversify its risk. By keeping involved in several industries, Sierra does not become dependent on a single industry for sustenance. For example, a change in the provincial political party would likely affect the Victoria branch until the government's mandate stabilized somewhat, but the effect on Sierra as a whole would be minimal. Sierra's resources from the Victoria could be used in the interim period to assist on other corporate projects.

Sierra has selected four industries upon which to focus on in the future: health care, justice, utilities, and forestry. Although these industries will form the core of Sierra's business, Sierra will continue to do business with clients in other industries as well, thus preserving the diversity of its client base.

5.5.3 Comprehensive Project Guidelines

The use of template guidelines on every Sierra project ensures that the final service provided to the client is of an extremely high quality. Guidelines are used for both systems development and systems implementation projects. These guidelines are flexible enough to use on every project, regardless of the business area or technology. Proper training and regularly performed audits ensure that the template guidelines are used correctly by Sierra employees.

The project management guidelines provide the backbone for a Sierra project by establishing an organized plan for completing the project. Each project is broken down into tasks, resources, and schedule: the project management guidelines provide the means to fit these components into a plan that fits the environment and timetable of the client. The guidelines are implemented by a Sierra manager experienced with project management techniques, specifically those taught within the company.

Each of the different types of template guidelines can be used for any project undertaken by Sierra, regardless of the business or technical focus of the project. In addition, the template guidelines can be implemented for any project completed by any of the branch offices, since the guidelines are essentially a corporate-wide skill, and as such can be implemented at low cost to Sierra.

5.5.4 Stable Corporate Position

Sierra's financial portfolio has been managed conservatively over the past 29 years. The culture of the company is that of a stable and somewhat risk-averse firm. Sierra has offered company shares for private purchase in two separate offerings: once in 1990 and again in 1995. The objectives of the employee share purchase plan are to increase employee motivation, cultivate a

sense of long-term commitment to the company, and to provide new sources of equity capital for the company.

The organizational structure within Sierra is fairly flat, with only two levels of management. Due to this flat structure, the level of bureaucracy within the organization is modest. The "open door" policy further reinforces the atmosphere of open communication and trust between employees and management.

5.5.5 Strong Competitive Position

Sierra is the second largest IT consultancy in Vancouver, B.C., second only to Westech Information Systems Inc. Well established throughout B.C., Sierra has expanded across Canada to become recognized as one of the top 20 providers of IT consulting expertise. Although the performance of the U.S. branch offices has not reached the levels of their Canadian counterparts, revenues have indicated both recent and dramatic improvements. It remains a matter of time before Sierra manages to secure a strong competitive position throughout the western United States.

Chapter 6
Case Study: A Joint Venture Opportunity in Malaysia

6.1 Introduction

The economic theory presented in this paper is intended to provide a broad overview of the theory of foreign direct investment and the multinational enterprise (MNE). The theory seeks to answer the following questions: why does foreign direct investment occur? Why do particular firms succeed at foreign direct investment? The various modes of foreign direct investment (greenfield, acquisition, joint venture) explain how MNE's are formed and managed on an ongoing basis. Both the economic theory and the MNE management theory suggest that a company considering investment in a foreign market must have specialized assets that set it ahead of its foreign competitors. A firm will be motivated to deploy its specialized assets only if the following conditions are satisfied:

1. the rate of return in the foreign market exceeds the firm's domestic rate of return by a sizable margin, and
2. the firm's relative disadvantages to its competitors in the foreign market are outweighed by its advantages.

The case study presented in this chapter sets out the characteristics of one firm that are perceived as specialized assets within a particular industry. The firm in question is an information technology consulting firm currently operating in Canada and the United States: Sierra Systems Consultants Inc. (Sierra). Sierra is considering expanding beyond its domestic market into a new

destination market, Malaysia. By forming a joint venture with a Malaysian firm, Sierra seeks to obtain a sizable rate of return by deploying its specialized assets.

6.2 Expansion Plans

Economic theory and MNE management theory suggest that in order for a company to consider making a significant investment in a foreign market, the opportunities in the foreign market must outweigh the opportunities in the company's domestic market. Typically, a firm will consider expansion into a foreign market when it's domestic source of business reaches the saturation point: in order for the firm to grow, it must explore foreign markets.

Sierra is currently expanding domestically. In July, 1995 two additional offices were opened: Prince George and Ottawa. Sierra has been completing projects for clients in the Northern B.C. region for over 15 years. The majority of these clients are in the Government and Gas Utility sectors. The excessive travel costs required for servicing such a remote location resulted in the opening of a new branch office in Prince George. The Ottawa office was opened as the result of the acquisition of a small consulting firm. This small consultancy formerly operated two branches: one in Ottawa, and one in Washington, D.C. By late autumn of 1995, Sierra will take over operation of the Washington branch, thus opening its fourth American office. The initial focus of the Washington branch is the U.S. Federal Department of Education, the World Bank and the "Association" marketplace (there are over 2,000 associations headquartered in Washington).

Sierra's geographic expansion has been limited thus far to North America, with the exception of isolated projects completed in other countries in the Philippines and Bermuda. The Philippines project was successful, but the work

completed was not indicative of Sierra's normal course of business: the project required only senior consultants, and did not result in significant follow-up work requiring the expertise of other junior staff. Several of Sierra's partners are still very much interested in expanding internationally. Investment in an overseas country, however, would differ substantially from opening another branch office in the U.S. or Canada. Due to the relative closeness in proximity of Sierra's current offices, it is not uncommon to staff a project led by the Dallas office with consultants from Vancouver or Calgary. It would not be feasible, however, to "share" consultants from Canada or the U.S. with projects conducted overseas for an extended period. Other major differences between North America and other countries, such as cultural, political and business environments, would have to be carefully considered before committing to an overseas investment.

Sierra is considering forming a joint venture operation with a Malaysian firm, as a means of gaining a foothold into the burgeoning South East Asian (ASEAN) market.

6.3 A Joint Venture Opportunity in Malaysia

6.3.1 Background

Ian Reid happened on a S.E. Asian contact one lunch hour when he met with a long-time business associate, Geoffrey Lau. The two men have maintained a close business relationship since the early 1970's. While on a business lunch with Mr. Lau, Mr. Reid mentioned that one of the Sierra partners had a contact in Malaysia, and that Sierra was considering expanding into this area. Mr. Lau informed Mr. Reid that his family had worked in Malaysia for many years. After some discussion, Mr. Lau offered to forward a letter to his brother-in-law, giving details of Sierra's background and their interest in expanding into

Malaysia. Mr. Lau provided insightful information about the country -- it was obvious that he had significant knowledge of the IT industry both in Canada and Malaysia. This conversation triggered the first of many trips to S.E. Asia; Mr. Reid was joined by Simon Mok, a Sierra principal, on each of these flights. Mr. Mok's strong technical background, extensive experience in the utilities and Oil and Gas industries, and his keen interest in the country of Malaysia made him an obvious choice for the role of senior consultant in a new international venture.

After an initial flight to Malaysia, Mr. Reid consulted Enterprise Malaysia Canada (EMC). The EMC is committed to helping Malaysian and Canadian business enterprises work together in joint venture relationships. Richard Meiklejohn, Mr. Reid's contact at EMC, provided extensive information on the general business environment in Malaysia, and a list of potential companies that were interested in partnering. Mr. Reid prepared a brief project proposal at EMC's request: the proposal outlined Sierra's business, why they were seeking a Malaysian business partner, and what features in a partner they were looking for. EMC then set up initial meetings with Malaysian companies in Kuala Lumpur.

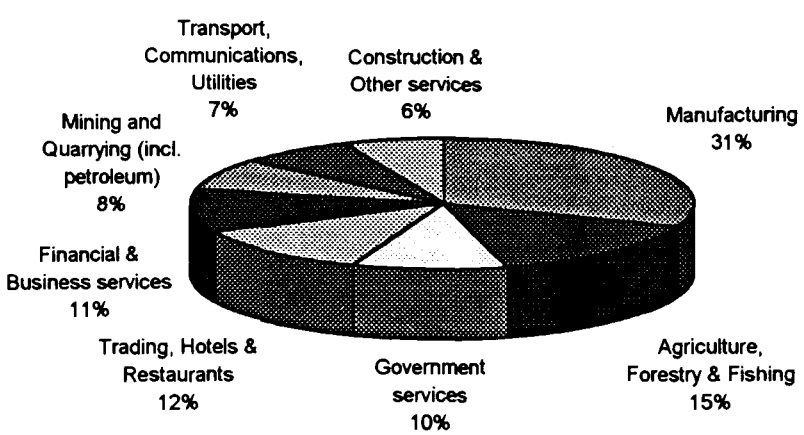
6.3.2 The IT Industry in Malaysia

Malaysia is situated in Southeast Asia, and is a federation of 13 states. The country is comprised of Peninsular Malaysia, and the states of Sahab and Sarawak on the island of Borneo. Historically, agriculture and natural resources -- rubber, tin, lumber, petroleum, and pepper -- formed the basis of Malaysia's economy; without these valuable resources, Malaysia would most likely have been branded a third world nation. Since reaching independence from Britain in 1957, the Malaysian government has striven to diversify the primarily resource-based economy.

Third only to China and Macau, Malaysia's economy is among the fastest growing in Asia. As of the mid-1990's, real estate prices in Malaysia were at a record high, the rate of construction had risen dramatically, and unemployment had dropped to approximately 4%. Previously a major source of cheap labour, Malaysia has now started to imported unskilled labour from neighbouring countries. Malaysia's primary industry goal is to attract technology-based, capital-intensive industries.

Currently, the major focus of the Malaysian economy is on the manufacturing sector:

Graph 6.1 - Main Components of Malaysia's GDP (1993)[58]:



Electrical and electronic machinery and appliances are the primary type of goods manufactured in Malaysia and exported to foreign countries. Agriculture, formerly the leading industry segment, has become second in place

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[58] Price Waterhouse, *Information Guide: Doing Business in Malaysia 1994* (Price Waterhouse, 1994).

only to the manufacturing sector. The mineral and energy resources sector, which contributes 8% to the total GDP, consists of the extraction and processing of petroleum, natural gas and tin.

Foreign investment in the downstream processing and manufacture of end products from the manufacturing, agriculture, and mineral resources sector is being encouraged by the Malaysian government. In addition, a strong emphasis is being placed on high-technology skills-oriented industries.

Vision 2020 is the government's plan to make Malaysia a fully industrialized nation by the year 2020. An obvious contributor to this goal is the projected success of the IT industry in Malaysia. The growth of the IT industry within Malaysia from the late 1980's into the 1990's has been extremely healthy. IT consultancies in 1991 recorded a total revenue of $33M Canadian in 1991[59]. For the future, investment in information technology is expected to increase in the Government, financial services, energy resources, and retail industries. Sierra is well-positioned to provide consulting services to clients in all of these industries, particularly the oil companies, gas utilities, and manufacturing companies. These three sectors are industries in which Sierra has exceptional business knowledge. The gas utilities industry, in particular, is one of four key industries in which Sierra has chosen to focus on for the future.

Revenues in the IT consulting sector have grown at an even faster rate than the overall IT sector: the projected rate for 1992 was 23 percent[60]. Typical services offered by IT consultants in Malaysia include the following:

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[59]Canadian High Commission, "Market Study on Computer Products and Services in Malaysia" (March 1993).

[60]Ibid.

- strategic IS plans,
- feasibility studies,
- systems evaluation and selection,
- systems analysis, design, development and implementation,
- systems maintenance and review,
- disaster recovery planning (DRP), and
- project management.

Sierra provides the above services domestically; its expertise in providing these services would enable it to satisfy the Malaysian clientele. It should be noted, however, that the IT industry in Malaysia has not yet evolved to the same level as that of the North American industry. The database environments and development tools in use as well as the applications being implemented within Malaysia are still years behind those in North America. Because of this disparity in IT expertise, it is likely that Sierra would be well-positioned against local Malaysian competitors as IT providers. The most significant competition would come from the multinational IT providers, such as Andersen Consulting.

As of 1992, there were approximately 50 consulting companies operating in Malaysia, with a handful of accounting based consultancies (firms formerly known as "the big six") dominating the scene, e.g., Coopers & Lybrand, Ernst & Young, etc. Many of the existing software companies also offering consulting services, and as such are in direct competition with the more established accounting based consultancies.

The main types of application software which are predicted to be in high demand within Malaysia are office productivity packages, and banking, financial, retail, and manufacturing applications. Canadian companies already involved in

the IT market in Malaysia have provided expertise in the areas of geographical information systems (GIS), image processing, and disaster recovery planning (DRP). [61] Sierra has gained considerable experience as a provider of all of the above applications: the company also possesses methodologies for systems development and project management, which are crucial to the success of such endeavours.

6.3.3 Investment Opportunities in Malaysia

Foreign investment is actively sought by the Malaysian government. The Malaysian Industrial Development Authority (MIDA) is responsible for promoting foreign investment. While the government allows foreign ownership of up to 100 percent in export-oriented industries, foreign ownership in non-export industries is limited to 51 percent. Although corporations, partnerships, and sole proprietorships are allowed, the government prefers that international joint ventures be formed between a foreign investor and a domestic business enterprise[62].

Enterprise Malaysia Canada (EMC) was formed to promote the transfer of Canadian technology to Malaysia. Through the use of international joint ventures, the EMC assists Canadian businesses to become established in Malaysia, thus providing them with a preliminary step into the ASEAN market. Ian Reid's relationship with Richard Meiklejohn of EMC afforded Sierra valuable

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[61] Ibid.

[62] Jack A. Gottschalk, *Directory of International Business* (Pasadena, California: Salem Press, 1994).

information on the Information Technology market in Malaysia, and a long list of suitable business partners to investigate.

The government of Malaysia offers incentives to foreign investors: in particular, foreign investors involved in joint ventures with Malaysian business enterprises. The only incentives applicable to Sierra are:

- Capital and profits can be freely repatriated back to Canadian currency, subject to completion of the required exchange control forms.
- Personal income tax is significantly lower in Malaysia than it is in Canada (most noticeably for Canadian expatriates)[63].

6.4 Potential Joint Venture Partners

6.4.1 Role of Enterprise Malaysia Canada

Once Ian Reid had expressed an interest in the Malaysian IT market, EMC provided him with research material on the industry. Before the EMC would provide a list of potential partners to Sierra, Mr. Reid had to submit a proposal to the EMC that outlined Sierra's plan to partner with a Malaysian company. The proposal provided a profile of the intended partnering project, as well as a profile of Sierra as a whole. Upon acceptance of the agreement, the EMC started the process of finding the most appropriate partner for Sierra.

The EMC advised Mr. Reid that if Sierra found a partner they were interested in working with, they would have to jointly develop a Memorandum of

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[63]Enterprise Malaysia Canada, *Guide to Doing Business in Malaysia* (July, 1994).

Understanding. This memorandum would serve as the first step to developing a joint venture agreement -- the working contract between the two partners.

Mr. Reid's project proposal[64] described the desired features and capabilities of the potential Malaysian partner. The minimum partner requirements consisted of:

- stable and financially secure,
- willing to invest capital,
- able to provide relationships/contacts with target industries/companies, and
- capable of contributing appropriate management and staff.

Additional desirable attributes sought in a Malaysian partner included:

- relationships with IT departments of target industries,
- successful joint venture experience,
- no directly competing activities, and
- office, accounting, and administrative support.

6.4.2 Shortlisted Partners

Ian Reid and Simon Mok traveled to Malaysia a total of 3 times in their search for an appropriate joint venture partner. The shortlist of potential partners was limited to three companies. A brief description of each follows.

HSS Integrated Sdn. Bhd.

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[64] *Information Technology Services Project Proposal*, internal Sierra document (June 7, 1994).

HSSI is an engineering consultancy involved in the building and development of Malaysia. The company specializes in the management, design, and supervision of engineering works. With 400 employees, HSSI provides engineering services to Federal and local government agencies, the private sector, and leading financial institutions. HSSI had already successfully formed a joint venture with a Vancouver engineering consultancy, Terra Engineering. Although its core business is engineering, HSSI has diversified into the IT consultancy sector.

XYBase Technologies Sdn. Bhd.

XYBase provides complete information technology solutions for its business clients. Strategic and Systems Planning, Network Integration Services, and Office and Executive Information Systems are but a few of XYBase's service offerings. XYBase was formed just over 3 years ago, and as of mid-1994, consisted of 45 employees. Like HSSI, XYBase had formed a joint venture partnership with a North American firm, MacDonald Dettwiler and Associates Ltd.

Hicom Holdings Bhd.

Formerly known as The Heavy Industries Corporation of Malaysia Bhd., Hicom was initially established as a crown corporation of the government. Hicom's original objective was to develop heavy and technology-intensive industries. Hicom's main interest in Sierra was to provide significant equity if Sierra were to partner with a company like XYBase: essentially, to be a third partner for Sierra and XYBase. Sierra and XYBase would run the operations of the joint venture, with Hicom providing equity to the joint venture.

6.5 Current Status of Joint Venture Opportunity

In January, 1995, Ian Reid decided to wait until the fate of the newly-opened Toronto office was known before committing to Malaysia. He did not want to commit to an international joint venture until he was sure that the Toronto office was profitable and well-established. Further complicating matters was the fact that more expansions were being planned: by July, 1995, the new branch offices of Prince George and Ottawa would be in full operation, followed by the autumn opening of the Washington, D.C. office.

As of June, 1995, Ian Reid decided to put the Malaysian joint venture plans on hold. His main reason for temporarily discontinuing the proposal was that the staff required for such a venture were just not available. So far, only Simon Mok and himself had been identified as suitable candidates for a Malaysian branch office: no other senior consultants with a similar level of experience were willing to relocate to such a remote location. Furthermore, employees with Simon's level of experience were in high demand for local projects. Pulling one or more senior consultants from one of the North American branches would negatively impact current and future projects requiring their expertise.

When this joint venture opportunity is revisited, Sierra must carefully analyze its specialized assets and the potential returns of such a venture. These advantages must be weighed against any disadvantages inherent in such a move. The appropriateness of these assets must be assessed: if the assets do not set Sierra apart in the Malaysian IT consulting industry, then they would not contribute to Sierra's success there. Only if the advantages outweigh the disadvantages by a significant margin should Sierra commit to a joint venture in Malaysia.

Chapter 7
Applying Investment Models to the Case Study

7.1 Appropriateness of Investment Mode

The investment mode chosen by Sierra for entering into the Malaysian market was the international joint venture. The reason for this choice was driven primarily by the Malaysian government. The Malaysian Industrial Development Authority (MIDA) does not allow 100% foreign ownership of Malaysian firms, unless that firm is export-oriented. For industries such as the IT consulting industry, which does not involve the export of goods, MIDA seeks foreign investors willing to share ownership with a local (Malaysian) partner in a joint venture. The joint venture must train Malaysian citizens for both management and staff positions. Ultimately, MIDA wants to create new employment opportunities for its indigenous peoples, and joint ventures are one such vehicle for achieving this goal. A key reason for MIDA's encouragement of joint ventures is to increase the inflow of technological experience and management know-how into Malaysia.

Given the Malaysian government's position, Sierra had no alternative but select the international joint venture as a means of entering the Malaysian market. It is highly unlikely, however, that Sierra would have pursued either a greenfield investment or acquisition even if Malaysian government policy supported these investment options. Sierra does not possess the capital necessary to either acquire an existing firm, or start its own subsidiary branch in Malaysia. Funds are currently tied up in the startup of the two Canadian branches, Prince George and Ottawa, as well as the new U.S. branch in Washington, D.C. Most of the capital required for Sierra to become established

in Malaysia would have to come from an external investor, in this case, a Malaysian joint venture partner.

Sierra's main business reasons for choosing the joint venture route were to minimize risk, and to capitalize on its experience as a strategic working partner.

Joint venture is the least risky option of the three alternative forms of foreign direct investment: greenfield, acquisition, and joint venture. The maximum capital that Sierra was prepared to invest was $400,000. By forming a joint venture, Sierra would have succeeded in entering a new market with minimal capital commitment, since the joint venture partner would be contributing most of the capital investment. In return for the capital investment offered by the joint venture partner, Sierra would have had to offer resources in the form of personnel, specifically, senior managers with the appropriate business and technical expertise.

Sierra has significant experience as a strategic working partner. Over the last decade, Sierra has formed strategic alliances with software vendors such as Microsoft, SAP, and PeopleSoft. These alliances have provided Sierra with excellent exposure to new clients that they might otherwise not have approached. A strategic alliance usually involves the partner recommending Sierra to it's clients as an implementation specialist. The Sierra - PeopleSoft alliance has resulted in several project implementations for Sierra over the last few years. Besides strategic alliances, Sierra has also worked as a subcontractor to other consultancies. Recently, Sierra was subcontracted by IBM to complete the design of a Customer Information System for a consortium of gas utilities. All of these partnership experiences have provided Sierra with the knowledge of the business practices necessary to make a partnership successful, be it with a North American or a Malaysian company.

In the event that the joint venture operation had failed, Sierra's losses would have been minimal. Certainly, the capital investment made would be lost, but the joint venture senior managers could easily be transferred to their original branch locations. The partnership experienced gained would provide a valuable background for future partnerships with other Asian companies.

7.2 Motivations for the Joint Venture

7.2.1 Current Domestic Markets

Sierra's current markets for its professional services are Canada and the U.S. Professional services is the fastest growing segment of the computer services industry within North America. The computer services industry will evolve into the global "information market" by the year 2000. At the turn of the century, the global information market will average 9.1 percent annual compound growth, with North America's revenues of $1,470B U.S. constituting nearly half of the world market[65].

Companies across North America are investing more in information technology, as a means of increasing competitiveness and gaining market share. Downsizing, formerly the buzzword in every corporation, has given way to improving overall quality by investing in information technology. The top strategic uses of IT, according to a recent Canadian survey[66], are:

- improving inventory control,

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[65] Marcar Management Institute, "Global Information Markets" (California , 1994).

[66] SAP Canada Inc., *Strategies for Competitive Advantage* (Ontario, Canada, 1995).

- streamlining production processes,
- integrating departments using networking, and
- integrating processes using client/server technology.

The amount of investment in information technology differs by industry. The largest investors of IT in the future are the financial services industry, health care industry, government and the computer industry itself[67]. Sierra has experience in all of these industries, as well as with the top projected strategic uses of IT.

Sierra's president, Grant Gisel, has prepared a Corporate Vision statement for fiscal year 1997. Included in the vision statement are projections of revenue and staff volumes for 1995 through to 1997. The projections are based on average growth (by branch office) over the past three years. A summary of the revenue projections follows:

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[67] John Shoesmith, "Downsizing gives way to re-investing in IT", *Computing Canada* (August 2, 1995, Volume 21, Number 16).

Table 7.1 Revenue Projections for Sierra (Canadian $ Millions)

Branch	1994 (actual)	1995	1996	1997	% growth (annual)
Vancouver	12.6	13.9	15.2	16.8	10%
Victoria	4.4	4.8	5.2	5.8	10%
Edmonton	2.2	3	3.8	4.4	26%
Calgary	1.4	1.9	2.7	4.0	40%
Seattle	0.8	1.2	1.6	2.0	40%
L.A.	2.5	5	7.0	9.0	40%
Dallas	2.8	4	4.8	5.5	20%
Toronto	0.1	0.8	1.6	3.2	----
Total	26.8	34.7	41.9	50.7	23%
# of employees	300	370	450	*550	22%

* The number of employees is estimated by assuming that each employee generates $90,000 worth of revenue annually.

Sierra's projections for future revenues are extremely healthy, and indicate a continuing demand for Sierra's IT consulting services throughout North America. The revenue growth rates for Vancouver and Victoria are the lowest (10%), indicating that Sierra's revenues in these locations have stabilized somewhat. The highest revenue growth is projected to come from Edmonton, Calgary, Seattle, and Los Angeles. These seemingly optimistic rates are based on a lower revenue base and on the results of the last three fiscal years, and are therefore fairly realistic.

The company is also planning to expand in terms of employees. By 1997, the number of employees is projected to grow to 550, an average 22% increase per year. This growth rate appears to be overly optimistic given that the average increase in Sierra employees between the years of 1988 and 1994 was only 10%[68]. The combination of realistic revenue growth and overly optimistic employee growth indicates that the projection of $90,000 revenue generated per employee is probably a conservative estimate. If an annual growth rate in the number of employees is set at 10%, then the number of employees projected for 1997 is only 400. The 1997 projection of $50.7 million in revenue generated by 400 employees can then be estimated as $126,750 generated per employee.

The projected figures for revenue, number of employees, and revenue generated per employee all contribute to the conclusion that Sierra's domestic markets will continue to grow steadily, at least for the next three years. The Prince George, Ottawa and Washington, D.C. offices are the most recently opened branch offices. More geographical expansions are planned for the next three years, both in Canada and the U.S. Although the payback periods of Sierra's U.S. branch offices have tended to be longer than those of its Canadian counterparts, the potential for long term growth is even greater in the U.S. than in Canada. The Seattle and Los Angeles offices have demonstrated extremely high growth rates of 40%; when these offices were opened, Sierra hadn't yet established a presence in the U.S., and the offices recorded heavy losses. In the past 5 years, however, both offices have posted excellent results as the company has secured itself as a small yet superior provider of IT consulting in the U.S.

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[68] *Sierra Orientation booklet* (May, 1995)

Clearly, Sierra's markets in North America are far from being tapped. Sierra will continue to expand its branch operations throughout Canada and the U.S. until such time that further growth stabilizes.

7.2.2 Taking Sierra's Services to Malaysia

Sierra's primary motivation for forming an international joint venture is to take its IT consulting services to a new market, Malaysia. The Malaysian partner would absorb some of the risk of the joint venture, by providing access to government contacts, gaining membership in local IT associations (such as PIKOM, the Association of the Computer Industry Malaysia), and, most importantly, marketing the joint venture to potential clients. Sierra is the provider of technical and business area expertise: the Malaysian partner would add the necessary local knowledge to ensure that Sierra's expertise is customized to suit the needs of Malaysian clients.

The official language (Bahasa Malaysia) and religion (Islam), combined with the diverse mixture of indigenous and non-indigenous races, contributes to a social culture much different from North American social culture. More than half the Malaysian population is either Malay or Muslim. The most significant minorities are Chinese and Indian. Traditionally, the Malays have predominated in the public sector, with the Chinese forming the entrepreneurial class[69]. In the late 1960's, the Malaysian government introduced legislation to increase Malaysian ownership of the economy. As of 1993, Malay ownership accounted for approximately 20% of the economy.

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[69] The Financial Post, "Malaysia to join ranks of Asian tigers", *The Financial Post* (August 28, 1993), page S11.

Although the social culture of Malaysia differs widely from that of Canada or the United States, the business cultures of the three countries are fairly similar. Although it is not deemed the official language of Malaysia, English is widely accepted as the language of business. The foundation of the legal system in Malaysia is the common law system, which is the same legal system in use in North America.

Many Malaysian businesses prefer to do business with Canadians, primarily because Canadians are perceived as being easier to work with than any other nationality[70]. Both Canada's and Malaysia's economic policies are less strictly formulated than those of some of their European counterparts, such as France, Germany and Britain. Malaysia views Canadian business people as being much more flexible and open, with a more entrepreneurial outlook on business. Although Sierra has four offices operating in the United States, it's head office and the majority of it's branch offices are headquartered in Canada. It would certainly be beneficial for Sierra management to exaggerate their Canadian business style and personality when dealing with Malaysian business people.

7.2.3 Investment of Resources

Sierra's intended capital investment for the joint venture is $400,000. The distribution of capital between Sierra and its Malaysian partner would have to be negotiated. In keeping with Sierra's goal of minimizing the riskiness of this investment, it is likely that Sierra would settle for a share of less than 30 percent.

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[70] The Financial Post, "Now is the time for Canadians to invest in Malaysia", *The Financial Post* (August 28, 1993), page S18.

At the outset of the joint venture, at least two major shareholders from Sierra would be required. Two directors would be required to run the venture from Malaysia (they must reside permanently in Malaysia). The experience level of these directors would be fairly sophisticated, requiring no less than a senior consultant with excellent marketing skills, and extensive knowledge of one or more industries (especially oil and gas, and manufacturing). Ian Reid and Simon Mok volunteered to fulfill the requirements of these roles.

The joint venture partners that Sierra interviewed all put forth the same request: the two Sierra directors selected to start the Malaysian joint venture must be gray-haired Caucasians. Since the Malaysian business community is already well-endowed with Asian peoples of various races (Malay, Chinese, Indian), they seek out foreigners as joint venture partners who truly look "foreign". A Canadian businessman with a Chinese background, for example, would not be well-received as an expatriate to staff the Malaysian joint venture: as far as the Malaysian business people are concerned, a Chinese-Canadian is still essentially Chinese, and does not have the intimate knowledge of Western business methods that a Caucasian does.

Ian Reid fits the gray-haired Caucasian rule well, but Simon Mok does not: he is a Canadian whose parents were born in Hong Kong. Before finalizing the decision of which expatriates to send to the Malaysian joint venture, Sierra would have to consider whether to send out a replacement for Mr. Mok -- a Caucasian male with enough years of experience to satisfy the requirements of the Malaysian joint venture partner.

7.2.4 Expected Returns

Based on informal discussions held with other companies already established in Malaysia, Mr. Reid made the following estimates:

- potential profit margins for consulting services sold in Malaysia are 25 to 30 percent.
- potential payback period for a similar-sized joint venture investment in Malaysia is 2 years.

Within the IT consulting industry, profitability is measured as net profit (before tax and after interest) as a percentage of sales. This profitability ratio can be denoted as Π_{net}. In Sierra's current markets, Π_{net} is typically 7 to 10%. Π_{net} is calculated as total revenue (client fees), less cost of service and fixed expenses. The cost of service primarily consists of employee salaries, which account for approximately 74% of the cost of service. Fixed expenses are generally low, accounting for only 13% of total revenue[71].

The large disparity between domestic profit margins and potential profit margins in Malaysia is due to two items: employee salaries and chargeout rates. In Malaysia, employees are typically paid one-third the salary paid to Canadian employees[72]. Upon startup, Sierra would be staffing the Malaysian joint venture with expatriate employees. It is highly unlikely that these expatriates would be paid one-third that of their counterparts in Canada. However, once the joint venture became established, more employees would be hired from the Malaysian work force. The salaries paid to these employees would be considerably lower than those paid to consultants in Sierra's Canadian offices.

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[71] Sierra Systems Group, "Consolidated Statement of Revenue for the Eleven Months Ending August 31, 1994" (December, 1994).

[72] Enterprise Malaysia Canada, *Guide to Doing Business in Malaysia,* (July, 1994).

The typical salary paid to a computer analyst working in Malaysia is $900 (Canadian dollars) per month[73]. In Canada, the corresponding position would pay about $2,700 per month.

An employee's chargeout rate is the daily rate charged to the client. In Malaysia, the potential chargeout rate for a senior consultant is $1,200 per day; the corresponding chargeout rate for a senior consultant working in one of Sierra's North American branches is approximately $900 per day. The Malaysian chargeout rate is 33% higher than the Canadian rate. Taking both the lower salary rates present in Malaysia and the potential for high chargeout rates into consideration, it is clear that Sierra has substantial monetary incentives for operating in Malaysia within a joint venture environment.

Payback for an investment in a North American branch has proven to be much longer than 2 years. The payback period for the Edmonton office was 5 years. Full payback on the Seattle office, on the other hand, has still not been reached (the Seattle branch office was opened in 1980). Malaysia presents an extremely healthy prospect: payback is estimated to be two years. Clearly, this investment opportunity is potentially more lucrative than opening a new branch office elsewhere in North America.

Mr. Reid did not expect that any of the technical, industry, or application knowledge gained in Malaysia would be of use to Sierra's North American branch offices. Malaysia's IT consulting industry, although healthy and growing, has not evolved to the same level as North America's IT consulting industry. It is unlikely that Malaysia's IT consulting industry will reach North American standards within the next five to 10 years. Accordingly, the expected returns for

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[73] Telephone conversation between Ian Reid and Alan Fung, Executive Director of PIKOM (October 18, 1994).

the joint venture opportunity did not include a transfer of knowledge from Malaysia to the North American office.

The potential for transferring knowledge to other developing countries, however, is much higher. In the event that Sierra expanded beyond Malaysia into a lesser developed ASEAN country (e.g., Indonesia), the knowledge gained by the Malaysian joint venture would mitigate against locational disadvantages inherent in the new market. Although countries such as Malaysia and Indonesia differ in terms of market conditions, government policy and social and business culture, they are more culturally comparable than are North America and Malaysia. Therefore, an evaluation of a further joint venture within the ASEAN market would include an estimate of the potential returns gained from transferring knowledge from the Malaysian office.

7.3 Capabilities and Needs

7.3.1 Analysis of Specialized Assets

Sierra must hold a competitive edge over its foreign competitors, in order for the Malaysian joint venture to succeed. Sierra's specialized assets are based on business and technology knowledge and the use of template guidelines. These assets can only be deployed by the Malaysian joint venture if the joint venture employees possess these assets. The two startup directors already possess these specialized assets. However, the skills of potential new hires may not coincide with these specialized assets. Before hiring any new employees for the joint venture, the joint venture management must be careful to assess the business and technical skills of each potential new hire: if the applicant's experience in target industries, applications, and technologies is insufficient by Sierra's standards, then that applicant should not be hired.

Given that employees with extensive business and technical experience can be found within the Malaysian work force, new hires would have to be trained in the use of Sierra's template guidelines. An intensive training period would be required to orient all new employees, so as to ensure consistency and quality in the application of Sierra's guidelines. Only after the joint venture had been in operation for several years would the level of expertise offered by the Malaysian office start to approach the high level achieved in the North American offices.

Most of Sierra's procedures for knowledge transfer could be used by the Malaysian branch office. Although it would be infeasible for Malaysian branch employees to attend monthly business unit meetings and SIG meetings, the branch and corporate Link newsletter network could easily be extended to include the Malaysian office. The Sierra wide area network could also be augmented to facilitate on-line communications with Malaysian branch employees. The informal procedure used for transferring specific knowledge between consultants (i.e., broadcasting a request for expert knowledge and meeting with identified experts to learn more about the knowledge area) could be used between North American offices and the Malaysia office, but only through the use of telephone calls and electronic mail. In-person meetings would generate exorbitant transportation costs, and would only be feasible in special circumstances (e.g., annual meeting of branch managers).

The services offered by Malaysian IT consultants are closely related to Sierra's service offerings: strategic IS plans; feasibility studies; systems evaluation and selection; systems analysis, design, development, and implementation; systems maintenance and review; disaster recovery planning, and project management are all services that Sierra has considerable experience in providing to clients. The industries in Malaysia that are

demanding these services -- government, financial services, energy resources, and retail -- are all industries in which Sierra has business knowledge, particularly the government and energy resources sectors (oil and gas companies).

One potential risk that Sierra faces in Malaysia is the possibility of losing its specialized assets to competitors. Experience is not an asset that can be easily passed on to an outsider, but detailed systems architectures and projects plans, once printed or saved to a diskette, could easily find their way into the hands of competitors. Documented guidelines could also be distributed fairly easily to external consultants. Sierra has written and enforced formal disclosure agreements with its employees in North America. Similar disclosure agreements, formalized in conjunction with the joint venture partner and local laws, would be required in Malaysia. Copyright laws to protect Sierra's guidelines would be required as well. Although it is entirely possible that an employee of the Malaysian joint venture could leak key Sierra information to an outsider, the fallout of such an act is likely minimal. Without the years of background and experience in the necessary industry, and the training necessary to deploy the technical knowledge via the appropriate Sierra guidelines, it is unlikely that an outside consultant would be able to exploit the stolen assets.

7.3.2 Locational Disadvantages

A North American business person should follow certain rules of business etiquette when dealing with Malaysian business people. As in North America, good manners are essential to doing business in Malaysia. For example, North Americans are advised against pointing the soles of their feet at another person, touching anyone else's head or hair, or gesturing with a forefinger. Forms of

address differ between Malays, the Chinese, and Indians, so it is essential that a North American business person correctly identifies the cultural background of every Malaysian business person with whom he or she comes into contact. Business negotiations with Malaysians tend to be lengthy: patience and politeness are fundamental virtues for ensuring successful negotiations. Once the basic differences in gestures and forms of address have been mastered by a North American, common sense and general good manners will facilitate friendly business relationships with Malaysian business people[74].

Most of the disadvantages inherent in working in Malaysia relate to particular business practices. Differences in collection periods and bank loan requirements are two business practices that would seriously affect Sierra's decision to proceed with the joint venture. In addition, many business dealings conducted in Malaysia are prone to corruption.

The collection period for accounts receivables (of consulting fees) experienced by Sierra in North America is between 30 and 60 days. In Malaysia, however, the collection period can extend to 150 days. Clients in the government sector may take even longer than 150 days to pay their consulting fees. This significant delay in collecting consulting fees would hamper the initial startup of the Malaysian joint venture. A new project that requires the hiring of consultants might have to be delayed until some of the fees from previous projects were collected. The lengthy collection periods would also place a severe strain on maintaining a stable level of net working capital.

In order to maintain a line of credit with a Malaysian bank, Sierra would be required to make a 50% deposit. In addition, a personal guarantee would be

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[74] The Financial Post, "Good manners key to success", *The Financial Post* (August 28, 1993), page S13.

required by one of the senior partners of Sierra. In Canada and the U.S., Sierra is not required to make personal guarantees for bank loans. The requirement for a 50% deposit would put a further strain on Sierra's capital limitations. A potential solution to this problem would be for the Malaysian joint venture partner to take responsibility for all administrative dealings with financial institutions. The joint venture partner would shoulder the responsibility of paying short and long term liabilities, while Sierra would concentrate on the collection of receivables (i.e., consulting fees).

Before an IT project is initiated by a company, it is not uncommon for the company to ask for bids from IT consulting companies. The competing IT consultancies submit their proposals to the company's decision makers, usually a committee of senior managers. These senior managers have ultimate decision making power over which IT consultancy will be awarded the project. In Canada, payoffs are virtually unheard of. In Malaysia, however, it is fairly common for a government project to be awarded to the consultancy that offers a suitable monetary payoff to the decision makers.[75]. Corrupt business dealings are not a business practice that Sierra has (or wishes to have) experience with.

7.4 Selecting the Appropriate Partner

The three companies that Sierra was investigating as potential partners were HSSI, XYBase, and Hicom. Hicom was being considered primarily as a potential third partner if Sierra were to choose a company such as XYBase, whereas HSSI and XYBase were being considered as primary partners in a joint venture with Sierra.

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[75] Faxed letter to Ian Reid, received from Datuk C.K. Lau, a Hong Kong business manager with experience in Malaysia business dealings.

Of the three companies, HSSI is the most sophisticated provider of IT professional services. HSSI has considerable experience in completing small, medium, and large-scale systems integration projects, although it does lack project management experience on larger scale IT projects. XYBase, on the other hand, has primarily completed only small-scale systems integration projects. Hicom, a heavily diversified manufacturing company, has little experience in the IT professional services sector. All three companies are well-placed to provide contacts for Sierra with target industries and companies, but at varying levels of management. HSSI could probably provide contacts at any management level, but XYBase would likely only have access to junior management. Hicom would be able to introduce Sierra to executive level managers of potential clients.

None of the three Malaysian companies would be willing to provide the appropriate management staff for the day-to-day management of the joint venture. Administrative and accounting support would also be the responsibility of Sierra. A local accounting firm would likely have to be hired to handle the Malaysian accounting requirements, and the appropriate support staff would have to be hired and trained to work for the joint venture company.

The following table compares the ratings of each of the Malaysian companies, according to Sierra's partner selection criteria, and to the criteria suggested for enhancing effective cooperation between joint venture partners (refer to section 3.3.3, "Selecting the Appropriate Partner"). Based on the meetings he held with the three companies' management, Mr. Reid assigned a priority to each criteria, as well as a value for each company. The values assigned for each company range from poor (1) to excellent (4) (or unknown, a value of 0, for those criteria which could not be measured given present

information). Based on the values attached to the criteria, it appears the HSSI comes out slightly ahead of XYBase as a potential partner for Sierra.

Table 7.2 Evaluation of Potential Joint Venture Partners[76]

Criteria Type	Description	Criteria Priority (1 - 5)	HSSI	XYBase (1 - 4)	Hicom
Minimum	Stable and financially secure *	4	3	3	4
	Willing to invest capital	4	3	3	4
	Able to provide contacts with target industries and companies	5	4	3	4
	Contribute appropriate management and staff	1	2	2	2
Desirable	Established relationships with IT departments of target industries	5	2	2	2
	Successful joint venture experience	3	4	4	4
	No directly competing activities	4	2	4	4
	Able to provide office, accounting, and administrative support	2	1	1	1
Effective Cooperation	Similar number of employees as Sierra	2	4	2	1
	Similar objectives for venture	5	3	4	2
	Compatible operating policies	3	0	0	0
	Minimum communication barriers between firms	4	4	4	2
	Compatible management teams	4	4	2	0
	Modest level of mutual dependence	2	4	4	2
	Potential to develop a degree of trust and commitment	4	3	3	2
		Total:	153	149	126

*A formal financial evaluation of each company was not performed.

Given what is known about each of the three companies, it is very difficult to determine which firm would cooperate more effectively with Sierra. In order to

[76] The data in this table was compiled based on the results of a personal interview held with Ian Reid on August 1, 1995.

further analyze the detailed management and operational aspects of each of the two firms, it would be necessary for Sierra to first commit to a "Memorandum of Understanding" (MOU) with either HSSI or XYBase (since Hicom would only consider entering as a third partner). The MOU is a non-binding agreement that is progressively revised as the two partners negotiate the details of a potential joint venture agreement. While the MOU is being negotiated, Sierra and the Malaysian partner could conceivably start work on an initial project. If, during the course of the project, it becomes clear that Sierra does not want to continue working with that partner, it would be possible to terminate the temporary agreement without legal ramifications. This temporary agreement would allow Sierra to assess the chosen partner at close range, without committing to a long term arrangement. If the first project proves successful, then Sierra would likely feel more confident in signing a legally binding joint venture agreement with the selected partner. At that point in time, Sierra could consider whether Hicom should be approached as a third partner in the joint venture.

7.5 Decision to Not Proceed

Ian Reid decided not to proceed with the international joint venture, primarily because of the uncertainty of the new startup branches in North America, and the availability of staff. The future of the Ottawa, Prince George and Washington offices is yet to be ascertained. Until these branches stabilize somewhat in terms of procured contracts and generated revenue, Mr. Reid does not want to make any further commitment to direct investment in a foreign market. Although both Mr. Reid and Mr. Mok have volunteered as expatriates for the Malaysian joint venture, it would be extremely difficult to find additional staff within Sierra willing to move to Malaysia. In addition, Mr. Mok's Chinese background does not make him a primary candidate for a joint venture

management position, according to the management of the potential joint venture partners.

The main locational disadvantages inherent in working in Malaysia deal with financing limitations, scarcity of appropriate local staff, lengthy collection periods, and the presence of corrupt business dealings. Other consultancies have established themselves in Malaysia, and presumably they have had to face these same disadvantages. The larger consultancies in Malaysia (e.g., Andersen, Price Waterhouse), however, are backed by huge organizations in the United States, and as such have deeper pockets to ensure that financing limitations and long collection periods do not adversely affect their operations. Sierra would have to rely heavily on its Malaysian partner to administer the necessary relationships with financial institutions.

Corruption appears to be a fact of Malaysian business life: companies must choose to either ignore it or embrace it as a way of doing business. Given Sierra's attitude to avoid corrupt dealings, Sierra would have to rely on the solid reputation of the joint venture to procure future contracts. As successful projects are completed for Malaysian clients, the joint venture would slowly establish itself as an experienced IT consultancy, building its reputation on excellent business and technical knowledge, not successful payoffs to clients.

While troublesome, the locational disadvantages do not appear to be insurmountable. The problems relating to financing limitations and lengthy collection periods would prove to be most problematic during the startup phase of the joint venture. Once established, however, these problems should become less of an impediment. Financial institutions would likely relax restrictions on the joint venture once the operation is stabilized. Lengthy collection periods would be less of an issue when a healthy client base, with both short and long term contracts, had been established. The problem of corruption cannot be

controlled. The most that can be done in such a business climate is to hope that at some level of the decision-making process, expertise and know-how counts more than does a monetary payoff.

Although Sierra's specialized assets appear to outweigh the locational disadvantages, there is a fundamental reason for not proceeding with the joint venture opportunity at this time. The reason deals with the need to fully exploit domestic demand before moving further afield. Currently, the domestic market for IT consulting is flourishing. Annual growth rates of 9% for professional services sector are predicted within the United Status and Canada. The average projected revenue growth for Sierra's branch offices is 23%, with some branches expected to reach 40% revenue growth. Although the demand for IT consulting in Malaysia is quite promising, the industry growth projections indicate that domestic demand is far from being tapped. Sierra is well established in North America, and should fully exploit business opportunities domestically before venturing abroad.

Chapter 8
Conclusions

8.1 Synthesis of Theory and Practical Analysis

Economic and business strategy theory seeks to explain why a firm evolves from a domestic firm into an international firm. This evolution consists of three phases:

Phase 1. A firm makes strategic decisions based on changes in the domestic business environment. Once the domestic market becomes saturated, the firm begins to explore foreign markets. Chance stimuli and shareholder pressures may influence management into investigating foreign markets for investment, so as to realize larger profits and diversify the firm's risks.

Phase 2. The firm evaluates the potential return of international investments, and identifies its own specialized assets with which to arm itself against competitors in the foreign market. Competition in the domestic market intensifies, and the firm must continuously upgrade and innovate in order to stay ahead of it's competitors.

Phase 3. Demand in the firm's home country may foreshadow the demand in foreign markets. The firm uses its specialized assets to overcome the disadvantages it holds with respect to its competitors, and makes continuous product and process improvements in the foreign market.

Practical approaches for foreign direct investment examine the different modes of foreign direct investment: greenfield, acquisition, and joint venture. Entry by any investment mode involves contending with entry and exit barriers. This particular theory suggests that a firm attempting to minimize investment risk may choose the international joint venture as the appropriate vehicle for entering the foreign market. In joint venture agreements, investment risk is shared between the partners. Once the decision to form a joint venture has been made, the firm's management must look at its business motivations for forming the joint venture. The business motivations should be aligned with the firm's capabilities, and the capabilities of the potential joint venture partner. The partner selection process is key to determining the future success of the joint venture. A successful partner relationship consists of partners who contribute the appropriate skills and resources to the joint venture, and who maintain a reasonable level of cooperation. Once the joint venture partners have been selected, the remaining tasks are to design the joint venture, draft a legal agreement, and proceed with the ongoing business of monitoring the joint venture relationship.

The case study -- Sierra's opportunity to form a joint venture with a Malaysian firm -- was analyzed by applying both economic and business strategy theory. The results of this analysis provide a consolidated model of how a firm can effectively assess its prospects in a foreign market. This model should enable a firm to make an informed decision as to whether or not to commit to a foreign direct investment opportunity.

The consolidated model consists of four sequential steps: assess the domestic business environment, assess the foreign business environment, compare the firm's advantages to the locational disadvantages, and use the

results of the preceding steps to determine whether or not to proceed with the investment.

8.2 Assessment of Domestic Business Environment

Before looking at the foreign market, the firm must perform an in-depth analysis of its domestic business environment. Information should be gathered on both current and projected future demand for the firm's services. Industry factors such as new technological developments may influence the firm's future business focus. External factors, such as government regulations, and shifts in political or cultural norms may have a significant impact on future demand for the firm's services.

The firm's main competitors should be carefully researched by asking the following questions:

- what are the strengths and weaknesses of our competitors?
- what is the industry and application focus of our competitors?
- what future directions are our competitors expected to take?
- are there any niche markets for our services that are currently unserved by professional services firms?

Once the analysis of the domestic business environment is complete, the firm must them determine whether there is sufficient demand for the firm's services in current domestic markets. If so, it follows that the firm should not proceed further at this time in an investigation of a foreign market. Assuming the firm is already reasonably successful in its current domestic markets, and future prospects in that market are reasonably promising, then the current market should be exploited fully. Pursuing a foreign investment opportunity when one's

domestic market is not yet fully exploited is to take on additional, yet unnecessary, risks.

If the firm has already exhausted its prospects in the domestic market, and the future of this market does not hold much promise, then the firm can proceed to the next step: analyze the foreign business environment.

8.3 Assessment of Foreign Business Environment

Similarly to the domestic assessment, the firm must look at projected demand for its services in the foreign market, and the success and proposed directions of foreign competitors. A firm will not consider entering into a foreign market unless the potential return is significantly greater than the domestic return. The method of calculating this return will likely differ from company to company: gross margin, net profit before taxes, return on invested capital, or return on equity are just some of the profitability measures that a firm may use to compare domestic to foreign returns. The firm will also be required to invest resources in the foreign investment opportunity: these resources may include capital, personnel (management and staff), and equipment (machinery or advanced technology).

At this point in the assessment, the firm must determine whether the demand for their services, combined with the current competitive situation in the foreign market, warrants entry into that market. Next, the potential returns on the investment must be substantial enough to warrant committing the required resources to the venture. If the firm's domestic returns are higher than (or reasonably close to) the projected foreign returns, then it is unlikely that the firm would take on the added risk of a foreign investment.

8.4 Firm Advantages vs. Locational Disadvantages

Once the firm has made an initial decision to further investigate the investment opportunity, it must perform an internal analysis of the firm's advantages. These advantages are referred to as specialized skills, and they must be such that they would set the firm apart from its competitors in the foreign market. The firm's specialized skills must give the firm a competitive advantage against its foreign competitors. In addition, the specialized skills must be able to sustain the firm in the long run: a false head start may be eroded by the firm's competitors if the specialized skills are only short term assets.

The foreign market should then be analyzed in terms of locational disadvantages: what disadvantages will the firm face because of factors specific to the foreign location? For example, certain aspects of the government policy, culture, and legal system of the foreign country could seriously undermine a firm's chances of successfully establishing itself in its target market. Competitors already established in the foreign market may either be immune to these locational disadvantages, or they may have already succeeded in resolving them. These locational disadvantages must then be critically compared with the firm's specialized skills. The firm's management must make a judgment call as to whether it's specialized skills will assist it to overcome the locational disadvantages at minimal cost. If the locational disadvantages can be mitigated somehow, then the firm has a reasonable chance of establishing itself in the foreign market. Some locational disadvantages may appear serious at the startup of the foreign investment, but may recede somewhat as the firm becomes accustomed to the foreign environment and succeeds in overcoming these obstacles.

8.5 The Final Decision

If the firm advances to this step of the consolidated model, then it has reached the investment decision: whether or not to proceed with the investment opportunity. If the firm's domestic market has not yet been fully exploited, then the firm will likely decide to opt out of the investment, assuming that the firm is already successful in its domestic market. A similar decision will be made if either of the foreign market or advantage/disadvantage assessments fail. If the firm's assessment of the foreign market is such that the potential returns do not significantly outweigh the investment costs, or if the firm's advantages as compared to the locational disadvantages do not put the balance in favour of the firm, then the firm will likely decide to forgo the investment opportunity. A company with deeper pockets than Sierra might decide to proceed with such a joint venture. Deep pockets mitigate the risk of a foreign investment, and as such may allow a company to proceed even when the investment's likelihood of success is not terribly high.

In the case study, Sierra chose to forgo the investment opportunity, but only after selecting the joint venture mode of investment and performing an initial assessment of potential joint venture partners. Ideally, the investment decision should be made based on the results of the domestic and foreign business environment assessments, and the comparison of advantages to disadvantages. If any of these assessments suggest that the investment should not be made, then any further investigation of investment mode or potential joint venture partners is irrelevant. In the case of Sierra, however, the partner selection process proved invaluable. The process of interviewing potential candidates provided insightful information in terms of general business conditions to expect, and potential partners for future expansion into Malaysia.

If the domestic market conditions had been different, then Sierra could have taken the next step by proposing that a Memorandum of Understanding (MOU) be drawn up between Sierra and either HSSI or XYBase. Based on Mr. Reid's evaluation of these two firms, it is likely that he would have chosen HSSI as the joint venture partner. The values assigned to HSSI and XYBase (refer to Table 7.2, "Evaluation of Potential Joint Venture Partners") differ only slightly. Although XYBase rates higher than HSSI in terms of potentially competing with the joint venture, HSSI rates higher in terms of its ability to provide client contacts, its similar number of employees to Sierra, and its compatible management teams. The criterion for which HSSI rates higher than XYBase are ones which could not be renegotiated within an MOU agreement, since they largely reflect the company's basic structure and policies. Mr. Reid's evaluation of HSSI as potentially competing with the joint venture was based largely on his assessment of an individual partner with HSSI. By adding a clause to the MOU that HSSI cannot directly compete with the joint venture, Sierra could mitigate against this threat of competition. Such a clause would not, however, protect Sierra from the gradual transfer of Sierra's specialized knowledge (e.g., guidelines) to the joint venture partner's employees. It would be impossible to avoid the eventuality of employees of the joint venture partner leaving the company and starting a new firm that directly competes with the Sierra joint venture.

In the future, once the domestic market is nearing the saturation point, Sierra may decide to resume investigation of the Malaysian investment opportunity. At that point in time, the nature of the market and the competitors in Malaysia will likely have evolved somewhat. However, the business contacts and general information already gathered on Malaysia's IT consulting industry should provide Sierra with a suitable starting point. Sierra can then reassess the

foreign business environment, and determine whether the projected returns are high enough, and that the firm's advantages outweigh its disadvantages. If the reassessment results in a positive indication that Sierra would succeed in Malaysia's IT consulting market, then the next step would be to conduct a detailed partner selection process. Formal design of the joint venture would follow the selection of a joint venture partner, and would involve determining the scope of the business, and establishing the appropriate organizational and reward structures. The final steps of the joint venture startup process would involve drafting a legal agreement, and developing a suitable mechanism for monitoring the joint venture relationship.

It is likely that Sierra will continue to open new branch offices throughout Canada and the United States before it considers expanding overseas. Growth will likely come from the newest offices opened in Eastern Canada, as well as in all of the United States branches. Sierra is already well-established in Western Canada, especially in the Vancouver and Victoria markets. Based on actual revenue and profits for the Sierra branch offices, Vancouver and Victoria appear to be approaching maturity, and are unlikely to demonstrate significant growth in future years. However, projections for the Eastern Canadian and American offices are extremely promising. Sierra's recent entry into the Eastern United States market should assist Sierra in gaining more widespread acceptance throughout the United States.

The catalyst that initiated Sierra's joint venture opportunity can be explained by economic theory: chance stimuli. Ian Reid's obvious interest in Malaysia was responsible for triggering the first series of investigations into the Malaysian IT consulting market. It is likely that a similar form of chance stimuli will serve as the catalyst for future investment opportunities for Sierra. Perhaps Mr. Reid will revisit the Malaysia opportunity or investigate other ASEAN

countries for potential investment. As Sierra gains more experience on international projects conducted from their domestic branch offices, other employees may suggest and promote foreign investment opportunities. Once the catalyst is present, the consolidated model for assessing foreign investments can be reapplied.

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