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KEY FACTORS OF SUCCESS IN STRATEGIC PARTNERSHIPS:

A Case Study Approach

by

Dyna Vink-Ellis, B.Comm (Distinction)

A thesis submitted to
the Faculty of Graduate Studies and Research
in partial fulfilment of
the requirements for the degree of

Master of Management Studies

**School of Business
Carleton University
Ottawa, Ontario**

June 18, 1991

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**"KEY FACTORS OF SUCCESS IN STRATEGIC PARTNERSHIPS:
A Case Study Approach"**

submitted by Dyna Vink-Ellis, B.Comm.(Distinction)
in partial fulfilment of the requirements for
the degree of Master of Management Studies

Thesis Supervisor

Chair, School of Business

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June 18, 1991

ABSTRACT

This thesis provides a cross case examination of seven strategic partnerships in technology based companies. Thirteen variables have been selected from the literature as a basis for developing propositions that explore the meaning of success to test against empirical data. Pattern matching is used to compare the empirically based findings with the theoretical propositions. Although it was discovered there is an interaction between the independent variables, twelve of the thirteen propositions were supported in differing degrees by the research. Since the interaction between the variables is not yet understood, it is not possible to predict whether a partnership will be successful with only a subset of variables at work.

ACKNOWLEDGEMENTS

I gratefully acknowledge the assistance of the executives from the seven companies and their strategic partners that make up the case study research. Their willing and candid observations made possible the case study approach to the thesis. The two expert panels' willingness to review the material added strength and integrity to the research. Special thanks go to my thesis supervisor, George H. Haines Jr., who helped me navigate the unusual circumstances the case study approach involved. The financial assistance provided to Carleton University by the Department of Industry, Science & Technology Canada during data collection was also appreciated.

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1.0 INTRODUCTION

Over the last decade, firms of all sizes have turned to strategic partnerships as a tool to enhance their competitiveness. Especially in technology intensive industries, companies have used partnerships as a corporate tool to maintain their advantage in a rapidly changing business environment. As the demarcation between industries and technologies becomes increasingly blurred, companies see strategic partnerships as a way to share expertise in complementary technologies. The growing popularity of partnerships is evidence of the many benefits they hold: flexibility, ability to respond rapidly to changing market conditions, and reduction of the learning curve at all stages in the production process.

Companies select strategic partnerships because they are motivated to gain access to new markets and new technologies, reduce financial and research and development risk, speed new product development, develop cost competitive production, and block competitive moves (Mariti and Smiley, 1983; Mytelka, 1987; Sorenson, 1988, Chesnais, 1988). Overall motivations have not changed so much over the years, but the ways in which firms react are changing in response to changing market conditions. Market changes can be summarized into three issues: 1) increased global activity causing firms to face greater competition within both domestic and international markets; 2) the cost of performing research and development is increasing so rapidly that partnering is seen as a significant risk

reduction mechanism for innovative firms that want to stay on top of several research areas; and 3) an increase in technological development results in a shorter product life cycle requiring firms to be more productive just to maintain the status quo.

Ghemawat (1986) points out that firms relying on technology have difficulty sustaining a competitive advantage. The rapidity with which one technology can be supplanted by another erodes the investment that often represents a firm's competitive advantage. Ghemawat asserts that pooling resources in strategic partnerships helps to reduce technology attributable risks.

Many authors have noted (Mytelka, 1987; Mowery, 1988; Chesnais, 1988; Slowinski, 1988; Powell, 1987; Mariti and Smiley, 1983) that technology intensive firms are more likely to seek diverse forms of collaboration. While there is some variation regarding the industries included in this category, the following can be considered representative of those mentioned: informatics, telecommunications, electronics, heavy equipment, chemicals, pharmaceuticals, automotives, aerospace, computer hardware and software, biotechnology and nuclear science. Firms in these industries have been quick to adopt enabling technologies, which in turn make partnering more practicable. Enabling technologies include telecommunication devices, computer hardware and software, facsimile machines, data standards, bar

codes, information networking capabilities, and computer aided design and manufacturing.

Although Canadian firms are not leaders in establishing strategic alliances, there has been a marked increase in partnering activity worldwide. With the exception of a handful of large firms, most Canadian technology based companies are relatively small. During the last decade several of these small entrepreneurial companies have sought out and formed alliances with large firms as a means of commercializing a product or developing process innovation. Some of the resulting relationships have been carefully thought through in advance, and the benefits have been rewarding. Other relationships have been less successful, and the relationship has been terminated.

Research confirms an increase in partnering activity, but this does not imply that all or even most arrangements are successful. In fact, two recent studies conducted by McKinsey & Co. and Coopers & Lybrand suggest that 70% of joint ventures have failed. The poor record of success on the one hand, and the attractive opportunities on the other, have made strategic partnerships a worthwhile area of study. Strategic partnerships afford flexibility that make them attractive alternatives over the traditional option of acquisition -- an activity that has not proved to be particularly successful in technology intensive industries (Doz, 1988).

Several trends have been noted in the area of inter-business relationships. First, an increase in business collaboration strategies has been identified for firms facing dynamic market conditions, particularly where technology plays a key role in product/industry development. Second, the compatibility between large and small firms has become more evident (Venture Economics, 1986, 1987; Hull and Slowinski, 1987; Hull, Slowinski & Collins, 1988; Abonyi, 1988; Harrigan 1985, 1988a, 1988b). Third, there is great opportunity for financial and R & D risk reduction. This highlights the importance of strategic partnerships in emerging technologies and industries. Fourth, small firms cannot be expected to compete successfully against large, stable and concentrated firms (Ferguson, 1988). This conclusion flies in the face of the popular notion that small entrepreneurial firms will save North American industry. The fifth and final trend is the movement toward a flatter organization in which specialists and knowledge workers perform the bulk of the work (Drucker, 1988). The implication for strategic partnerships is that firms will organize around specialty functions that become increasingly information-based. Developing expertise in specialty areas will probably involve collaboration to establish competitive advantage.

Seven case studies have been selected representing technology intensive companies that have pursued at least one strategic partnership. The thesis is an exploratory cross-case analysis to contrast and compare significant variables that

have been identified in the research literature. A summary of each case is included in the appendices.

2.0 THESIS OBJECTIVE AND DEFINITIONS

The main purpose of this thesis is to explore several factors identified in the academic and business literature as contributors to the success of strategic partnerships. Therefore the primary research question is: *What variables contribute to the success of strategic partnerships?* The results of the cross case analysis will add new dimensions to existing research on the subject.

2.1 Propositions

Several propositions have been developed based on the preceding research literature and form the basis of the cross case analysis. In the research proposal, a set of 8 covariant propositions (displayed in Appendix A.8) were laid out. Since performing the empirical research, it has become evident that the set of propositions would be best served by expanding them to include a causal set. It has also become apparent that restructuring some of the covariant propositions would aid the research by being better able to focus on the research question initially posed. Moreover, not all the data can be put into the covariant structure. Thus two sets of propositions have been formulated. The first set is an abbreviated set of covariant proposals, and the second is the causal set. They have been

numbered to reflect a partnership's natural progression.

Covariant Propositions

2. The more strategically a partner is selected, the more successful the partnership.
4. The higher management's commitment to the initiative, the more successful the partnership.
6. The more communication occurs, the more successful the partnership.

Causal Propositions

- 1a. If both partners have in place a corporate plan which identifies a strategic partnership as the most desirable strategic option, then the partnership is more likely to be judged successful.
- 1b. If both partners have defined the goals and objectives for the relationship, then the partnership is more likely to be judged successful.
3. If both partners commit top people to the negotiation process and make an agreement on a comprehensive set of issues, then the partnership is more likely to be judged successful.
5. If both partners consciously set out an organization structure designed to meet the objectives of the partnership, then the partnership is more likely to be judged successful.
7. If both partners share responsibilities according to each partner's area of expertise, then the partnership is more likely to be judged successful.
8. If both partners put in place monitor and control mechanisms, then the partnership is more likely to be judged successful.
9. If both partners put in place an incentive structure to encourage staff commitment to make the partnership work, then the partnership is more likely to be judged successful.
10. If both partners assign capable staff to the partnership in sufficient numbers, then the partnership is more likely to be judged successful.

11. If both partners conduct performance evaluation of the relationship, then the partnership is more likely to be judged successful.
12. If both partners exhibit a willingness to be flexible when unanticipated situations arise, then the partnership is more likely to be judged successful.
13. If both partners have acquired new knowledge as a result of their relationship, then the partnership is more likely to be judged successful.

2.2 Strategic Partnerships Defined

The term 'strategic partnership' or 'strategic alliance' has been loosely used to convey the general idea of firms working together. One definition follows:

Strategic partnerships are ... long term agreements among firms designed to deal with the uncertainties of technological change. Strategic partnerships do not require either equity participation or remuneration for goods and services. By pooling resources, especially in technological expertise, they facilitate a reduction in the costs, risks and uncertainties associated with research and development (Mytelka, 1987).

Reducing cost and risk associated with commercialization of goods and services should be added to the above definition. This involves pooling marketing and distribution resources as well as product development expertise. Partnership objectives often focus on developing a product idea or technology for the future, and therefore tend to involve areas that are removed from core areas of business. Figure 1 illustrates the functional areas in which partnerships most often occur. They include R & D, complementary technology access, sales and marketing, service and distribution, cost competitive manufacturing, and financing. Several of these functions may be required to commercialize a product or improve

Figure 1: Functional Areas of Alliances

Source: Adapted by D. Vink-Ellis from D.J. Teece, "Capturing Value from Technological Innovation: Integration, Strategic Partnering and Licensing Decisions".

process technology for cost minimization objectives. These functions revolve around a core concept or technology that is the focus of the whole process.

Hull & Slowinski (1987) use the Market-Hierarchy continuum to illustrate the different types of business relationships based on the amount of interaction and dependence which distinguish the different types of business agreements on this continuum. Hull & Slowinski describe the different relationships:

On the right end of this continuum is the conventional hierarchy approach: in-house development of new products. However, many companies have perceived a need to stimulate new technology development outside their traditional hierarchies by creating intrapreneurial subunits. ... It is hoped that intrapreneurial approaches will provide easier paths to innovation than the more traditional chain-of-command. [Some] companies have gone even farther in distancing new technology development from the hierarchy of the parent company by spinning out new companies as corporate ventures. The parent company usually retains a strong equity position in the new firm while providing its managers with significant equity positions.

On the left of this continuum is the open-market approach. In theory, each transaction in the open market is independent of all others, as is illustrated by competitive bidding. However, when buyer and seller have repeated transactions and/or long term contracts, the marketplace becomes somewhat less open. In this instance, contractual relationships may develop that are characterized by reduced uncertainty and informal agreements which transcend the legally specified exchange.

Hull and Slowinski point out that making a distinction between hierarchies and open market relationships is important because of the "intangible interaction" that characterizes strategic partnerships. Sharing expertise, trust and a willingness to share agendas are intangible factors that are uncommon to other inter-business relationships.

2.3 Success Defined

At this point a definition of success is put forward. Webster's Dictionary defines *success* as a favourable outcome; *successful* describes something turning out to be as was hoped for. In a strategic partnership there can be no single definition of success since every company enters the relationship with different objectives and different expectations. Different corporate objectives often include one or more of the following:

- a) improved ability to respond to competitors' threats,
- b) a shift in competitive strengths to respond to changing markets
- c) revenue generation
- d) new products
- e) new markets
- f) new technology
- g) increased credibility
- h) cooperate with rivals to stave off developments in harmful areas

- i) risk reduction (technology, market, financial)
- j) source of financing, and
- k) others not yet uncovered in empirical research

Therefore, a successful strategic partnership is one that meets one or more of these objectives as they correspond with corporate objectives. It follows that a strategic partnership is more likely to be successful if objectives have been previously defined. Without objectives, the whole initiative is merely a gamble.

3.0 LITERATURE REVIEW

3.1 Types of Partnerships

Different types of strategic partnerships have been used to structure agreements to accommodate diverse and complex requirements. The following typology outlines basic structures that are commonly used. Agreements frequently include elements from different types of partnerships which can be combined to meet the special requirements of a situation. This typology excludes the popular equity based joint venture since it has a substantial body of research to support it already.

3.1.1 Joint Research & Development

The escalating costs of research and development have prompted firms with complementary technologies to partner as a way of reducing financial risk and

diversifying themselves across opportunities. With limited R & D resources, firms strive to balance two requirements: 1) secure value across efforts, and 2) avoid large investments in marginal projects. R & D provides a good linking function for activity between firms, firms and government, firms and universities and among consortia. Projects can be established with either basic, applied or mission critical objectives.

3.1.2 Licensing

Technology or expertise may be purchased under license as a patent or with a lump sum and royalty scheme. The cost will vary according to the level of advancement and the extent to which the technology or expertise has been proven and/or developed. Licensing reduces client risk and internal development costs, for often the technology is underpriced and includes marketing assistance, product design, and production process specifications (Killing, 1980). An agreement can be struck as a one time deal, but more frequently includes future developments by the licensor within the lifetime of the agreement. Cross licenses may occur within the same industry, often between firms of similar size and strength. Some licensees develop very close links with licensors in a relationship that resembles a joint R & D agreement. For instance, Apple Computer regularly requested improvements from Adobe, the firm from which Apple's free-form graphics capability was licensed. Another purpose for licensing is to extend a technology's life cycle by

licensing it to a lesser developed market once the technology is no longer competitive in established markets.

3.2.3 Co-marketing Agreements

A co-marketing agreement is an agreement through which one firm agrees to grant another firm access to a market in which it is well positioned. This type of agreement often involves sharing marketing and distribution channels. In order for it to be strategic, there must be commitment to the effort from both sides. For example, a firm with developed distribution channels must have something at stake when it sells another firm's product. It might have discontinued developing and manufacturing a similar product of its own. Or it might push another firm's product to fill in a gap in its own product line. Both situations require motivation to sell the product, a philosophy that is not necessarily shared by an agent or distributor in a tactical relationship.

3.1.4 Co-production Agreements

A co-production agreement is an agreement in which process innovations are developed to achieve economies of scale in production. At this stage product development is usually complete and volume output is necessary. It is common for an engineering firm to strike a co-production agreement with a firm specializing in manufacturing. The manufacturing firm contributes expertise to the production

process to permit cost competitiveness. In return it can be granted the status of preferred supplier.

3.1.5 Competitive Alliances

The Business International Corporation (1987) defines competitive alliances as

... ventures between strong international companies that generally remain competitors outside the relationship. Most [alliances] have well defined strategic objectives and are designed to serve global or at least regional markets. Alliances are based on reciprocity; partners offer complementary products, facilities, skills and technologies. The greatest incidence is in manufacturing, although they are also found in the services, natural resources and retail industries. Most competitive alliances are related to the core business of the partners.

Competitive alliances comprise all types of strategic partnerships previously described. The fundamental distinction is that the partnership takes place between competitors, and therefore, it is subject to a more formal and guarded existence. Another distinction is that competitive alliances usually involve two or more large international firms that agree to contribute equity to the undertaking. Many competitive alliances are equity based joint ventures that constitute a third corporate entity. Finally, unlike other strategic partnerships, the objectives of competitive alliances are often related to the partners' core business.

3.2 Risks and Disadvantages

Some general caveats are listed, followed by agreement-specific disadvantages. In general there is risk that a partner will not perform according to expectation. Performance may fail for a number of reasons; a partner exaggerated certain expertise, or it does not control the tasks it was responsible for. The technology may not develop the advantages foreseen, or another technology may displace any advantage. There is also the risk that one firm seizes control leaving the other feeling cheated. Or, just the opposite can happen; neither firm has clear control which results in a partnership that lacks direction (Harrigan, 1985). One partner may imitate an innovation with the intent to compete head to head. Finally, partnerships can carry large organizational and operational costs. Some of these costs can be calculated up front, but others are hidden, or do not become obvious until well into the venture. While concentrating on these administrative complexities, there is the danger of scattering competitive strengths.

Joint R & D agreements are at risk of being formed without a clear insight into the long term overall competitiveness of the firm (Nueno and Oosterveld, 1988). If the partnership is made in isolation of overall corporate objectives, the effort may wind up eroding strengths rather than increasing them.

The licensor in a licensing agreement risks creating a competitor by licensing

out its technology. The irreversibility of the commitment (Porter, 1983) makes it unwise for a licensor to enter an agreement in a market in which it plans to enter itself. However, entering the same market with a different technology (or entering a different market with the same technology) would not cause channel conflict. The licensor must accept that he has no control over the marketing and product roll out plans. Finally, licensing is not usually a high revenue form of market entry, a characteristic that is in line with the low levels of risk and commitment that are involved.

Co-marketing partners may turn out to be less complementary than expected. This problem can often be reduced using reliable market research. Co-marketing will fail if the activity is not truly strategic. Marketing of another firm's product/service must complement or advance the marketer's position in the marketplace or the agreement cannot be expected to endure. This problem can be avoided by determining the strategic complementarity before reaching a final agreement.

The risk of a co-production partnership is that production is not done as expertly or as cheaply as expected. Such a problem can undermine the entire entry strategy and image of a firm trying to enter a new market.

Competitive alliances require sharing control. Large equity investments and organizational interdependence cause the stakes to be so high that one partner tries to seize control. Staff work together on a partner's premises so the risk of compromising security is greater. There may be information leakage that occurs as a result of the alliances a partner has with other competitors. Finally, management may encounter motivational problems and find that employees are reluctant to cooperate with the 'competition'.

3.3 Key Factors of Success

The strategic partnership typology has been presented, the motivations for entering strategic partnerships discussed, and the risks and drawbacks highlighted. Selected factors concerning partner selection and partnership management are reviewed from the business and academic literature. These key factors are put forth as propositions and are compared against empirical data. Partnerships are not expected to succeed without close attention and careful management.

3.3.1 Plan and Consider Strategic Options

Those with practical experience in the area of strategic partnerships advise others to consider alternative options before making a commitment to look for and form a strategic partnership (Sorenson, 1988). If corporate objectives can be achieved within time and resource constraints without a strategic partnership, their

advice is to select a non-partnering option. Other options include direct investment, equity share investment, merger/acquisition, outright purchase, or in-house development.

An economic analysis contributes to the decision making criteria. Contractor and Lorange review the increased/decreased costs and revenues of entering cooperative alliances over establishing wholly owned subsidiaries.

Table 1. Increased Revenues from the Cooperative Venture Over the Fully Owned Subsidiary.

Direct

- * Other partner's knowledge of the market.
- * Other partner's intangible assets such as technology, patents, and trademarks.
- * Other partner's ties to government and/or important buyers.
- * One fewer competitor; hence potentially larger market share.
- * Faster entry; improved cash flows.
- * Access to market otherwise foreclosed.

Indirect

- * More complete product line to help overall sales.
 - * Technical or new product ideas learned from other partner and diffused to other parts of the company.
 - * Mark-ups on components or product trade with partner.
-

Table 2. Decreased Costs from the Cooperative Venture Alternative Compared to the Fully Owned Subsidiary

Direct

- * Economies of scale from larger market share.
- * Rationalization based on each partner nation's comparative advantage.
- * Government incentives and subsidies given to CVs only.
- * Lower capital cost and overhead due to using slack or underutilized equipment or design capabilities in each partner.
- * Less duplication of headquarters personnel.
- * Access through partner to cheaper raw materials and/or component inputs.
- * More productive technology or administrative methods contributed by one partner.

Indirect

- * Productivity and technical improvements diffused to other parts of the company.
-

Table 3. Decreased Revenue from the Cooperative Alternative Compared to the Fully Owned Option

Direct

- * CV association does not allow firm to expand into certain lines of business in the future.
- * Partner reaps the benefit of future business expansion that is not proportional to its future contribution.
- * Lower price is set on behalf of partner.

Indirect

- * Partner's desire to export decreases sales made by other affiliates in international markets.
 - * Partner becomes more formidable competitor in the future.
-

Table 4. Increased Costs from the Cooperative Venture Mode Compared to the Fully Owned Option

Direct

- * Cost of transferring technology and expertise to partner.
- * Increased coordination and governance costs.
- * Pressures from partner to buy from designated sources or sell through its distribution channel.
- * Global optimization for MNC partner may not be possible for: sourcing, financial flows, tax, transfer pricing, rationalization of production

Indirect

- * Increase in headquarters' administrative, legal and other overheads.
 - * Opportunity costs of executives and/or technicians assigned to CV.
-

Source. Farok J. Contractor and Peter Lorange, "Why Should Firms Cooperate? The Strategy and Economic Basis for Cooperative Ventures", pp 3-28 in Contractor, F. and Lorange, P. (Eds.) *Cooperative Strategies in International Business*, Lexington, MA: Lexington Books, 1988, pp 21-23.

Tables 1 - 4 encapsulate the incremental and detrimental costs and revenues associated with collaboration. The actual value placed on the factors will vary according to the situation. However, the authors maintain that "the cooperative mode is preferred if its net incremental profit over the fully owned alternative exceeds the profit share of the other option(s)". The authors acknowledge that risk-reduction effects have not been included in the tables. Other

factors, such as the value placed on access to technology or market expertise, are difficult to quantify.

3.3.2 Partner Selection

The partner selection decision should attract the attention of senior executives owing to the level of commitment required. The number of firms placed on a short list can be limited using criteria such as complementary technological capability, market strength, manufacturing capabilities, and the availability of other relevant resources (Geringer, 1988a). Information to fulfil these criteria can be found from sources such as trade journals, headhunters, consultants, trade shows, government networks and industry associations. Once these preliminary criteria have been satisfied, the following factors can be considered.

a) Shared values. Both players must share a set of common values and have a stake in partnership success. Each partner must perceive that the other is contributing something valuable without which there would be no reason to consider a partnership. The necessity of mutual dependency has been thought of as a 'necessary evil' (Geringer, 1988b). At a level of medium interdependency, prospects for long term partnership survival are greatly increased compared with a relationship where one party dominates. And, there must be mutual commitment upon which to build combined strengths while minimizing weaknesses. Shared

values set the groundwork upon which future advantage can be created.

b) Strategy. There must be a strategy before any deal is struck to ensure there is no unintentional overlap between cooperation and competition. It is necessary to identify and agree upon the areas in which partners will cooperate, and in which they will remain competitors (MacKinnon, 1988). Generally companies protect their core business from partnerships to prevent one firm from becoming too dependent on another (Porter and Fuller, 1987; MacKinnon, 1988). There must be consensus that the endeavour is equally and strategically important to both partners. This might include a discussion regarding Company A's intentions to team up with Company B's competitors within the lifetime of the partnership creating "in-law" relationships. If partners have different objectives in the alliance such as timing, ownership of output and level of remuneration, there may exist a conflict of interest. Harrigan (1985, 1987) concludes that firms should worry less about their partners' traits and more about the competitive needs that the ventures are intended to address.

c) Compatible Management Teams. Managers from partner firms must have compatible working styles (Geringer, 1988a; 1988b). A feeling of trust and competency are a prerequisite for exposing and building on competitive advantages. The ability to interact effectively will be tested when firms from different countries

displaying different cultural and business behaviours join forces. Corporate cultures as well as geographic cultures must be compatible. If there are different orientations to values such as risk orientation, management, decision making and organizational structure, there must be a way of reconciling these differences. Hull and Slowinski (1987) stress the importance of each partner dedicating a 'champion', a principal liaison who serves as a 'gatekeeper'. One study supports the hypothesis that products with champions are more likely to be successful (Chakrabarti, 1974), but the relationship may be precarious since it depends on one person at each firm. If the partnership is between a small and a large firm, the effectiveness of the large firm champion will be particularly important for gathering resources and support for partnership objectives.

d) Size and Location. Relative size of firms has been shown to be less important than their willingness and ability to contribute complementary resources. Firms of comparable size bring a similar measure of resources and power to the partnership, but this tends to provide a less natural fit. Large firms typically possess the financial, manufacturing, marketing and distribution capabilities that small firms lack. On the other hand, small firms frequently have the innovative technology and/or product ideas that large firms lack. The benefits of complementarity between small and large firms seem to outweigh the disadvantages of asymmetrical relations (Geringer, 1988a; Harrigan, 1987; Hull & Slowinski, 1987; MacKinnon,

1988). However, Geringer (1988a) suggests that relatively equal (large) size is preferable when considering the creation of a joint venture.

The location of a partner will bear on the objectives for seeking a partnership. Naturally, it is convenient for partners to be within a few hours travelling time from each other, but if the objective includes gaining market access to a foreign country, close proximity will probably not be possible. In general however, firms that are situated close to each other face fewer cultural and communication obstacles.

e) **Experience.** There are two kinds of experience that are important: a firm's competitive advantage in the market and its experience with strategic partnerships. Harrigan's (1988) research indicates that since 1974 many more partnerships have been struck between partners of different experience in venturing, particularly in technology based sectors. Since partners report a similar level of venture success, she concludes that experienced firms are willing to help their less experienced partners.

3.3.3 Contract Negotiation

There appears to be very little consensus on contract negotiation. Some authors recommend using a simple process by keeping lawyers out of the

proceedings, while others point out how vulnerable the firms are to each other and to forms of aggression from the environment, and therefore recommend legal intervention. Another area open to interpretation is who should negotiate the agreement. Some authors believe it should be one senior executive from each firm while others feel that operational managers should be brought into the process to ensure the feasibility of the proposals. Negotiation time posed yet another contrast in the literature. Some agreements have been concluded in an afternoon with a handshake while others are negotiated for over a year and involve many contract iterations. A well respected lawyer who specializes in cooperative agreements recommends that the legal contract be sufficient to support the business framework. As such, the contract should include categories outlining the structure of the relationship, capitalization, corporate governance and control, employee incentives, liquidity, technology/licensing/ marketing rights, and terms of termination (Lambert & Myers, 1989). The ideal solution for a firm pursuing a strategic partnership would be to hire either a senior executive or an operational manager who is also a lawyer.

3.3.4 Dedicated Management

Several authors have stressed that a lot of time is required to effectively manage a strategic partnership (Hull and Slowinski, 1987; Pucik, 1988; Abonyi, 1988). Sharing responsibility is a requirement for a strategic partnership, so an

enhanced management style is required to achieve common objectives. Many firms have successfully used a dedicated team that is responsible for achieving the objectives of the partnership. The team is composed of specialists from both firms selected to carry out the tasks required to accomplish partnership objectives. Other firms have found that they prefer to borrow the time of experts who are busy with other projects. Regardless, it has been recommended that management have a stake in the success of the alliance. However, they must have control of time and resources needed to make the venture work.

3.3.5 Organization

An effective and simple organization structure is important. The complexity of a partnership is a function of task and organization complexity (Killing, 1988). The factors affecting organizational complexity include the number of partners, the role of each partner, the level of trust and the complexity of the partnership's mission. Killing's research identify three organizational types; shared decision-making, split control and dominant partner. In each of these types the level of trust affects the organization. Therefore, to a certain extent, as trust increases, the organizational complexity will decrease. Osborn and Baughn (1988) point out that arrangements between technology based firms are more likely to be informal to encourage innovation. These results highlight the importance of structuring the

partnership to correspond with its objectives, but must also mesh with the partners' organizational structure overall.

3.3.6 Communication Channels

Directly related to the organizational structure is the ability for information to move easily between members of the partnership. This includes both horizontal and vertical linkages (Sorenson, 1988). Successful alliance managers have reported the value of engineers interacting with other engineers as an effective time saving device that contributes in the perennial race against time. Information channels should be established so that new information is effectively routed to the relevant decision making group (Devlin and Bleackley, 1988). These channels include partners, R & D, production, marketing and customers (Hull, Slowinski & Collins, 1988). The sophistication of the linkages will be affected by the task type. If the task is sequentially accomplished the linkages need not be as developed as a task that is reciprocally accomplished (Borys and Jemison, 1989). Provision must also be made for conflict and its constructive resolution (Spekman, 1988).

3.3.7 Shared Responsibility

Areas of responsibility must be established at the outset. Firms most often take responsibility for the areas in which they contribute the most (Slowinski and Hull, 1988). Figure 2 illustrates the functional contribution and corresponding

Figure 2:

RESOURCES GIVEN TO THE PARTNERSHIP

INFLUENCE/CONTROL IN THE PARTNERSHIP

Source: Adapted by D. Vink-Ellis from Slowinski & Hull, "Partnering with Technological Entrepreneurs: Corporate Strategies for Success", pp. 13 & 17.

responsibilities of small and large firms involved in strategic partnerships. Decisions must also be made regarding responsibility for items such as complaint handling, providing service to customers and repairing/replacing defective products(Sorenson, 1988). It is particularly important to have plans regarding respective jurisdictions in the management of the technology innovation process (Root, 1988).

3.3.8 Mechanisms to Control and Monitor

The amount and area of control should in some way be reflected in the areas of partner responsibility. Control is not meant to reflect ownership since ownership and control are not necessarily synonymous (Harrigan, 1985; Killing, 1982). Implementing a surveillance system is worthwhile in order to detect areas of potential problems between partners. A monitoring process will ensure that if something goes off track, corrective action can be taken quickly. Project management techniques have found fertile ground for monitoring progress and predicting problems before they occur. Progress reports which examine growing or declining levels of trust and respect can supplement performance reports. Regular reporting on the performance and progress of the alliance should be a regular activity and one that should be designed to encourage all levels of participation.

3.3.9 Incentives

Developing an incentive structure that is congruent with partnership objectives is important for assuring common goals. A program that can provide regular feedback to employees provides a signal that the work is achieving desired goals. The program must also be structured to make the work in the interest of the employee. Unless there are consistent incentives, it should not be assumed that employees will take on the corporation's best interests as their own (Lambert & Myers, 1989, Harrigan 1985).

3.3.10 Staffing

Harrigan (1985) notes the frequency with which partnerships, and especially joint ventures, have been staffed with average and below average performers. She considers this an important factor in the high failure rate reported by joint ventures. (These observations are relevant given Harrigan's broad definition of a joint venture.) Since most partnerships are established to minimize risk, it stands to reason that high calibre employees should be involved. To ensure that partnerships attract high quality staff, alliances should be viewed by human resource departments as promotional positions (Devlin and Bleackley, 1988). Since the mandate of the partnership is generally risk-oriented, leadership should encourage risk-taking in order to support innovation. It should likewise accept failure in face

of the risks taken (Hart and Denison, 1988). Pucik (1988) asserts that human resource management is pivotal to the success of strategic alliances.

3.3.11 Performance Evaluation

In general, performance of the partnership will be measured against the objectives. However, demonstrating flexibility is important to resolve changes in product, market and organization that develop over time. It is likely that significant changes in the market will affect the initial objectives and render them obsolete. Therefore, other criteria are needed for performance evaluation. A common mistake is to use longevity as a measure (Harrigan, 1987). Better indicators are the shifts in competitive strengths on each side (Hamel, Doz, Prahalad, 1989). The ability of firms to enhance their internal skills and technologies through collaboration is a key issue. This is particularly true for competitive alliances where there must be significant guarding of non-collaborative areas. Mytelka (1987) proposes that the most successful alliances are those in which technology production is a common goal, therefore the measurement of this activity is a primary criterion for evaluation. One study suggests the use of weighted indexes to evaluate effectiveness (Hull, Slowinski & Collins, 1988). The index includes measures of financing, technology (product and process), manufacturing, sales, management, administration and credibility. Harrigan (1985) reasons that since

alliances permit projects to be undertaken at lower cost, the corresponding returns should be permitted to match the reduced level of risk undertaken.

3.3.12 Flexibility

Many firms consider strategic partnerships primarily because of the flexibility the relationship affords. Flexibility is considered important because of changing markets and technologies, and changing corporate priorities (Venture Economics, 1987). Incorporating flexibility into partnership management is merely an extension of this initial objective. Hull and Slowinski (1987) are more specific about the need for flexibility. They state that flexible commitment is especially important for partnerships at the research stage, but less feasible as products near commercialization. Business International Corp. (1987) agrees that flexibility is important, but contends that it must extend beyond commercialization. Adhering rigidly to contracts may sign the death knell of alliances when there are changes like exchange rates, new competing products, and delays in production lines that alter contribution and reward levels.

3.3.13 New Knowledge

New knowledge attained through joint projects or as part of overall collaboration efforts are important to transfer the expertise elsewhere. This need is less evident in agreements that are limited to market access. "Partners have to

seek to constantly replenish their inventory of core skills that can increase the value of their contribution and their bargaining power within the partnership" (Hamel, Doz, Prahalad, 1986). Hull and Slowinski (1987) suggest that cross fertilization of ideas and shared learning experiences may facilitate effective partnerships as new areas of mutual interest are identified.

Unless learning is a two way experience, an alliance could be interpreted as surrender rather than revitalization. Japanese culture looks more favourably on the need to learn than North American culture (Hamel, Doz, Prahalad, 1989). The same scholars contend that learning begins at the top. Senior management must be committed to improving company skills in order to achieve stated objectives. Yet it is the operating employees at the lower levels of the alliance who must do much of the learning. They must be well briefed regarding alliance objects, areas of collaboration, and areas of partner strength and weakness.

4.0 METHODOLOGY

Case study methodology has been selected to explore the causal links in real life situations that are too complex and (still) too rare for survey or experimental research strategies. The methodological basis is drawn primarily from Yin's *Case Study Research: Design and Methods* (1989).

4.1 Theoretic Model

A theoretic model has been developed in which the dependent variable is a successful strategic partnership and the independent variables are those put forth in the propositions (Plan & Consider Strategic Options, Partner Selection, Contract Negotiation, Dedicated Management, Organization, Communication, Shared Responsibility, Monitor/Control Mechanisms, Incentives, Staff Quality/Quantity, Performance Evaluation, Flexibility, New Knowledge). As Figure 3 indicates, the independent variables on the middle level are in turn dependent variables to independent variables on the third level. This third level, however, is beyond the scope of this research.

4.2 Holistic Multiple Case Design

The thesis uses a holistic multiple case design (Type 3, Yin). Holistic design has been selected since no logical subunits of analysis have been identified. Multiple case studies have been selected in order to enable replication logic to validate the results of the findings. The overall analytic strategy relies on the propositions that initiated the research. These propositions led to the development of the research question, the research design and the attached literature review. Using this design, the thesis attempts to substantiate the propositions from the case study data.

Figure 3: Theoretic Model

Strategic Partnership Success

4.2 Unit of Analysis

The unit of analysis to be researched is the strategic partnership, as previously defined, in technology intensive companies. The seven cases studied either had, or intended to form a business relationship with another firm that had the characteristics of a strategic partnership. Within the strategic partnership category, there are a range of different relationships. Some partnerships are more interactive than others giving them a stronger or weaker contractual element.

4.4 Database

A database has been assembled made up of seven brief case study vignettes covering product type, industry, reason for the partnership, and the independent variables that are to be contrasted and compared. This database is the first known collection of data gathered through numerous interviews and represents a deeper analysis of strategic alliances than has been undertaken heretofore. The vignettes are included in Appendices A.1 - A.7.

4.5 Method of Analysis

The method of analysis is pattern matching. This technique allows the comparison of empirically based findings with those of the theoretic propositions. If the patterns match, the internal validity of the case is strengthened. The more frequently pattern matching can be replicated across cases, the stronger the support

for the propositions. A combination design has been used made up of literal replications predicting an outcome similar to the prediction of the propositions and theoretical replications predicting results contrary to those of the propositions for predictable reasons. This design allows for a structured contrast and comparison of the variables.

Two experts panels have been established. The first is made up of 13 business graduate students who rated each partnership according to the 13 variables under examination using the Strategic Partnership Rating Sheet (Appendix A.9). The rating sheet has been designed to award points to partnerships and thereby determine a basis for pattern matching. Experts awarded points to each independent variable in the following manner: 0 = Not Applicable or Unknown; -1 = Unsatisfactory; 1 = Satisfactory; and 2 = Highly Satisfactory. The totals are used for two purposes: 1) provide an overall indication of the relative success of each partnership, and 2) provide a vehicle for comparing independent variables for pattern matching.

The second expert panel is a control group providing an independent measure of success. It consists of 8 professionals selected from business, industry association and government environments who are exposed to strategic partnerships as part of their professional responsibilities. Panel 2 reviewed the vignettes and

rated the success of the seven partnerships globally using individual criteria which did not need to be specified. Alliance rating was done on a five point scale where 1 = Very Unsuccessful, 3 = Unknown, and 5 = Very Successful (Appendix A.10). For comparison this scale was converted to the same values presented to Panel 1 (0 = Not Applicable or Unknown; -1 = Unsatisfactory; 1 = Satisfactory; and 2 = Highly Satisfactory).

4.6 Thesis Composition

The thesis uses a linear analytic structure. This composition identifies the area of study, findings from the literature, methodology, data findings, limitations, conclusions and implications derived from the research.

4.7 Confidentiality

The companies in each partnership have been assigned lettered labels to disguise their identity. However, it is not possible to always disguise the industries, products and technologies without losing essential information about the partnerships. Therefore this aspect is disguised only where a disguise can be used without losing essential information. In order to further protect the participating companies, the thesis shall not enter the public domain until two years after completion.

5.0 DATA ANALYSIS

5.1 Data Sums and Frequencies

The seven different partnerships have been ranked by sum total according to perceived success by Panel 2. The difference in point totals between the most and least satisfactory was large, indicating that firms perceive strategic partnerships very differently and treat them accordingly. The panel ranked the partnerships as follows:

Panel 2 Ranking	Points out of 16		Product/Industry
		%	
C	13	81	C: Biopharmaceutics
F	12	75	F: Telephone systems
G	10	63	G: Appl dev software
E	10	63	E: Radio isotopes
D	7	44	D: Elec warfare com
B	-6	-38	B: Board level electronics
A	-7	-44	A: Text retrieval software

Table 5 shows the results for Panel 2 ratings. The highest possible rating of sums is 16, made up of 8 responses x the top rating of 2. This panel rated Partnership C most highly with 13. The lowest rating was given to Partnership A (-7). Partnership F was second with a score of 12, followed by Partnerships G and E which both received a score of 10. Since there were fewer questions posed, it is not surprising that the standard deviation of respondents for each alliance is lower in Panel 2 than Panel 1. The lowest standard deviation was for Partnership

C (0.48), followed by Partnerships B, E and G (all 0.66). Partnership A received a unanimously unsatisfactory grade and therefore had a standard deviation of zero.

Table 5: Summary Data by Partnership

	A	B	C	D	E	F	G
Panel 2 - Present							
Sum Total	-7.0	-6.0	13.0	7.0	10.0	12.0	10.0
Response Average	-1.0	-0.8	1.6	0.9	1.3	1.5	1.3
Std. dev. of respondents	0	0.5	0.5	0.9	0.7	0.7	0.7
Panel 2 - Future							
Sum Total	-4.0	-6.0	9.0	7.0	8.0	9.0	8.0
Response Average	-0.6	-0.8	1.1	0.9	1.0	1.1	1.0
Std. dev. of respondents	0.5	0.4	0.9	0.9	1.0	0.8	0.7

Table 6, Frequencies by Partnership, illustrates the frequencies of different ratings (Unsatisfactory, Not Applicable/Unknown, Satisfactory, Highly Satisfactory) provided by Panel 2 respondents. The highest possible score is 8, a single partnership rating for each response. Partnerships C, E, F and G received no Unsatisfactory scores, whereas Partnerships A and B each received 7. Contrary to Panel 1, Partnership A, B and C had no N/A or Unknown scores, while Partnerships D, E, F and G all received 1. This difference in N/A or Unknown scores is probably due to the simpler form of question posed to Panel 2. Four Satisfactory scores went to Partnerships D, E and G, while Partnership A received none. Finally, Partnerships C and F were tied with 5 Highly Satisfactory ratings. Partnerships A and B had none.

Table 6: Frequencies by Partnership

Rating	A	B	C	D	E	F	G
Panel 2							
Unsatisfactory	7	7	0	1	0	0	0
N/A, Unknown	0	0	0	1	1	1	1
Satisfactory	0	1	3	4	4	2	4
Highly Satisfactory	0	0	5	2	3	5	3

Table 7, Variable Sums by Partnership, illustrates the different contributions made by different variables in Panel 1 data. The highest possible rating is 26, based on 13 Panel 1 responses x the top rating of 2. Several variables appear to be more prevalent than others. Flexibility, Communication, Staff Quality/Quantity, and New Knowledge appear to be the most practised variables. Plan & Consider Strategic Options, Dedicated Management, and Shared Responsibility are moderately prevalent, while Incentives are rarely implemented. The low usage of incentives permits two opposing explanations: on one hand, rethinking the advantages of using incentives may offer new opportunities for improving performance; on the other hand, it may indicate that the variable does not significantly contribute to success.

Table 7: Variable Sums by Partnership

Variable	A	B	C	D	E	F	G
Plan,Consider Options	1	7	22	7	13	13	22
Partner Selection	1	7	21	6	14	3	18
Contract Negotiation	-5	0	17	4	14	3	21
Dedicated Management	0	-13	26	13	9	11	19
Organization	-4	-12	22	4	11	16	11
Communication	-4	-13	24	11	13	24	20
Shared Responsibility	-1	-9	25	7	13	17	18
Monitor/Control	-1	-12	18	-3	4	19	19
Incentives	0	-11	11	-1	-5	1	5
Staff Quality/Quantity	-2	2	19	13	14	22	20
Performance Evaluation	0	-5	14	5	11	9	11
Flexibility	0	11	21	19	18	20	18
New Knowledge	1	-4	21	11	17	17	12

Table 8, Frequencies of Variables Across Partnerships, directly corroborates the information in Table 7 by illustrating the frequencies of ratings (Unsatisfactory, Not Applicable/Unknown, Satisfactory and Highly Satisfactory) across partnerships. The maximum possible rating is 91, based on 13 Panel 1 responses over 7 partnerships for each variable. The highest Unsatisfactory scores were recorded for Incentives (39), followed by Contract Negotiation (23) and Organization (22). The lowest Unsatisfactory scores were for Flexibility (6) and Staff Quality/Quantity (8). The highest Not Applicable/Unknown ratings were for Monitor/Control Mechanisms (29) followed by Incentives (21). The lowest Not Applicable/Unknown ratings were for Plan & Consider Strategic Options (3), followed closely by Partner Selection (4). It was encouraging to note that the Satisfactory category received the highest average. This can probably be accounted for by the convenience sample of relatively successful partnerships. The highest number of Satisfactory rankings went

to Plan & Consider Strategic Options (46), followed by Partner Selection (44) and Staff Quality/Quantity (42). The lowest number of Satisfactory ratings was awarded to Monitor/Control Mechanisms and Incentives (both 23). The highest score for the Highly Satisfactory category was for Flexibility (37), followed by Communication (33). By contrast, the lowest number was for Incentives (8), and Performance Evaluation (14). It is apparent that Incentives rated poorly in both Satisfactory and Highly Satisfactory ratings, followed by Monitor/Control. By contrast, firms seem to be demonstrating Flexibility and Planning & Considering Strategic Options more than any other variable. These activities were followed by using good judgement concerning Staff Quality/Quantity, Partner Selection and acquiring New Knowledge.

Four of the 13 variables were given Satisfactory scores above 40. These four variables (Plan & Consider Strategic Options, Partner Selection, Contract Negotiation, and Staff Quality/Quantity) are also the most obvious when applying conventional single business operations to strategic alliances. Perhaps the less obvious variables received lower positive scores because they are less understood.

Table 8: Frequencies of Variables Across Partnerships

Variable	Unsat	N/A	Sat	High Sat
Plan, Consider Options	15	3	46	27
Partner Selection	20	4	44	23
Contract Negotiation	23	9	41	18
Dedicated Management	21	12	30	28
Organization	22	18	32	19
Communication	19	11	28	33
Shared Responsibility	18	13	32	28
Monitor/Control	19	29	23	20
Incentives	39	21	23	8
Staff Quality/Quantity	8	14	42	27
Performance Evaluation	21	18	38	14
Flexibility	6	9	39	37
New Knowledge	18	8	37	28

Table 9, Summary Data by Variable, corroborates Table 8 by illustrating the standard deviation of variables across partnerships. The range of deviation is between 0.8 and 1.1, with the exception of Incentives which had a zero standard deviation owing to the fact that it was hardly practised. Flexibility and Staff Quality/Quantity scored the lowest with 0.8, while Dedicated Management and Communication scored the highest with 1.1. Communication had a high frequency score across partnerships while also scoring a high standard deviation owing to the negative scores in Partnerships A and B. Standard deviation of all data combined was 1.0. The standard deviation is somewhat high, but it is not unreasonable considering the small sample size of 13 observations.

Table 9: Summary Data by Variable

Variable	Average	Std.Dev.
Plan, Consider Options	0.9	0.9
Partner Selection	0.7	1.0
Contract Negotiation	0.5	1.0
Dedicated Management	0.7	1.1
Organization	0.5	1.0
Communication	0.8	1.1
Shared Responsibility	0.7	1.0
Monitor/Control	0.4	1.0
Incentives	0.0	0.0
Staff Quality/Quantity	0.9	0.8
Performance Evaluation	0.6	1.0
Flexibility	1.1	0.8
New Knowledge	0.8	1.0
All	0.7	1.0

5.2 Pattern Matching

Having established a ranking of the partnerships, a basis has been formed for pattern matching across partnerships for each proposition. A summary of the data is presented first, followed by a discussion of the data proposition by proposition. Pattern matching of the propositions is performed based on the ranking provided by Panel 2. In Table 10, the 13 variables are ranked by partnership to provide a concise summation of the data. The highest possible score is 26, based on 13 Panel 1 responses x the high score of 2. Scores have been split into three groups; scores below 11 are Low, scores below 20 are Medium, and scores 20 and above are High.

Table 10: Partnerships Ranked by Independent Variable

Variable	High	2	3	4	5	6	Low
Plan, Consider Options	C, G H	E, F M	B, D L	A L			
Partner Selection	C H	G M	E M	B L	D L	F L	A L
Contract Negotiation	G H	C M	E M	D L	F L	B L	A L
Dedicated Management	C H	G M	D M	F M	E L	A L	B L
Organization	C H	F M	G, E M	D L	A L	B L	
Communication	C, F H	G H	E M	D M	A L	B L	
Shared Responsibility	C H	G M	F M	E M	D L	A L	B L
Monitor/Control	F, G M	C M	E L	A L	D L	B L	
Incentives	C M	G L	F L	A L	D L	E L	B L
Staff Quality/Quantity	F H	G H	C M	E M	D M	B L	A L
Performance Evaluation	C M	E, G M	F L	D L	A L	B L	
Flexibility	C H	F H	D M	E, G M	B M	A L	
New Knowledge	C H	E, F M	G M	D M	A L	B L	

H=High=26≤20; M=Medium=10>20; L=Low <11

Tables 11 and 12 are drawn from Table 10. Table 11 summarizes the number of High, Medium and Low scores in each of the partnerships. It is shown that 4 of the 7 partnerships received no High scores. By contrast, only one partnership received no Low scores.

Table 11: Summary of Scores by Partnership

Partnership	High	Medium	Low
A	0	0	13
B	0	1	12
C	8	5	0
D	0	5	8
E	0	10	3
F	3	6	4
G	4	8	1
Total	15	35	41

Table 12 summarizes the number of High, Medium and Low scores by independent variable. In this data display the highest number of High scores was for Communication (3), followed by Plan & Consider Strategic Options, Staff Quantity/Quality, and Flexibility (all 2). By contrast the highest number of Low scores was for Incentives (6), followed by Partner Selection, Contract Negotiation, Monitor/Control Mechanisms and Performance Evaluation (all 4). Three variables (Monitor/Control Mechanisms, Incentives, Performance Evaluation) had no High scores.

Table 12: Summary of Scores by Independent Variable

Variable	High	Medium	Low
Plan, Consider Options	2	2	3
Partner Selection	1	2	4
Contract Negotiation	1	2	4
Dedicated Management	1	3	3
Organization	1	3	3
Communication	3	2	2
Shared Responsibility	1	3	3
Monitor/Control	0	3	4
Incentives	0	1	6
Staff Quality/Quantity	2	3	2
Performance Evaluation	0	3	4
Flexibility	2	4	1
New Knowledge	1	4	2
Total	15	35	41

Proposition 1

- a. If both partners have in place a corporate plan which identifies a strategic partnership as the most desirable strategic option, then the partnership is more likely to be judged successful.**
- b. If both partners have defined the goals and objectives for the relationship, then the partnership is more likely to be judged successful.**

Partnerships C and G both got High scores for this variable, ranking first and third overall. Partnerships E and F both scored Medium and ranked fourth and second overall. These literal replications indicate that performing adequate planning and considering strategic options do contribute to successful partnerships. The three remaining scores were Low, corresponding to the lowest ranking partnerships. This theoretical replication also supports Proposition 1.

Proposition 2

The more strategically a partner is selected, the more successful the partnership. Only Partnership C got a High score for this variable, and this is the most highly rated partnership. Two partnerships got Medium scores (G and E) corresponding to the third and fourth overall standing. These literal replications provide some support indicating that selecting a partner carefully contributes to successful partnerships. The four remaining scores were Low, but did not follow the overall ranking. This theoretical replication lends some support for Proposition 2.

Proposition 3

If both partners commit top people to the negotiation process and make an agreement on a comprehensive set of issues, then the partnership is more likely to be judged successful.

Only Partnership G got a High score for this variable, and it rated as the third highest partnership overall. Partnerships C and E, first and fourth overall, got Medium scores. These literal replications provide some support indicating that the level of people involved and the range of issues discussed contribute to successful partnerships. The four remaining scores were Low, and did not follow the overall ranking. This theoretical replication lends some support for Proposition 3.

Proposition 4

The higher management's commitment to the initiative, the more successful the partnership.

Partnership C, the most highly rated partnership overall, got the only High rating for this variable. Medium scores went to Partnerships G, D and F, ranking third, fifth and second overall. These literal replications indicate that dedicated management contribute to successful partnerships. The three Low scores were given to Partnerships E, A and B, ranking fourth, seventh and sixth overall. This theoretical replication supports Proposition 4.

Proposition 5

If both partners consciously set out an organization structure designed to meet the objectives of the partnership, then the partnership is more likely to be judged successful.

Partnership C, the most highly rated partnership overall, got the only High rating for this variable. Medium scores were received by Partnerships F, G and E, ranking second, third and fourth overall. These literal replications indicate that developing a special organization structure for the partnership contributes to successful strategic partnerships. The remaining three scores were Low, awarded to Partnerships D, A and B, which ranked fifth, seventh and sixth overall. This theoretical replication supports Proposition 5.

Proposition 6

The more communication occurs, the more successful the partnership.

Three partnerships (C, F and G) scored High in this variable, ranking first, second and third overall. Partnerships E and D scored Medium, and ranked fourth and fifth overall. These literal replications provide the strongest support for practising communication as it contributes to successful strategic partnerships. The remaining two scores were Low and were given to the two lowest ranking partnerships overall. This theoretical replication supports Proposition 6.

Proposition 7

If both partners share responsibilities according to each partner's area of expertise, then the partnership is more likely to be judged successful.

Partnership C, the most highly rated partnership overall, got the only High rating for this variable. Medium scores were received by Partnerships G, F and E, ranking third, second and fourth overall. These literal replications support sharing of responsibility along experience lines as it contributes to successful strategic partnerships. The three remaining scores were Low and were given to the three lowest ranking partnerships overall. This theoretical replication supports Proposition 7.

Proposition 8

If both partners put in place monitor and control mechanisms, then the partnership is more likely to be judged successful.

This was one of three variables that was not given a single High score. Three Medium scores were given to Partnerships F, G and C, ranking second, third and first overall. This literal replication is modest but tends to support implementing monitor and control mechanisms as contributing factors in successful partnerships. Partnerships E, A, D and B received Low scores, and were ranked the four lowest partnerships overall. This theoretical replication also provides modest support for Proposition 8.

Proposition 9

If both partners put in place an incentive structure to encourage staff commitment to making the partnership work, then the partnership is more likely to be judged successful.

This was another of the three variables that was not given a single High score. Only one Medium score was received, and that was by Partnership C, the most highly ranked partnership overall. The Low scores were awarded to Partnerships G, F, A, D, E and B which ranked third, second, seventh, fifth, fourth and sixth overall. Although the most highly rated partnership got the highest score, incentives were so rarely used, that the data cannot be used to support Proposition 9. However, there was no evidence to contradict Proposition 9, such as an inverted ranking.

Proposition 10

If both partners assign capable staff to the partnership in sufficient numbers, then the partnership is more likely to be judged successful.

Partnerships F and G both got High scores for this variable, ranking second and third overall. Three partnerships got Medium scores (C, E, D) ranking first, fourth and fifth overall. These literal replications support the proposition that assigning sufficient qualified staff contributes to successful strategic partnerships. Low scores were given to Partnerships B and A, the lowest ranking partnerships overall. This theoretical replication supports Proposition 10.

Proposition 11

If both partners conduct performance evaluation of the relationship, then the partnership is more likely to be judged successful.

This was the third variable that was not given a single High score. Partnerships C, E and G were given Medium scores, and ranked first, fourth and third overall. This literal replication gives modest support for conducting performance evaluation of strategic partnerships. The four Low ratings were given to Partnerships F, D, A and B, ranking second, fifth, seventh and sixth overall. This theoretical replication offers modest support of Proposition 11.

Proposition 12

If both partners exhibit a willingness to be flexible when unanticipated situations arise, then the partnership is more likely to be judged successful.

Partnerships C and F got High ratings for this variable, and ranked first and second overall. Partnerships D, E, G and B received Medium ratings, and ranked fifth, fourth, third and sixth overall. This was the variable that appeared to be practised the most overall. These literal replications support the need for flexibility in strategic partnerships. The only Low rating was given to Partnership A, which ranked seventh overall. This theoretical replication modestly supports Proposition 12.

Proposition 13

If both partners have acquired new knowledge as a result of their relationship, then the partnership is more likely to be judged successful.

Partnership C got a High score for this variable, and ranked first overall. Four Medium scores were given to Partnership E, F, G and D, which ranked fourth, second, third and fifth overall. These literal replications support the importance of learning in successful strategic partnerships. Two Low scores were given to Partnerships B and A, ranking lowest overall. This theoretical replication supports proposition 13.

6.0 LIMITATIONS OF RESEARCH**6.1 Data Collection**

Since the case studies are ex post facto cross sectional studies, they only illustrate participants' opinions at one stage in time. Although efforts were made to gain several perspectives of important issues from both partners in each partnership, there may have been some events which were distorted due to selective recall. To modify this limitation, the techniques of literal and theoretical replication have been employed to try to smooth out selective recall over the different people and variables. In addition, the interview questions have been designed to focus on factors that have been identified in the research literature. Although the sample was one of convenience, the measurement instrument was

constructed to cover the relevant managerial factors under review. In some instances, participants readily admitted points they felt had been inadequately dealt with. In so much as the researcher was obliged to relay the situation as accurately as possible, such comments draw conclusions which might affect the judgement of the panels which assign the rating.

6.2 Data Validity

A limitation concerning external validity is selection. Since no company that was a party to a failed alliance would contribute to the research, the firms included represent participants in partnerships with different degrees of success. One firm is the exception as it set out to form a partnership, but did not proceed past the selection stage. In this case we have neither a successful nor a failed alliance.

Since both panels examined the same data, it is possible that the results may be tautological.

Due to factors beyond the control of the researcher, it was not possible to complete the interview process as planned. The result is that only two of the seven partnerships were interviewed from the perspective of both firms. This affects the overall validity of the data.

6.3 Methodology

Finally, the precision of pattern matching can involve no precise comparisons. This lack of exactitude can allow for some "interpretive discretion" on the part of the researcher. Since no variance can be measured for single data points, statistical methods are invalid. Until further advances are made in pattern matching measurement techniques, this limitation will exist.

The two panels of experts that rated the partnerships had to confine their judgement to seven two page vignettes of the cases. And while it is possible that these vignettes did not capture the situation in a completely realistic manner, the experts on both panels performed their evaluation from the same material. The ratings were considered necessary to produce an overall ranking in order to conduct pattern matching methodology.

7.0 CONCLUSIONS

The two Panels (graduate business students and seasoned professionals) provided a very similar ranking of the strategic partnership vignettes. This similarity in non-variable ranking provided validity to explore the proposed components of success by breaking strategic partnership success into 13 internally controlled variables.

7.1 Propositions Supported

One proposition, Communication, was very strongly supported by the research. Flexibility did not rate quite as highly as Communication, but it is the most practised variable of all. Seven propositions were supported and include Plan & Consider Strategic Options, Dedicated Management, Organization, Shared Responsibility, Staff Quality/Quantity, Flexibility and New Knowledge. Modest support was shown for four propositions that include Partner Selection, Contract Negotiation, Monitor/Control Mechanisms and Performance Evaluation. The only proposition which was not supported by the research was Incentives, an activity which did not appear to be practised much in any of the partnerships studied. But even for this variable, the ranking of the partnerships remained generally consistent. Table 13, Proposition Support, summarizes the literal and theoretical replication status for each variable. Appendix A.11 summarizes the literal and theoretical replications for each of the independent variables.

From the research it can be concluded that having well developed communication channels is important for achieving strategic partnership success. It has also been shown that several other factors (Plan & Consider Strategic Options, Dedicated Management, Organization, Shared Responsibility, Staff Quality/Quantity, Flexibility and New Knowledge) contribute to a healthy partnership. However, the interaction between the variables remains unknown, and

hence, it is not possible to predict that a partnership will be successful with only a subset of variables at work.

Table 13: Proposition Support

Variable	Literal Replication	Theoretical Replication
Plan, Consider Options	Yes	Yes
Partner Selection	Modest	Modest
Contract Negotiation	Modest	Modest
Dedicated Management	Yes	Yes
Organization	Yes	Yes
Communication	High	High
Shared Responsibility	Yes	Yes
Monitor/Control	Modest	Modest
Incentives	No	Modest
Staff Quality/Quantity	Yes	Yes
Performance Evaluation	Modest	Modest
Flexibility	Yes	Modest
New Knowledge	Yes	Yes

7.2 Econometric Model

Another way of summarizing the results is to use elementary econometric methodology. The use of this methodology has been designed to identify and interpret interrelationships occurring between the independent variables. The intent of this model building is not to perform extensive econometric analysis, since exploratory case study data are not an ideal candidate for such a procedure. However, once the empirical work had been completed, it became evident there was an interaction between several independent variables. A simple model and an example exhibit this interaction.

$$(1) \quad S = a_0 + \sum_{i=1}^3 a_i x_i + \epsilon_1$$

$$(2) \quad x_2 = b_0 + b_1 C + b_2 D + b_3 W + b_4 x_1 + b_5 x_3 + b_6 G + b_7 T + N + \epsilon_2$$

$$(3) \quad x_3 = c_0 + c_1 F + c_2 x_2 + c_3 M + c_4 O + \epsilon_3$$

where:

S = Success

C = the choice of possible partners (measured by the number of partners contacted)

D = criteria set by the firm, $c_2 = f(x_1)$

W = willingness of potential partners to participate

G = size (measured either in sales or number of employees)

T = complementary technological capability

N = other factors that affect x_2 for which measurement methods have not been developed (ie market strength, manufacturing capabilities, availability of other resources)

F = financial arrangements including equity (measured by the clarity of the arrangement; "The financial arrangements for the partnership are xxxxx".)

M = top management involvement in negotiation (binary measurement 0,1; 1 if it is)

O = scope of contract (measured by specification of the structure of the relationship, capitalization, corporate governance and control, employee incentives, liquidity, technology/licensing/marketing rights, and terms of termination)

x_1 = planning and considering strategic options

x_2 = partner selection

x_3 = contract negotiation

x_4 = dedicated management

x_5 = organization

x_6 = communication

x_7 = shared responsibility

x_8 = monitor and control mechanisms

x_9 = incentives

x_{10} = staff quality/quantity

x_{11} = performance evaluation

x_{12} = flexibility

x_{13} = new knowledge

$\epsilon_1, \epsilon_2, \epsilon_3$ error terms

The model illustrates the complexity of the research question. For example, it has been shown that at least two (x_2 and x_3) of the thirteen variables are interrelated. It is therefore proposed as a result of the case study research, that success is determined by an interaction between variables which may be modeled by the above structure. Researchers cannot simply look at strategic partnerships one variable at a time to determine the effect of a variable on the partnership outcome.

7.3 Implications for Management

Although this research is exploratory and therefore inconclusive, some implications for management can be presented. Since none of the propositions have been found to be false, that is to say work against strategic alliance success, the thirteen characteristics can be considered as a general framework within which management may establish and manage a strategic alliance. The following points describe the framework parameters:

1. Spending sufficient time in the planning stage will encourage managers to think in terms of required resources and match them with the most compatible strategic option.
2. Early market research will help to identify market needs and existing efforts directed in the targeted area. This information will be compared with that of well positioned firms considered potential partners in order to confirm or refute assumptions.
3. Taking the time to determine a strategic match of short and long term company objectives will reduce the likelihood of incompatibility later on.
4. Writing a business contract is recommended primarily because it forces partners to think through their expectations and understand their responsibility and risk. Any disagreements arising from this exercise can be resolved at an earlier and less problematic moment.
5. Once an alliance has been struck, the management characteristics (dedicated management, organization, communication, shared responsibility, monitor and control mechanisms, incentives, staff quality and quantity, performance evaluation, flexibility and new knowledge) can be used as a checklist or reminder of issues that must be addressed.
6. Managers interviewed for the research agreed with business and academic literature regarding the inordinate amount of managerial time and effort required to properly manage the relationship with sufficient communication and coordination.

7. The thesis leaves the application of the principles discussed to managers concerned.

7.4 Further Research

Further research can be performed in several areas. First, the theoretic model can be developed to include the third level of variables. That is, develop a breakdown of the independent variable at the second level forming an embedded research design. This analysis would lead the researcher to expand the econometric model to determine the extent and impact of variable interactions on strategic partnership performance. This study could collect the necessary data to build onto the concepts presented here and estimate the nature of the interrelationship.

Second, a larger scale project would enable the researcher to explore more partnerships from both perspectives and enlist larger panels of experts to rate the variables under examination.

Third, further research could test whether strategic partnership success can be improved by implementing missing or poorly practised variables such as incentives, additional partnership organization structure, staff improvement programs or monitor and control mechanisms.

Fourth, an analysis of partnerships along industry lines may reveal inherently different types of relationships between industries. Industry pressures, age and pace of change may be important factors in partnership objectives, and hence structure, as well as length of relationship and consequently, overall success.

Finally, many strategic partnerships appear to be taking place between small and large firms that differ in size by a factor of ten or more. While this was the case in all seven partnerships studied here, no analysis was done to observe differences between small and large firm perceptions of the relationships and how initial objectives differed. Such an analysis may either fuel or dampen the caveats directed to small firms concerning the risk of being swallowed up by the large partner. There is still much to learn about this new form of corporate interaction and development.

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APPENDICES

APPENDIX A.1

VIGNETTE A

Firm A is a private Canadian company that develops and markets its own text retrieval software. Although it is a small player (25 employees, \$2.5 million sales), Firm A licenses its software primarily to large multinational or Fortune 1000 firms, which frequently act as value added resellers (VARs). The identity of Partner A has not yet been finalized, but is expected to be a somewhat larger firm in the software industry. Firm A's objective was to bundle its software with complementary software to broaden its market coverage.

Firm A can devote some attention to planning between May and September each year. The company realized that its VAR and OEM channels were becoming saturated and looked to new end-user channels. The 1989 planning cycle identified the potential for 4 GL programming strength combined with superior text retrieval capability to produce "text management". This potential was confirmed by market research conducted by a qualified consultant who spoke with corporate end-users. To date, no firm has addressed the needs of this area, but Firm A believes this will change. To develop text management capabilities a strategic partnership is the preferred option over going public because Firm A needs 4 GL expertise, marketing, sales and distribution expertise. Firm A is in no position to purchase or develop the expertise, and selling or merging Firm A would mean sacrificing control of the company and the technology.

The Vice President of Sales was the chief executive involved in the partner selection and negotiation processes. An in-person presentation was put together that combined the consultant's findings with partnership opportunities. A short list was made up of three 4 GL companies, one of which was a Canadian firm. The Canadian firm was the first approached, but it wasn't convinced there was an adequate market. After 6 weeks of talks there was still no commitment, so the other firms on the short list were approached. There appeared to be philosophical differences between these firms and Firm A, and no commitment was secured with them either.

Meanwhile, an Italian licensee of Firm A's software appeared convinced there was a text management market. It offered to fund product development as part of its market entry strategy to North America. Firm A was reluctant to jump into this opportunity because it felt that the Italian firm was not familiar enough with the North American market to provide market credibility, marketing, sales and distribution, and it did not have resident 4 GL expertise.

Firm A executives retreated from this initiative and considered the possibility of developing another area in which it had market credibility. Electronic publishing has increasing requirements for powerful text retrieval, but after some consideration, management determined that this market was not a strategic enough direction to justify cooperation with a strategic partner.

Then a different option surfaced, namely to acquire a Swiss distributor of an end-user version of Firm A's software and call it Firm A Europe. The Swiss firm was keen on the idea, had no overlapping business mandates, and understood the technology. Moreover, both firms' European clients were sure to give the initiative their approval. There were two drawbacks: 1) the small size of the distributor (8 employees, \$2 million sales), and 2) action would preclude any partnering activity until the next planning cycle. One year later no further alliance formation or acquisition activity had taken place.

APPENDIX A.2

VIGNETTE B

As a private Canadian company, Firm B is the largest to develop, manufacture and sell board level electronic products for system integrators of open systems. The boards are used in applications ranging from air traffic control, printing, army and navy, to trains and parking meters. Firm B is medium sized by Canadian standards (250 employees / 25 million sales), but a small player in the global market in which it compete. Partner B is a large UK based defense electronics manufacturer. Firm B realizes it is important to have local presence when bidding for military contracts. In fact, most defence related bids involve interfirm cooperation, but usually on a project oriented basis only. The partnership involved a technology transfer from Firm B to Partner B. Partner B had manufacturing and distribution rights in the UK and Firm B retained exclusive marketing rights in North America. The agreement was concluded in September 1986 after 7 months of negotiation.

Firm B has a business plan, and while it targeted foreign market entry, it did not specify a partnership for the job. Firm B considered the partnership a "windfall". Partner B orchestrated a world-wide search for a partner with VME expertise and selected Firm B. Partner B lacked vital technology and access to the North American market, and consequently lost an important bid. Firm B was able to provide these missing ingredients.

Contract negotiations began in March of 1986 and terminated the first round in September 1986 with a 28 page contract. At Firm B the negotiators were the VP Technology and CFO. At Partner B the negotiators were from the corporate office, although the agreement was executed from the Sales and Marketing division. By mutual agreement no lawyers were involved. Royalties, fees and manufacturing terms were outlined, but timing and specification of new product development was left vague. A time frame of 8 years was specified and left open for renewal or renegotiation.

Although Firm B management was keen on making the venture a success, both the President and CFO indicated they had left the scene too early. Partner B has since gone through 3 management changes, which implies that the original players and their commitment are long gone. The partnership went through cycles; whenever things became unmanageable, the original Firm B executives were called in to pump up the relationship. The operational point person at Firm B has little authority, and has the job of ensuring Firm B meets all its commitments with

clients and partners. No special organization was established to handle the commitments of the partnership.

Communication channels were developed early in the relationship to allow for the technology transfer. Engineers spoke directly with their counterparts during a two week course designed to convey knowledge and processes. After that, people started to lose contact and the channels deteriorated. Firm B executives acknowledge that communication channels need to improve, and believe that direct horizontal linkages are the best (ie. involve no intermediaries). Communications have been complicated by the fact that negotiations were conducted with corporate office while implementation took place at a division, and because of Partner B's changing guard.

In the beginning it was established that Firm B had the responsibility to bring Partner B up to speed on VME technology. To do that, manufacturing and engineering processes had to be relayed, as did general VME background. In addition, Firm B had the obligation to produce and revise documentation for Partner B to work with. The latter responsibility fell by the wayside after about a year. Partner B had the responsibility to incorporate the technology into new products it was developing and bid them into new contracts in the UK. It was also to provide Firm B with a project management tool that would fit very well with Firm B's technology. Neither responsibility was carried out as intended. Moreover, there were indications that Partner B was contravening the contract by selling boards into the US market.

Initially it was decided to hold quarterly meetings, but when sales did not increase as quickly as Firm B had anticipated, it put off that commitment. The only other known control mechanism was quarterly royalty reports which were followed by cheques.

No incentives were established at Firm B. Management questioned its job of internally marketing the importance of the strategic alliance, but felt that corporate values would guide staff to do the desirable thing.

With regard to using the best people for the job, there is no evidence to suggest otherwise, except during the initial 2 week technology transfer initiative. Firm B CFO suggested that the course was not adequately thought through. He contended that if it had been, a consultant would have been retained to convey the principles of VME to Partner B, leaving the proprietary areas for Firm B to handle. Moreover, there would have been more interaction and follow-up sessions between different departments at different stages of development.

For Firm B performance evaluation is a function of profitability, and it makes money from the deal. Management acknowledges that in some markets Partner B adds to Firm B's credibility, while in others it is a hinderance. The CFO of Firm B believes that the partnership got off to a bad start because Partner B was desperate to have the technology and made unrealistic concessions. The result is that Partner B keeps complaining that Firm B got the better deal and the same issues are brought up over and over again. The CFO suggests that perhaps Firm B should be less concerned about itself next time.

Firm B has demonstrated flexibility in coping with the changing management at Partner B. Firm B realizes that its contract is not enforceable under British law, so it relies instead on appealing to moral rectitude.

Firm B did not learn as much as it set out to learn. The project management component was never received, although the component by itself is not marketable by Partner B. Partner B learned about VME technology, and about Firm B's proprietary engineering and manufacturing methods. Firm B has learned something about negotiating and managing partnership agreements and will use this to the benefit of all concerned parties in negotiating future partnerships.

APPENDIX A.3

VIGNETTE C

Firm C is a publicly traded Canadian company in the biopharmaceutical industry that develops pharmaceuticals using photodynamic technology (PDT). Still in the experimental stages, PDT consists of lasers, fibre optics and light sensitive drugs to treat disease, particularly cancer. Firm C has about 50 employees and recorded revenues of under \$300,000 in 1988. Partner C is US-based and one of the largest pharmaceutical firms in the world with 4000 employees and revenues of \$4.5 billion. It has particular strengths in oncology (cancer treatment) and vaccines. Firm C needed to tap into established global marketing and distribution networks, but also needed financial sustenance and regulatory savvy to bring its new drugs to market. Partner C saw the potential for enormous new drug revenues in return for relatively low cost investment. The agreement was signed in December 1987 after 3 months of negotiation.

Firm C established from the outset that it would use strategic partnerships as its growth strategy, both from a revenue perspective, and as a defensive position against potential takeovers. The strategy was to have several alliances with large firms at any given time so that there would be powerful allies in the event of a takeover attempt. Other growth strategies were dismissed because Firm C needed specialized expertise it could not access any other way.

Firm C put together a short list of 3 American firms known to have extensive distribution capabilities in the oncology market. All had been approached previously with regard to other matters, giving Firm C some exposure to the different corporate philosophies. Partner C was at the top of the list. At first Partner C didn't fully trust Firm C to do what it claimed it would do, but after completing certain milestones, Firm C was able to gain Partner C's confidence. While both firms had previous experience with partnerships, neither had put together this type of arrangement before.

Negotiations were assisted by Partner C's Canadian-based Director of Corporate Development who acted as a marriage broker and facilitator. Both firms involved lawyers from the outset, and the resulting agreement is 6 inches thick. It was agreed that Firm C would control the project. The contract specified that it was a revenue sharing agreement and included investment infusions. Partner C has regulatory expertise necessary for performing clinical trials according to FDA guidelines, and will be responsible for worldwide sales, marketing and distribution. Some joint development was planned. The chief negotiators were the President of

Firm C and Partner C's Executive VP, Pharmaceuticals, who reports to the Chairman.

Firm C set up a "Tiger Team" management concept. Each firm has a Tiger Team made up of champions in speciality areas such as manufacturing, regulation, medical/clinical, biochemistry, laser technology, etc. These teams are dedicated to the job of getting the drug from the benchtop to the bedside. Their jobs and careers are on the line. The teams work together within each firm, and consult regularly between firms.

The establishment of Tiger Teams incorporates an organization structure in itself. The Teams report to the President of Firm C. In order to concentrate its efforts on the partnership, Firm C sold off a peripheral diagnostics venture it had developed as a revenue generator.

Communication channels appeared well developed. Each Tiger Team interacts on a daily basis and schedule regular weekly teleconference meetings with their counterparts. Once a month the teams meet face to face, alternating between Firm C's and Partner C's offices. As the drug advances through the drug trial stages, these meetings have kept development on track.

Areas of responsibility were well defined at the outset. As new tasks became apparent, or as new developments revealed unclear areas in the contract, new responsibilities are assigned according to the ability to perform the job. Since Firm C made the scientific breakthrough, it handles these aspects of the alliance. Partner C has expertise in regulation, sales, marketing and distribution and takes responsibility for these tasks.

The partnership uses the Tiger Team organization and the resulting meetings as the chief control mechanism. At these meetings the players are able to identify problems, develop solutions and lay out work ahead of them.

Tiger Team members are placed in a make-or-break position. Partners' success will credit their contribution to a breakthrough cancer fighting drug. Failure to perform in the team will result in the loss of their job. Firm C is staking the future of the firm on the success of this partnership, and therefore employees feel the firm's strong commitment.

Firm C has developed proprietary technology and the scientists responsible are committed to the company's future. Very specialized expertise is required to operate the partnership, and Partner C is able to contribute experts in areas Firm C lacks. There is no doubt that Firm C management encourages risk-taking to

foster innovation and reduce time. Partner C acts as a safety net to ensure unnecessary risks are minimized.

Performance evaluation seems to be conducted according to the ability to meet drug trial deadlines on schedule. Basic project management efforts keep this function on track. Success will have been achieved when the drug has passed all FDA regulations; then revenue generation will measure success.

Different time conceptions have required flexibility from both firms. Firm C could turn around a decision in a day, while Partner C took much longer to arrive at a comeback position. Both firms have made necessary adjustments. The amicable relationship has permitted modifications in the contract, such as changing an equity infusion to a convertible loan. One Partner C Tiger Team member joined Firm C's Tiger Team.

Firm C plans to become a vertically integrated firm one day, and appears to be keen on learning different skills to make that objective possible. It has learned about forming and managing strategic alliances, to adjust its expectations concerning time according to its partner's cultural requirements, it is learning about the importance of thoroughness in taking product through drug trials, and it will no doubt take great interest in manufacturing, sales, marketing and distribution functions scheduled to take place in a few years. Both firms have come to rely on the Tiger Team approach.

APPENDIX A.4

VIGNETTE D

Firm D is a publicly held firm that is operated under a matrix management structure. Its shares are held by Firm X Canada but it reports along product lines to Firm D UK which is the defense subsidiary of Firm X Netherlands. Firm D develops electronic warfare communications equipment. It is a medium sized company by Canadian standards with 140 employees and revenues just over \$30 million. Partner D is a large UK based defense contractor with total revenues of 2.5 billion pounds; its Radar Defense Systems division, with which Firm D has the agreement, has revenues of \$250 million. Firm D wanted to move away from naval systems into airborne systems, and saw a North American contract on the horizon. It wanted access to technology in order to make a bid on the upcoming contract. Partner D wanted access to North American military contracts and believed that a strategic partnership as the best vehicle. The contract was signed in August 1987 after 3 months of negotiation.

Internal strategic planning indicated that Firm D should move out of naval equipment and toward aircraft systems. But the company didn't have the expertise to modify the technology by itself, particularly in a short time frame. The obvious solution was to find a partner that could fill in this expertise.

Only 7 or 8 firms were identified as having relevant technology for Firm D's initiative, and negotiations started with the largest. Talks went well, but project costs soared as necessary development costs escalated. Before talks were terminated, Firm D chief executive met with his counterpart from another firm on the list which turned into Partner D. They seemed to share common values. Soon after, a tour of Partner D's plant revealed a much more advanced state of technology, and a letter of intent was issued.

The president of Firm D and the Division Manager of Partner D were the initial negotiators, but negotiations soon moved down to Firm D's Director of Corporate Development and his counterpart at Partner D. No lawyers were involved and the resulting agreement was a mere 18 pages. Operational details have been refined through 5 iterations that have occurred since the original contract. Firm D got technology and Partner D will get money and access to the North American market with bid acceptance. No exclusivity was granted. Co-marketing rights have also been discussed.

Firm D dedicated an operational manager to the partnership full time and gave him access to necessary resources. Each firm has a partnership champion. It is not known exactly how the relationship is organized.

Using its established communications channels, the relationship has been able to overcome a major obstacle early in its development. It was made known through Canadian channels that the bid would stand a much better chance of acceptance if Firm D was the Prime. Since Partner D was accustomed to this position, the ensuing discussions were critical to the success of the partnership. Another serious problem was resolved when the final project cost estimate was tallied at 20% higher than Marketing had recommended in order to stay competitive. Some method of splitting the difference was thus established.

Responsibilities were established at the outset, but as Firm D became Prime, new administration duties fell onto its shoulders. Partner D had overall product control, while Firm D used Partner D's technology to develop the communication component. As Prime, Firm D had to show 60% work sharing contribution, and this involved reallocating several responsibilities.

It is not known if there are monitoring or controlling mechanisms. In putting together the bid, many operational and developmental details were dealt with at length, but it is not known how the interaction is monitored.

No special incentive plan has been implemented by Firm D. However, most of the firm's business revolves around the long term bidding process and work derived from it.

There appears to be an adequate number of trained staff assigned to the partnership. In areas where Firm D had inadequate expertise, it was given assistance from its partner. Since corporate objectives focused on reorienting radar communications systems from sea to airborne craft, there was commitment behind the partnership.

Performance evaluation was seen to be a function of the ability of the firms to interact, get along and resolve conflict. The superiority of the technology was almost taken for granted. The partners had come through two near crises, and had built up trust and confidence in each others' abilities. These factors could only be improved upon if the bid won the request for proposal.

The survival of the 2 crises demonstrate the partners willingness to be flexible. Another sign is that Partner D is the arch rival of Firm D UK. This meant that Firm D Canada had to make a convincing case to its product parent to permit the relationship to develop.

Firm D has learned about the technology needed to develop airborne engineering systems monitoring. Firm D would not have undertaken the project without this technology infusion, although it may have found another source. The firm has also learned about the process of forming and managing a strategic alliance. In the next agreement the firm will only allow for a brief trust building period before tackling the operational issues.

APPENDIX A.5

VIGNETTE E

Firm E is a crown corporation that makes accelerator produced radio isotopes which are used primarily to treat cancer. This product has a shelf life of 8 hours to 2 days. Firm E is currently a medium sized company by Canadian standards with 400 employees and revenues of \$120 million. In 1978, when the agreement was signed, the company had revenues of \$20 million. Partner E is a research institute which draws heavily from west coast academic circles. It currently has 150 employees, 12 of whom work exclusively for the partnership. Firm E sought the partnership to expand its product line and needed specialized expertise to safely produce the product.

Firm E had a plan for corporate growth. Although it had to overcome a "not invented here" syndrome held by executives at its head office, Firm E was able to push ahead with this growth initiative to expand its product line. Owing to head office reluctance, other alternatives such as in-house development had to be explored. A successful case was made to look for outside expertise to ensure safe product development and manufacture.

Partner E was selected from a list of 4 or 5 alternatives because of its west coast location, its Canadian ownership, and the specialized expertise it possessed. Since there was little existing competition along the west coast, location played a relatively important role, particularly in light of the product's short shelf life.

The negotiations went fairly smoothly despite three jarring situations. 1) Some people at Firm E's parent objected to the idea of bringing in new expertise, preferring to develop any necessary technology in-house. 2) The accelerator was delivered during negotiations, and then the supplier went bankrupt. This left the commissioning of the equipment as a new task for Partner E to deal with. 3) Partner E had trouble with its land lease because of the radio active nature of the project. All these obstacles were overcome during the first round of negotiations. Since then virtually the same agreement was renewed in 1981, and again in 1988. Firm E pays for production, makes most of the strategic and management decisions, and has responsibility for sales and marketing while Partner E operates and manages the facility according to safety regulations. Four years ago Partner E reached a certain revenue threshold which entitled it to a revenue sharing status. Partner E is responsible for decommissioning the site once the project is terminated. Lawyers were involved in negotiations but the resulting agreement is rarely referred to.

At Firm E a product manager was put in charge of the partnership as part of his set of product related responsibilities. At Partner E, management began with a point person sent over by Firm E to help get the operation on track. He has since joined Partner E, and has been instrumental in bringing about a slow evolutionary movement away from an academic way of operating to a more commercial mindset. This has meant hiring technicians so that production can be done on Sundays, holidays and in the most efficient commercial manner.

During the first couple of years there was a fair bit of interaction to streamline operations. Since then, Partner E performs product manufacturing, packaging and shipping and does not need to have an elaborate organization relative to Firm E. Firm E still has a product manager and performs the sales and marketing for the radio isotopes.

Communication channels used to be more interactive in the first couple of years, but these channels have proved to be less necessary as operations became more routine. The point person at Partner E handles most communications and funnels them in the appropriate direction. The fact that similar agreements have been signed during both rounds of renegotiation suggests that the situation is well in hand.

Areas of responsibility were laid out at the beginning of the partnership. These changed as new requirements emerged, such as commissioning the equipment, handling land lease trouble and adopting more commercial methods of operation. It was originally expected that Partner E would undertake research and development to create spin-off products, but that never materialized.

A revenue sharing incentive was built into the agreement, however, Partner E plays no role in sales and marketing, so the incentive is only indirect.

There appears to be sufficient qualified staff. Staff performance seems to have improved overall, much to Firm E's satisfaction.

Revenues seem to be the primary way of evaluating performance. In the past, operations were more closely measured in order to identify ways of improving them. That is no longer an area of attention. Safe radio activity levels are another means of evaluating performance. Once certain levels of toxicity/toleration are reached, the production facility will be decommissioned. And finally, the agreement has endured and evolved for 12 years.

Flexibility was evident in the early stages when many changes had to be incorporated into negotiations. Since then, operations have steadily improved commercially, and partners function relatively independently.

Firm E has learned about production of radio isotopes, but has remained reluctant to bring the expertise in-house. Partner E has learned about commercializing its operations. It is not clear whether either firm intend to use this knowledge in some diversified form. Both firms have learned about working with other firms, and Firm E has used this knowledge to establish other strategic partnerships.

APPENDIX A.6

VIGNETTE F

Firm F designs, manufactures and sells small to medium sized telephone systems. Although it is a subsidiary of a UK based firm, Firm F has facilities in 15 countries around the world and sells to over 90 countries. A medium sized firm, Firm F employs 4,000 people and reported revenues of \$420 million in 1988. As the primary products became commodity items, Firm F saw steadily dwindling profit margins. It therefore needed to develop peripheral products that could command a higher profit margin. Partner F specializes in developing voice mail technology and sells through OEM channels. It is a small firm with 70 employees. Partner F was to develop and manufacture a voice mail product based on Firm F's telephone technology. Firm F would sell the product through its distribution network. The initial letter of intent was sent in August 1988, followed by another in March 1989.

The planning process was punctuated by previous experience. Twice before Firm F had tried to develop the product in-house, but had failed. This time a business case was put together for product development identifying a partnership with a firm that had expertise in the technology. The case was presented to top management and got its approval. The product's lifecycle was projected so that low cost manufacturing could be incorporated at the start to enable a harvest of profit margins before the product became a commodity. An architecture was identified that could support other peripheral products.

The partner selection process began with a series of criteria. The partner had to have a common agenda, product design with few components and low manufacturing cost, manufacturing capabilities and processes, longevity so that it could maintain technology edge, other clients so that it would not be too dependent on Firm F, and current technology. Then two major complications surfaced: 1) Firm F US got a new President. As the most powerful regional office, it decided it would get involved in the initiative. The product base upon which the voicemail product would be developed was changed requiring product redesign and renegotiating with potential Partner F (hence March 89 letter). 2) Firm F US brought another firm into the picture once a deal had been agreed to in principle with Partner F. During new talks, Partner F jumped through hoops to keep its position in the project. The new entrant withdrew after 6 weeks stating it could not make any money. It has since gone bankrupt.

Contract negotiations were complicated by the introduction of a new party at such an advanced stage. Negotiations were conducted by Firm F's project

manager, who needed to clear everything with corporate, and Partner F's President. The deal included two parts; development and production. Costing and areas of responsibility were clearly laid out at the beginning using a phase review process developed by Firm F's project manager.

Management closely affiliated with the partnership showed remarkable dedication. However, Firm F is an engineer dominated firm and the "not invented here" philosophy is still powerful. At Firm F a product manager and a project manager devote themselves exclusively to the partnership, and their boss spent between 30% and 50% of his time on the partnership prior to product launch. Partner F began managing the relationship with the VP Marketing and a project manager who spread himself over 4 projects. Realizing that response time was too long, one person was devoted to the partnership.

The organization of the partnership has been a unique experiment from Firm F's perspective. Normally it takes 30 months to get a product from the idea stage to production. With this partnership it took a mere 6 months. The organization was made of a core of 2.5 people who worked exclusively on the partnership and solicited help from other departments as needed. Responsibility was pushed down as far as possible.

Communication channels were encouraged from the beginning. Weekly conference calls served as a jumping off point for people to identify problems and successes and work together to meet objectives. This mechanism allowed people to buy into the project early and commit to its success. Engineers were encouraged to speak directly with engineers and copied department heads on resolutions. Department heads then communicated with the project and product managers as needed.

Responsibilities were shared according to each firm's ability to perform tasks. The initial phase review process set out tasks in sequential order so that everyone knew what was expected of them. Tasks were assigned budgets, so that if there was a proposal to shift some responsibilities, budgets should be transferred and staff retained. This happened with documentation.

The primary monitor and control mechanisms were the weekly conference calls, which retained a very high attendance rate, and the phase review process. These meetings provided the forum at which the phase review project management tool was discussed at length. The activities for the week were broken down and problems were identified well in advance. People could work on minimizing obstacles long before they became a problem.

A resolution test chart featuring various patterns of vertical and horizontal lines. The patterns are arranged in a grid-like fashion, with numerical values indicating the resolution level. The values include 1.0, 1.1, 1.25, 1.4, 1.6, 1.8, 2.0, 2.2, 2.5, 2.8, 3.2, 3.6, and 4.0. The patterns consist of groups of three vertical lines and three horizontal lines, with the lines becoming progressively thinner and closer together as the numerical value increases.

MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS
STANDARD REFERENCE MATERIAL 1010a
(ANSI and ISO) TEST CHART No. 2)

There was no incentive structure in the partnership, other than being associated with a dynamic project that worked. Partner F received small compensation for development, but made money once production geared up.

Firm F management was amazed by the response from its staff. It was believed that this was the most aggressively managed project in the company's history. People broke the rules in order to make the launch date of September 28, 1987. It was joint effort and sheer will that got the product from the development stage to the launch in only 6 months.

Performance evaluation was done in the early stages by determining that the product development period could be shortened. That having been established, revenue generation would be the ultimate test.

Partner F exhibited tremendous flexibility during the partner selection stage. Both partners showed flexibility throughout the development process by being able to accommodate unexpected events and shifting responsibilities back and forth. The shortened development time gave new potential to Firm F.

Firm F learned a lot about forming and managing a partnership as a way of developing new product. The primary accomplishment will be a sensitization by engineers to accept a solution that was not invented in-house. Partner F retains leading edge capabilities in voice mail technology.

APPENDIX A.7

VIGNETTE G

Firm G is a Canadian based supplier of software for advanced application development and data management solutions. Its main product is a 4GL programming tool. Firm G employs 1700 people worldwide and posted revenues of \$125 million in 1989. Partner G is a leading computer-aided software engineering (CASE) products company based in Bracknell, UK. At the time the partnership was finalized, Partner G had 30 employees, but has since grown to 75 employees. The strategic partnership was formed to integrate upper level CASE tools into Firm G's proprietary 4GL product. The agreement was concluded in January 1989 after 4 months of negotiation.

In the corporate planning process, Firm G defined the direction it believes its market is headed. The company will find itself poorly positioned if it is right. To address the changing market, Firm G decided to develop a CASE product that would leverage its mainstream product and avert potential competitive threats. Several options for doing this were explored: a) the capability could not be purchased because it required expertise to integrate; b) an acquisition did not provide control over the resident experts who had the ability to produce the product; c) a strategic alliance allowed Firm G to link with a "pioneer" in the technology and thereby become a "settler".

Two or three firms were on the short list, and although discussions were conducted with them all, the real agenda remained concealed. The partner needed to meet the following criteria: carefully defined set of technological capabilities, a common set of values, and an absence of undermining objectives/projects/capabilities. No third parties or intermediaries were involved. Partner G was also conducting a search for a strategic partner.

The contract was negotiated by a small team that included the Chairmen from both companies, Firm G's Director of Corporate Development and legal counsel, and Partner G's Director of Marketing. The agreement provides Partner G a lump sum up front for development, and royalties once the product is released. Firm G will be the primary marketer and distributor of the new product through its extensive distribution channels. The agreement is for 9 years with renewal options and includes clauses for termination, expansion, intellectual property rights, etc. The contract is executable under the most appropriate set of laws (UK, US, Canada) to meet company needs. The agreement is 15 pages in length with 40-50 pages of annexes. A couple of modifications have already been made.

The agreement is managed by a small team of people at both firms. Firm G has a team of six people, not solely dedicated to the partnership, that is able to solicit expertise and resources from the rest of the company as needed. Partnership management resides in Engineering in the pre-commercial time period, but ultimately answers to Marketing. Partner G has moved a team of technical people into a new R&D facility set up by Firm G in the UK. Both partners appear to be satisfied with the level and numbers of people assigned to the partnership. The establishment of the new R&D facility is one of the ways Firm G shows its commitment.

Both partners have a core team of people in engineering that work for the partnership. These people report to a project manager, who acts as funnel and gatekeeper. In the pre-commercial stage the engineering department had most of the work, but since Firm G underwent a major reorganization in December 1989, all departments answer to Marketing. The objective is to switch the firm's focus from being technology-driven to being market-driven.

The teams communicate with each other on the phone at least every week. People move back and forth at least every 3 months. During face-to-face meetings both business and technical issues are addressed. Other communication is conducted by fax and post. The Chairmen of both firms communicate frequently, and have been called in to clarify the intent of certain clauses. They remain on excellent terms.

The areas of responsibility were clearly laid out at the beginning. With the exception of a few minor changes, the allocation of responsibilities has proved to be realistic. As trust developed, more and more information was disclosed about related strategic issues. As a result, new tasks and responsibilities have been added to enrich the agreement.

The first monitor and control mechanism used was a project management master plan which included a series of schedules outlining work to be performed, by whom, and when. By looking at this large picture, it was possible to make trade-offs when new opportunities came along, or when it made sense to trade jobs. Second, visits back and forth helped to resolve issues face-to-face. Third, different lines of authority act as a check and balance. The R&D facility is located in Firm G's UK office, but reports to Firm G's Canadian head office. But if Firm G's UK office hears anything out of the ordinary, it can trigger an alarm to headquarters.

The contract provides for corporate incentives in the form of royalties, but otherwise, there are no partnership related staff incentives in place. Firm G's

Director of Corporate Development gets a bonus based on revenues of the product. Firm G sales people get bonuses based on sales volume in general.

Firm G hand-picked people to work on the partnership. This approach appears to have challenged and motivated people to work hard. Although the absolute number of people assigned to the task is not large, the tasks are clearly laid out, and skill requirements are known well in advance. This contributes to a lean and mean operation that seems to be adequately staffed.

As with any product evaluation, there are technical milestones to be reached every couple of months. The project management system records in detail every stage of development. Once the product has been commercialized, revenues will be the primary method of evaluation. The product's ability to leverage the mainstream 4GL product will also be taken into account.

Both parties have exhibited flexibility in several ways: enriching the agreement, simple modifications to the contract, working together to take advantage of an opportunity, and Partner G's patience while Firm G endured a year of poor financial performance that led to a major reorganization.

Firm G overcame a mental hurdle allowing it to accept and ingest ideas that came from afar. In addition, it realized how imperative it is to understand the objectives for entering an alliance.

APPENDIX A.8

EIGHT COVARIANT PROPOSITIONS

Several propositions have been developed based on the preceding research literature and form the basis of the cross case analysis.

1. The more strategically a partner is selected, the more successful the Strategic Partnership.
2. The higher the commitment to the venture by participating firms, the more successful the Strategic Partnership.
3. The more organic the organization of the partnership, the more successful the Strategic Partnership.
4. The more communication, the more successful the Strategic Partnership.
5. The more responsibilities are shared, the more successful the Strategic Partnership.
6. The more high performing employees work for the partnership, the more successful the Strategic Partnership.
7. The more each partner's competitive strengths shift, the more successful the Strategic Partnership.
8. The more flexibility exhibited by management, the more successful the Strategic Partnership.

90

90

[illegible]

DEFINITIONS

Strategic Partnership: A strategic partnership is a long term agreement among two or more firms designed to deal with the risks and uncertainties tied to technological change, new product development and commercialization, market diversification and global competition. A strategic partnership does not require (but may include) equity participation or remuneration for goods and services. By pooling resources, especially in technological expertise, it facilitates a reduction in the costs, risks and uncertainties associated with both precompetitive and competitive activities. Often strategic partnerships revolve around two or more functional areas of the firms such as research & development, sales and marketing, service and distribution, cost competitive manufacturing, and financing.

Planning, Consider Strategic Options: Planning includes setting objectives, developing a business plan, and conducting a self-evaluation exercise to determine the gap between what the firm has and what it needs to achieve its objectives. A firm should consider other strategic options such as direct investment, equity share investment, merger/acquisition, outright purchase, or in-house development before selecting the strategic partnership option.

Partner Selection: Partner selection should attract the attention of senior executives. A short list is developed based on complementary technological capability, market strength, manufacturing capabilities, and the availability of other relevant resources. The list is reduced using the following criteria: a) Share a common agenda and have a stake in its success and require the other's input to succeed; b) No unintentional overlap between cooperation and competition; c) Compatible working styles, trust and competency -- corporate cultures as well as geographic cultures; d) Size affects the resources a firm has to offer, but it is less important than a firm's willingness and ability to contribute complementary resources; e) Two kinds of experience: a firm's competitive advantage in the market and its experience with strategic partnerships.

Contract Negotiation: There is no consensus on whether lawyers should be involved in contract negotiation and who should do the negotiating. Since most major business initiatives involve legal contracts, the contract should be sufficient to support the business framework. It should therefore define the structure, capitalization, corporate governance and control, employee incentives, liquidity, technology/licensing/marketing rights, and terms of termination.

Dedicated Management: Dedicated management often has a stake in the success of the alliance. It must have the time and resources available to make the partnership work. Since a characteristic of strategic partnerships is shared responsibility, an enhanced consultative management style is required to achieve common objectives.

Organization: The factors affecting organizational complexity include the number of partners, the role of each partner, the level of trust and the complexity of the partnership's mission. Arrangements between technology based firms are more likely to be informal to encourage innovation. Partnerships are often more formal or hierarchical between large firms cooperating in non-technical areas.

Communication Channels: Both horizontal and vertical linkages are important to keep people informed. It is valuable for engineers to interact with other engineers as a time and distortion saving device. The sophistication of the linkages will be affected by the task type.

If the task is sequentially accomplished, the linkages need not be as developed as a task that is reciprocally accomplished. Often includes a dispute resolution mechanism.

Shared Responsibility: Areas of responsibility must be established at the outset. Firms often take responsibility for the areas in which they contribute the most.

Monitor/Control Mechanisms: Implementing a surveillance system is important in order to detect areas of potential problems between partners. A monitoring process will ensure that if something goes off track, corrective action can be taken quickly. Project management techniques, progress reports, and regular meetings are examples of these mechanisms.

Incentives: Developing an incentive structure that is congruent with partnership objectives is important for assuring common goals. A program that can provide regular feedback to employees provides a signal that the work is achieving desired goals. The program must be structured so that partnership work is measured in employees' work evaluation and counts for career advancement.

Staff Quality/Quantity: Since most partnerships are established to minimize risk, high calibre employees should be involved. Moreover, there should be sufficient expertise assigned to the task in order to enable success. To ensure that partnerships attract high quality staff, alliances should be viewed by human resource departments as promotion positions. Since the mandate of the partnership is generally risk-oriented, leadership should encourage risk-taking in order to support innovation.

Performance Evaluation: Performance of the partnership is generally measured against the objectives. But flexibility is important to resolve changes in product, market and organization that develop over time. Longevity, shifts in competitive strengths, and the ability of firms to enhance their internal skills and technologies through collaboration are indicators of good performance. Once the partnership is producing product/services, profit is another important measure. The point is to have some measure of performance in order to make an informed decision regarding the future of the relationship.

Flexibility: This refers to the willingness and/or ability of both partners to accommodate unexpected events.

Areas of Learning: To gain full benefit from the partnership, all players should exhibit a willingness to learn. Ideally, each partner should be able to point to new knowledge obtained from the alliance.

APPENDIX A.10

Evaluation of Strategic Alliance Success

Instructions:

Please answer the following questions for all seven vignettes. Once completed, this reply sheet may be faxed to 613-521-6241 or mailed to:

Dyna Vink-Ellis
#523 - 2660 Norberry Crescent
Ottawa, Ontario
K1V 6N2

- On a scale of 1 to 5, how successful do you think the strategic alliance is now?
- On a scale of 1 to 5, how successful do you think the strategic alliance will be in the future?
- Which strategic alliance do you feel is
 - most successful
 - least successful

Vignette	#1	#2
A	_____	_____
B	_____	_____
C	_____	_____
D	_____	_____
E	_____	_____
F	_____	_____
G	_____	_____
3a)	_____	
3b)	_____	

APPENDIX A.11
SUMMARY OF LITERAL AND THEORETICAL REPLICATIONS
OF PATTERN MATCHING

Independent Variable	Literal	Theoretical
1. Plan & Consider Options	1,3 4,2	6,5,7
2. Select Partner	1 3,4	6,5,2,7
3. Contract Negotiation	3 1,4	5,2,6,7
4. Dedicated Management	1 3,5,2	4,7,6
5. Organization	1 2,3,4	5,7,6
6. Communication	1,2,3 4,5	7,6
7. Shared Responsibility	1 3,2,4	5,7,6
8. Monitor/Control	2,3,1	4,7,5,6
9. Incentives	1	3,2,7,5,4,6
10. Staff Quality/Quantity	2,3 1,4,5	6,7
11. Performance Evaluation	1,4,3	2,5,7,6
12. Flexibility	1,2 5,4,3,6	7
13. New Knowledge	1 4,2,3,5	7,6

END

2 0-0 7-9 4

FIN