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**International supply chain management: Strategic implications
for the purchasing function**

**Ellram, Lisa Marie, Ph.D.
The Ohio State University, 1990**

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INTERNATIONAL SUPPLY CHAIN MANAGEMENT:
STRATEGIC IMPLICATIONS FOR THE PURCHASING FUNCTION

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree of Doctor of Philosophy in the Graduate
School of the Ohio State University

By

Lisa Marie Ellram, B.S.B., M.B.A., M.A.

* * * * *

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To My Husband

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CHAPTER I

OVERVIEW OF THE RESEARCH

Background

The Changing Relationship Between Buyer and Seller

For some firms, the manner in which the purchasing function relates to and interacts with vendors has been evolving over the past two decades. The evolution has been fueled by shortages, global competition and an increased emphasis on purchasing relationships, which have combined to create a gradual movement away from the traditional, adversarial buyer-seller relationship, which seeks to minimize costs by playing suppliers off against each other (Spekman, 1988).

For these firms, the trend is toward a new kind of relationship: coalitions between buyers and sellers, and others in the distribution channel. Coalitions represent a dramatic change in the way in which these firms conduct business. Coalitions are characterized by cooperation, information sharing, sharing of the risks and rewards of

the relationship, and long-term commitment between trading partners. The term coalitions is further defined in the glossary following Chapter V. Coalitional types of relationships have given rise to the concept of supply chain management.

The Supply Chain Management Concept

Supply chain management represents a new form of coalition activity. In its broadest, theoretical sense, supply chain management encompasses the flow of goods throughout the distribution channel, from supplier to the ultimate consumer. The chain is viewed as a whole, a single entity rather than fragmented groups who each perform their own function (Houlihan, 1985, 1988). Supply chain management is further defined in the glossary following Chapter V.

In practice, supply chain management can take place on a domestic or an international level. Further, all parties in the distribution channel may or may not be part of the supply chain management philosophy within that channel. The terms coalition and supply chain management will be used interchangeably throughout this research.

Participants in supply chain management relationships recognize their interdependence with trading partners. They recognize that supply chain management is not a zero-sum game (Jones 1987). The information sharing and uncertainty reduction that accrue from implementing a

supply chain management philosophy can allow all parties involved to operate with lower cost and risk, while more closely meeting supply chain goals.

The Role of Purchasing

Purchasing can play a key role in supply chain management for a firm. Purchasing involves expertise in building relationships and negotiating mutually acceptable agreements between the firm and outside parties. Similarly, the essence of supply chain management is relationship building, and negotiating contracts based on shared goals.

As the current business climate becomes more competitive and continues to change rapidly, the information that purchasing gains as it interfaces with suppliers can help the firm gain competitive leverage. Further, as supply chain management moves in to the international arena, the experience which purchasing has, based on past participation in international trade, can contribute to building international relationships.

The International Connection

The tremendous growth in international trade complicates buyer-seller relationships, while creating new competitive opportunities. The growth in world trade goes beyond purchasing of raw materials and components, to include such areas as technology sharing, joint research

and development efforts, and providing sales and service support.

The idea of globalization of the world economy has become widely accepted. Globalization of the economy means that the world is seen as one marketplace, rather than segmented by country or some other geographical criteria. The concept of a global economy is changing the way in which firms operate and compete, even for those firms which do not import or export.

Due to the relative experience of the purchasing function in international trade versus other functions, purchasing may be called upon to assist in international coalitions. Participation in international coalitions represents a tremendous strategic opportunity for the purchasing function to span its normal boundaries, and for the firm to create new competitive relationships. Coalition involvement may include such issues as managing the inbound logistics for internationally purchased goods and materials (Anderson 1987).

International Supply Chain Management

Along with the growth in world trade, the concept of international coalitions has also grown. As indicated in the glossary, international coalitions are defined here as formal, long term agreements between two or more parties from different countries, to trade or share product, process, marketing or other ideas, working together toward

a common goal. This definition may include such agreements as joint ventures, licensing, and supply agreements. The key idea is that coalitions are long-term agreements that lie on a continuum in between, but not including arm's length transactions and mergers (Ghemawat et al. 1986, Morris et al. 1987). Many authors feel there is a trend toward increasing use and importance of international coalitions (Morris et al. 1987, Harrigan 1987, Kirkland 1988).

The increase in global trade activity has given rise to the concept of international supply chain management. International supply chain management is much more complex than domestic supply chain management due to distance, language, culture and time zone differences (Monczka and Giunipero 1984). Customs, contract terms and exchange rate differences are further complicating factors.

Firms are willing to go through the extra effort to establish and maintain such long distance relationships only because they can create a competitive advantage for the firm. A worldwide perspective allows global competitors the potential for competitive advantages that those who see the supply market more narrowly could miss. These advantages include superior quality, reliability, improved technological processes for components, lower price, and a captive supply.

To emphasize an earlier point, the growth of international supply chain management represents a

tremendous opportunity for the purchasing function to become involved in the strategic positioning and decision making of the firm. With all of the changes occurring today in international competition and international coalitions, firms are in need of leadership. The purchasing function, with experience in arranging international purchases and in mediating between the firm and external parties, is a logical choice for that leadership role. If purchasing does not step forward to take control, it is likely that another functional area will. Thus, purchasing will miss a rare opportunity to gain new strategic importance.

Statement of the Problem

Three separate, related areas were explored in this research. The first issue was to systematically examine the growth in international coalitions. The second issue was to determine, to the degree possible, the extent of international coalition activity in purchasing. The third issue was to explore the implications of international supply chain management on the purchasing function.

There is currently a lack of consensus regarding whether international coalition formation is truly on the rise (Ghemawat et al. 1986, Morris and Hergert 1987). The first stage of this research focused on determining whether there has been growth in the formation of international coalitions. It also explored the nature of international

coalitions being formed, in terms of industry composition, countries involved, location of the coalition and coalition partners, the reason for coalition formation, and the type of coalition agreement. The goal here was to develop a broad understanding of international coalitions today, to serve as a measure for the growth in international supply chain management over the period 1983 to 1988.

The second issue this research examined was the formation of purchasing based international coalitions. Little comprehensive information is currently available regarding international purchasing coalitions. The details provided in the press regarding international coalition formation are often too vague to draw conclusions regarding the nature of international coalition activity in purchasing.

The final piece of this problem involved three related issues: examining the role and strategic positioning of purchasing functions involved in international coalitional relationships, understanding the nature of the purchasing function's involvement in international purchasing coalitions and determining how the purchasing functions of firms with successful international supply chains have made those supply chains work. While some research has been done exploring the role of purchasing in international buying (Monczka and Giunipero 1984), limited information is available regarding the role of purchasing in the broader context of international coalition activity.

Objectives of the Research

The objectives of this research were to determine the nature and magnitude of international coalition activity in general, and to the extent possible, the nature and magnitude of international coalition activity in the purchasing function. Further, this research specifically examined the role and the strategic positioning of the purchasing function within the firm, as well as the nature of the involvement of the purchasing function in international purchasing coalitions. In addition, a normative model was developed for successful implementation of international supply chain management for the purchasing function of the firm. Thus, the objectives of this research were both descriptive and prescriptive.

The specific research questions which this study addressed are as follows:

1. What is the nature and extent of international coalition activity today?
 - a. How has the level of international coalition formation changed during the time period from 1970 to 1988?
 - b. How has the level of international coalition formation changed during the time period from 1983 to 1988?
 - c. Does the incidence of coalition formation vary by the purposes cited for international coalition formation?
 - d. Do firms forming international coalitions have single or multiple purposes for coalition formation?
 - e. Does the incidence of coalition formation vary by country?

- f. Does the incidence of coalition formation vary by industry?
 - g. Does the incidence of coalition formation vary by the legal form of the coalition agreement?
2. What is the nature and extent of international coalition activity in purchasing?
- a. Has the level of international coalition formation in purchasing changed during the time period from 1983 to 1988?
 - b. Does the nature of purchasing coalition formation vary by country?
 - c. Does the incidence of purchasing coalition formation vary by industry?
 - d. Does the incidence of purchasing coalition formation vary with the legal form of the coalition agreement?
3. How is the purchasing function impacted by involvement in coalitional international supply chain management relationships?
- a. Role implications for the purchasing function
 - 1. What is the range of responsibilities performed by purchasing functions involved in coalitional international purchasing relationships?
 - 2. What are the skill requirements of purchasing functions which are involved in coalitional international purchasing relationships?
 - b. Strategic positioning of the purchasing function
 - 1. What is the input into strategic planning for purchasing functions with coalitional international purchasing relationships?
 - 2. What is the organizational structure for purchasing functions involved in coalitional international purchasing relationships?
 - 3. How does involvement in international supply chain management impact the attitudes of purchasing functions towards their status within the firm?

4. What is the nature of the involvement of the purchasing function in international purchasing coalitions?
 - a. How does the nature of the purchasing function's involvement in international coalitional relationships change over time?
 - b. Why does the purchasing function become involved in international rather than domestic coalitions?
5. Is there a pattern of key factors for successful involvement by the purchasing function in international supply chain management which can be converted to a prescriptive model to guide the purchasing functions of other organizations?

Scope of the Research

The first part of this research focused on the formation of coalitions between two or more separate legal entities on an international level. In addition, this research focused on industrial coalitions, or industry-government coalitions rather than those between two governments. In studying international coalitions, this research did not include banking or financial services, or real estate ventures. In these types of ventures, taking an interest in a partner is often common place, and involves a financial investment rather than any other type of sharing with a partner. Thus, these types of ventures are not necessarily indicative of coalition formation.

For purposes of this research, international coalition activity was limited to those coalitions which were reported in The Wall Street Journal. The first phase of this study used the formation of international coalitions as representative of the formation of international supply chain management relationships.

While the general subject area of this study was the incidence of international supply chain management relationships, this research focused more specifically on the implications of international supply chain management on the purchasing function of the firm. This study also explored how international supply chains were formed, and the organizational structures within which international supply chains were formed. Thus, in the first phase of the study, empirical findings on the formation of international supply chain relationships had broad applications across organizations and industries. However, the second phase of the study was conducted with the intent of focusing only on the implications of international coalitional involvement on the purchasing function.

The basic variables examined in this research included: incidence of international coalition formation, type of international purchasing relationship which the purchasing function maintains, the role of the purchasing function, and the strategic positioning of the purchasing function. These variables are defined below, with more detailed, operating definitions provided in Tables 8 through 13 in Chapter III, the methodology chapter.

The variable incidence of international coalition activity was defined as the number of international coalitions formed from 1983-1988 inclusive, as reported by The Wall Street Journal. This variable is defined in Table 8, and further detailed in Appendix A. After it was

determined that a relationship should be classified as an international supply chain relationship, the relationship was further categorized. A copy of the data input used to capture the information for each coalition in The Wall Street Journal data base, along with an explanation of each data category, is included in Appendix B. Classification was made according to the purpose or purposes for forming the coalition, as shown in Table 9 with greater detail shown in Appendix C, and legal form of the coalition, as shown in Table 10. In addition, coalitions were classified according to coalition country, coalition partner countries, and primary industry of the coalition partners.

The second variable, type of international purchasing relationship, was defined based on the nature of the relationships that the purchasing function of the firm had with critical international suppliers. The relationship could be classified as arms-length, supportive or coalitional, as is detailed in Table 11 of the methodology chapter. This research explored only coalitional relationships.

As in Table 12, the variable the role of the purchasing function was defined to include the range of activities that are included within the purchasing function, and the skills required to successfully carry out the duties within the purchasing function. This variable was examined for purchasing functions with coalitional international purchasing relationships.

The variable strategic positioning of the purchasing function is defined in Table 13. This variable included the input of the purchasing function into the firm's planning process, the organization of the purchasing function, and the buyer's perceptions of the status of the purchasing function within the firm.

As discussed in the methodology section, a two stage study methodology was used to conduct this research. The first part of the research provided a broad overview of supply chain management activity today by gathering and analyzing data regarding all coalitions formed during the study period as reported by The Wall Street Journal. The gathering of stage one data preceded the gathering of stage two data. Stage one data was used to gain an understanding of international purchasing coalitions. This information was used to determine specific companies and industries of interest for inclusion in the case study.

The second stage of the study, specifically examining international supply chain management implications for the purchasing function, involved a small group of companies, using an in-depth case study methodology. The combination of these two methodologies, a broad overview of international supply chain management formation and trends, coupled with an in-depth analysis of specific organizations provides both a breadth and depth of knowledge into the international supply chain management phenomenon.

Hypotheses of the Research

The specific hypotheses which this research addresses are listed below. The hypotheses were designed to specifically examine the variables which this research explored. These variables were chosen based on careful review of the literature, and the researcher's assessment of areas potentially affected by the formation of international supply chain management relations. For consistency, all hypotheses were stated in the null case. The hypotheses were tested at an alpha value of .05, using the appropriate statistical technique. The hypotheses are discussed in more detail in Chapter III.

Hypothesis A: Incidence of International Coalitions

- A1. There has been no change in the level of international coalition formation activity from 1970 to 1988.
- A2. There has been no change in the level of international coalition formation activity from 1983 to 1988.
- A3. There is no difference in the incidence of international coalition formation by purpose of the coalition.
- A4. There is no difference in the incidence of international coalition formation between single and multiple purpose coalitions.
- A5. There is no difference in the incidence of international coalition formation by country.
- A6. There is no difference in the incidence of international coalition formation by industry.
- A7. There is no difference in the incidence of international coalition formation by legal form of the coalition.

Hypothesis B: Incidence of International Coalitions in Purchasing

- B1. There has been no change in the level of international coalition formation activity in purchasing activity from 1983 to 1988.
- B2. There is no difference in the incidence of international purchasing coalition formation by country.
- B3. There is no difference in the incidence of international purchasing coalition formation by industry.
- B4. There is no difference in the incidence of international purchasing coalition formation by legal form of the coalition.

Research Propositions

Stage two of the study used research propositions to explore the implications of international coalitional involvement on the purchasing function. The propositions, listed below, were stated in the positive case, in terms that the research expected to confirm. Propositions were not statistically tested due to the limited number of case studies. Conclusions regarding the propositions were drawn based on the weight of the evidence gathered.

Proposition A: Impact of International Coalition Activity on the Purchasing Function

A1. Role of Purchasing Activities/Responsibility

- A1a. Purchasing functions involved in coalitional international purchasing relationships will be responsible for a broad range of function-spanning activities.

Skill Requirements

- A1b. Purchasing functions involved in coalitional types of international purchasing relationships require a high level of communication, teamwork and cooperation skills.

A2. Strategic Positioning of the Purchasing Function Strategic Input

A2a. Purchasing functions involved in coalitional types of international purchasing relationships will have involvement and input into the strategic planning process of the firm.

Title/Organization

A2b. The organizational structure of purchasing functions involved in coalitional international supplier relationships will likely be a mix of centralized and decentralized organizations.

Attitudes

A2c. Purchasing functions which are involved in coalitional international purchasing relationships will perceive their status in the firm as high, on an equal level with other strategic functional areas.

Proposition B: The Nature of the Purchasing Functions Involvement in International Coalitional Relationships

B1. The nature of the purchasing function's involvement in international purchasing coalitions change over time.

B2. Purchasing becomes involved in international coalitions rather than domestic coalitions due to the inability of domestic firms to meet their needs.

Research Methodology

Overview

This research involved a two stage methodology. It combined the creation of a comprehensive international coalition database with a case study methodology to determine first what the mainstream coalition trends were, then to examine the implications of coalition activity on the purchasing function. The database was developed to provide current information regarding the extent of growth in formation and the nature of international coalitions/international supply chain management today. The case

study methodology was used as a tool to determine the implications of international coalition involvement on the purchasing function.

Stage One

The initial phase of this research was modeled after the 1986 study of international coalition activity performed by Ghemawat, et. al. Ghemawat's study spanned the time period from 1970-1982, and included all international coalitions formed during that time frame as reported in The Wall Street Journal. This study updated Ghemawat's study by forming a database which includes all international coalitions reported in The Wall Street Journal between 1983 and 1988, inclusive.

Ghemawat classified the purpose of coalition formation into five categories: technology, operations/logistics, marketing/sales/service, multiple and unclassifiable. In addition, this research expanded the five categories of coalition types above to further breakdown the operations category into operations, purchasing and logistics. This allowed a greater depth of understanding, and a separate analysis of purchasing coalitions.

These data were used in three distinct ways. First, the 1983-1988 data were mapped with Ghemawat's data. Linear regression analysis was used to determine whether or not a trend existed in international coalition formation. Other statistical tests were performed as appropriate to

determine trends and/or patterns by contractual form and purpose of the agreement.

Second, the 1983 through 1988 data on international purchasing coalitions were used to look for trends and patterns in the formation of international purchasing coalitions. Trends and patterns were tested using the appropriate statistical tests.

The third way in which these data were used was to help identify industries appropriate for inclusion in the survey. This was done through identification of industries which exhibited a high degree of coalition activity. The industries identified then served as a focus for identifying potential case study firms.

Stage Two

The second stage of this study involved the use of an exploratory case study methodology. An exploratory case study is ideal for a situation where little is known, and the purpose of the research is to gain an understanding of the phenomenon being studied. Stage two of the research looked specifically at international coalitional purchasing relationships. A purposive sample of six organizations was selected for in depth analysis and review of the purchasing function. The case study firms were selected based on The Wall Street Journal database, the literature review, and recommendations of knowledgeable people in the field and in academia.

Stage two of the research involved in depth personal interviews with one or more members of each organization. Those interviewed included only members of the purchasing function of firms involved in international coalitions. Those individuals who were interviewed were sent a copy of an advance, written questionnaire to be completed and returned to the researcher before the personal interview. The advance questionnaire provided background information and examined some of the key research variables. A copy of the written questionnaire and cover letter to those participating in the research is included in Appendix E.

In addition to the written questionnaire, each study participant was personally interviewed, in an attempt to gain an in depth understanding of issues related to international purchasing coalition involvement. These interviews ranged from one and one-half to three hours in length. A copy of the personal interview protocol is included in Appendix F.

The written questionnaire and personal interview protocol were pretested with two purchasing executives from different firms. Input was requested on both content and and format.

Responses from the interviews were used to assess the role of the purchasing function in implementing international coalitions, the role and strategic positioning of purchasing functions involved in international purchasing coalitions, and the nature of the

purchasing function's involvement in international coalitions. The role of purchasing in international supply chain management was explored in terms of key success factors in international coalitions, and barriers that have been or remain to be overcome. The role and strategic positioning of purchasing function's involved in international coalitional purchasing relationships was assessed by looking at such issues as the purchasing function's range of responsibility, skill requirements, input into strategic planning, status, and organizational structure. The nature of the purchasing function's involvement in international coalitions was evaluated in terms of the role which the purchasing played in international coalitions over time, and why an international coalition was chosen rather than a domestic coalition.

Assumptions and Limitations

Phase I of the study assumed that the Wall Street Journal reported virtually all international coalitions formed between 1983 and 1988. If The Wall Street Journal missed some coalitions it was assumed that they were missed with the same relative frequency from year to year. If the Wall Street Journal erred, it was probably on the side of over representing large coalitions, and coalitions involving a U.S. partner (Ghemawat et al. 1986). In addition, this study assumed that a classification scheme

consistent with the 1986 Ghemawat et al. study was used to capture the Wall Street Journal in comparing coalition formation over time, by purpose, and by legal legal form.

Another assumption of this research was that the formation of international coalitions is a reasonable way to represent the formation of an international supply chain. This assumption is based on the following three points:

1. A supply chain can involve any of the parties in the channel from extraction of raw materials through delivery to the end consumer.
2. Supply chain management involves managing the supply chain toward a common goal.
3. International coalitions bring partners together to work toward a common goal.

It is important to keep in mind that this study focused on international coalitions between businesses, and businesses and governments, not between governments, or domestic coalitions. The research results may not apply to domestic coalitions or coalitions between governments.

All of the conclusions based on hypothesis testing in stage one of the research were limited to those international relationships which were reported in The Wall Street Journal between 1970 and 1988 for hypothesis A1, and between 1982 and 1988 for the remaining hypotheses. In addition, conclusions were limited to those types of relationships which fit the criteria of an international coalition as defined in Appendix A. Thus, informal

agreements and understandings were explicitly excluded from this research.

In stage two, the intent of the research was to focus on the impact of international coalitional involvement on the purchasing function. It was specifically aimed at understanding the impact of international coalitional involvement, not other issues which may affect purchasing.

Second, this research looked only at purchasing functions involved in international purchasing coalitional relationships. This research did not look at purchasing functions involved primarily in adversarial or some other types of relationships. Thus, this research did not draw conclusions suggesting that the role of purchasing was directly related or affected by involvement in international purchasing coalitions as opposed to other types of purchasing relationships. Rather, this research suggested that when international purchasing coalitions are present, the preliminary conclusions provided from the analysis of propositions will tend to hold.

Measurement of the impact of international coalitional involvement on purchasing was assessed based on work content, skill requirements, strategic input, organizational structure and buyer's attitudes. These parameters were chosen because they provided a way to measure the impact on the key areas which may be affected. In addition, these parameters were assessed only from the perspective of the purchasing function of the firm.

Given the confidentiality of the individual responses and the participant firms, and the use of multiple informants in half of the cases, it was assumed that those participating in the case study were honest in their responses. Participation was strictly voluntary. There was no strategic reason for participants to misrepresent their firm.

Finally, in order to properly research the phenomenon of international purchasing relationships, and study each case organization in the depth it deserved, this study was limited to six organizations. Limiting the number of case study firms permitted detailed analysis of each organization. It may limit the applicability of findings to similar types of organizations.

Contributions of the Research

This research provides a number of contributions to understanding modern competitive relationships, and the implications of those relationships on the purchasing function. The research findings have potential implications to both theory and practice.

Implications for Theory and the Literature

The findings from this research have implications for better understanding economic and industrial organization theory regarding international coalitions as an alternative form of competition. The findings from this study shed light on the nature of international coalition

relationships and what makes international coalitions succeed.

Implications for Practice

This research has potential implications for three groups of practitioners: management in general, the purchasing function, and suppliers.

Implications for Management

The results of this research provide a number of implications for practicing business managers. First, the findings from this research contribute to an understanding of trends and patterns in international coalition activity in recent times. This could have important competitive implications for practicing managers.

In addition, the normative model for developing international coalitions created from this study may well have implications beyond the purchasing function, to any firm or function considering coalitional involvement. Given the attention that international coalitions receive in the popular press, a guide to developing international coalition relationships would likely be of interest to many managers.

Implications for Purchasing Practice

This research has five major implications for practicing purchasing personnel. This research contributes to understanding the magnitude and characteristics of international coalition formation, in general and in purchasing specifically. Information on international

coalition activity specifically related to purchasing is currently unavailable elsewhere. The research findings also have implications for the purchasing function in exploring the role of purchasing and the skills required when purchasing becomes involved in coalitional international purchasing relationships. Findings regarding the role and skill requirements of purchasing function's involved in international coalitional purchasing relationships may help purchasing managers anticipate changes in responsibility and skill requirements which may develop if their firm moves toward a coalitional approach to international purchasing relationships.

Third, the research contributes to understanding the strategic positioning of the purchasing function within the firm, when purchasing is involved in international coalitional relationships. The strategic positioning of the purchasing function of firms involved in international purchasing coalitions was explored in terms of the purchasing function's input into strategic planning, organizational structure, and perceived status.

In addition, the findings of this research have implications for the role that the purchasing function takes in establishing and maintaining international purchasing coalitions over time. The case study stage of the research explored the involvement of purchasing in international purchasing coalition relationships from pre-inception to maturity.

Finally, this study contributes to purchasing practice by developing a normative model, prescribing an approach to successful development and implementation of international coalitions in purchasing within the purchasing function of a firm. This model specifies five stages of evolution of international purchasing coalitional relationships, and explores key issues within each of those stages.

The normative development and implementation model was developed by integrating findings from the literature review with findings from phase one of the study with findings from phase two of the study. This links actual coalition activity with what has actually been done by firms which have been involved in international supply chain management directly involving the purchasing function of the firm. The model ties the two stages of the research together.

Implications for Suppliers

This research also has practical implications for suppliers or suppliers who are considering international purchasing coalition involvement. These implications are directly related to the implications for purchasing managers. Two findings from this research appear to be particularly relevant to suppliers. First, the research contributes to an understanding of the nature and magnitude of international coalition activity in purchasing and in general. This can benefit suppliers in setting strategy

and understanding competitive action. Second, this research investigates the character of international purchasing coalitional relationships. Knowledge of the key characteristics of international purchasing coalitional relationships can benefit suppliers seeking coalitional relationships with their customers.

Organization of the Study

This chapter provided an introduction and overview of this study. Chapter II provides a review of the literature relevant to this research effort. Chapter III contains the research design and methodology, including a definition of the key research variables as well as the research hypotheses and research propositions which this study examined. Chapter IV reports the results of the research in light of the hypotheses and propositions tested, and reviews additional relevant findings not specifically identified in the research hypotheses or propositions.

Chapter V concludes the dissertation by providing a summary of the research effort, and discussing conclusions drawn from Chapter IV findings. In addition, Chapter V presents the implications of the research as related to both theory and practice, and sets forth a normative model for developing and implementing international purchasing coalitions. Chapter V closes with suggestions for future research based on the findings of this study.

Following Chapter V is a brief glossary of terms. Included after the glossary is a series of Appendices, designed to aid the reader in developing a deeper understanding of the research design and methodology. The appendices include detailed definitions of certain research variables and data classification schemes, copies of the questionnaire and interview protocol used in the research, and a profile of each of the firms included in the case study.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

Chapter I presented the objectives of the research, a summary of the hypotheses to be investigated, and the methodology of investigation. This chapter will present a review of the literature upon which this research is based.

Chapter II begins with an examination of some of the industrial organization literature which provides a theoretical background for the concept of supply chain management. The industrial organization literature is reviewed as it relates to vertical integration and contractual relationships. Second, this chapter reviews the various definitions and synonyms for supply chain management found in the literature. The terminology examined includes a review of those terms specifically used to refer to supplier-buyer relationships. Third, this chapter summarizes the literature regarding the rationale, potential benefits and risks of supply chain management type relationships. The rationale, potential benefits and risks are examined first for supply chain management

relationships in general, then specifically for supply chain relationships as they impact the purchasing function.

Fourth, the key literature regarding the role and issues associated with the purchasing function's involvement in international purchasing will be summarized. Fifth, the literature review looks at previous studies of supply chain management activity. Findings from these studies will be reviewed in terms of the incidence and trends found in supply chain management relationships.

Following this review of the literature specific to international supply chain management and the purchasing function, a review of methodologies relevant to the design of this research is included. First, the methodologies that relate to stage one of the study, the international coalition data base, will be reviewed. Second, methodologies related to the case study portion of the research in stage two will be highlighted. This chapter concludes with a summary of how the literature reviewed relates to the research variables of interest in this study.

Section I- Review of the Industrial

Organization Literature

Supply chain management is not a totally new, revolutionary concept. Rather, it is a concept which has evolved over a number of years, and continues to evolve today, as demonstrated by the numerous definitions in

Section II. To develop a better understanding of where supply chain management fits on a competitive spectrum, this section briefly reviews the industrial organization literature related to the advantages and disadvantages of vertical integration and contractual relationships. As in the previous chapter, the terms supply chain management and coalition will be used interchangeably. This section closes by examining supply chain management as a form of competition as related to the literature regarding vertical integration and contractual relationships.

Vertical Integration

Clark (1961) defines vertical integration as the combination within a firm of functions that can be and usually are carried out by separate firms. There is widespread agreement in the industrial organization literature that vertical integration is undertaken for competitive reasons, although the competitive reasons given vary among authors.

Stigler (1951) discusses the idea that vertical integration may be undertaken out of necessity. Firms which are in young or declining industries may be forced to vertically integrate because the functions needed by these firms "... may be too small to support a specialized firm or firms" (1951, p. 133).

Advantages associated with scale are frequently cited in the industrial organization literature as contributing

to vertical integration. Clark (1961) writes that the primary advantage of vertical integration comes from increased size of the firm. As a firm becomes larger, they can gain productive economies in procurement, sales promotion, and distribution. Their network becomes large; they are no longer forced to go through intermediaries. Similarly, Coase (1937) points out that by performing a series of operations internally, the firm saves costs associated with open market transactions. The costs saved by vertically integrating, such as searching for and negotiating with suppliers, are termed marketing costs by Coase.

Bain (1968) agrees with Clark that increased market power, or scale, appears to be the most common reason for vertically integrating. Likewise, economies arise from eliminating profit paid to suppliers or customers for performing functions that are now performed internally. Bucklin (1966) further notes that vertical integration may be the only way for a firm to gain enough volume to effectively eliminate monopolistic pricing practices by suppliers.

Another advantage of vertical integration seen in the industrial organization literature is a reduction in operational uncertainty. Bain (1968) points out that even if integration doesn't impact technologically complementary processes, economies can result from improved coordination of output rates in successive stages.

Williamson (1975) agrees with the above reasons for vertical integration. Using a transaction cost perspective, Williamson points out that vertical integration is, "...mainly an internal organizational response to the frictions of the intermediate product markets...". He notes that vertical integration reduces uncertainty by creating convergent expectations; independent parties may make decisions which are incompatible. The concept of uncertainty is critical to Williamson's rationale for vertical integration due to the fact that human beings and organizations have bounded rationality. Bounded rationality, which implies limitations on human information processing, is an assumption of transaction cost theory. Bounded rationality means that one cannot possibly see and understand all of the potential implications and outcomes of complex problems. The inability to see the whole picture allows people and the organizations they represent to be taken advantage of in transactions by those who have a broader perspective or have more information.

Closely related to the vertical integration benefit of uncertainty reduction are the benefits of improved information flow and reduced opportunism. According to Williamson (1975), vertical integration has the advantage of reducing the probability of opportunism which can occur in the market. The concept of opportunism is further explained in the glossary. Opportunism can occur when a

firm has few potential trading partners (small numbers relations) and a trading partner strategically misrepresents information or intentions (Williamson, 1975). Williamson agrees with Bucklin (1966) and Bain (1968) that economies of information exchange can result from integration, because an internal communication mechanism and norms are in place.

The industrial organization literature points out that vertical integration is not without disadvantages. First, a relatively large volume/scale is required to achieve the benefits of vertical integration. In addition, the required volume level must be similar among related processes to provide balanced volume. Similarly, Dean (1951) notes that the technical and volume requirements for an efficient plant size at one stage of the production process may be very different from requirements at other levels. Differences in efficient volume requirements could create capacity incompatibilities between stages of the production process.

Bucklin (1968) also discusses the problem of balancing different scale economies for different phases of production. In addition, he notes that in some processes, it may not be possible to achieve scale economies for a single type of product. Thus, a firm must either diversify or sell outside. Both of these go beyond the intentions of vertical integration.

Further, at some point in an operation, scale may actually become a disadvantage. Bucklin (1968) and Coase (1937) believe that operational diseconomies of scale can occur due to vertical integration. Beyond a certain size, it is simply not feasible for management to effectively control the organization. As vertical integration increases the absolute size of the firm, lack of control becomes a hazard. Control may actually become worse than the market. Further, Bucklin notes that while vertical integration may improve communication, it may also hurt it, and/or make it more expensive. When vertical integration occurs, external lines of communication must be replaced by internal communication and authority. The latter set of costs is wholly absorbed by the firm, which may be more expensive than sharing communication costs with other channel members. In addition, just as channel members are physically separated, so may be functional areas of the firm. This may create the same types of information distortion and delay experienced in the external market.

Williamson also agrees with Bucklin's (1968) idea that diseconomies associated with vertical integration can occur as a firm grows. Bounded rationality limits the effective span of control within an organization. Growth also limits effective communication, creating distortion.

A final disadvantage is that a firm which is vertically integrated may become too insulated from competitive market pressures. This is a major disadvantage

in Williamson's eyes because a vertically integrated firm is "...unable to replicate the high powered incentives of the market", (1985, p. 403). The rewards within the firm are often less effective and less visible than those in the market. Fewer signals are picked up from the market, because the firm has less direct market interaction. Related to this, internal procurement generally becomes the norm, rather than just one alternative, without regard to cost. This fosters inefficiency, as internal parties "scratch each other's backs". Thus, firms may develop a size preserving tendency. Once a task has been performed internally, members of the organization want to retain it, or perhaps take on more responsibility. Members of the firm take ownership.

Harrigan (1985) agrees with the above disadvantages in internal costs and the risk of losing touch with the market discussed by Williamson. Related to this, vertical integration can be risky if it causes the firm to perpetuate obsolete processes, or links strong divisions with unhealthy adjacent businesses.

Jacquemin (1987) identifies the primary disadvantage of vertical integration as the fact that any central agent can only coordinate so much. The difficulty in coordinating and managing processes as the number of processes increases is identified by Coase (1937) as "diminishing returns to management". Therefore, as the

size of an organization increases, so does the risk of loss of control and internal inefficiency.

Contractual Relationships

The body of industrial organizational literature reviewed here does not specifically address supply chain management relationships or joint ventures, which according to the definition used in this research, are one type of supply chain management relationship. Industrial organization literature does, however, examine contractual relationships. While not all contracts involve joint ventures or supply chain management relationships, all joint ventures and supply chain management relationships included in this research involve a contractual commitment.

Contractual relationships are defined broadly here as relationships between two channel members which are bound by a legal agreement. The key distinction between contracts as defined here, and supply chain management/coalition type relationships is that coalitions involve a mutual sharing of information, risks and rewards, whereas this is not required in a contractual relationship. Thus, while a contract may also be a coalition if the requisite sharing is present, this is not necessarily the case.

Like vertical integration, contracting is a means of reducing uncertainty. Clark (1951) and Coase (1937) believe that the benefits of contracting include price

guarantees, and certainty of demand or supply. Williamson uses transaction cost theory to point out that group or contractual relationships "...are only valued by those who find market transactions less satisfying than non-market transactions", (1975, p. 45). According to Williamson, contractual and other "group" relationships tend to have the advantage of indivisibility of information and/or assets with partners. Information sharing can reduce costs and uncertainty.

Contractual relationships may be less risky than vertical integration because the firm is not concentrating as many assets in one place. Williamson (1975) points out that sharing assets, in terms of sharing the capital investment, or committing to a certain volume level also may reduce risk and uncertainty. Risk is therefore spread between channel members.

Harrigan (1985) sees contracting as attractive when a firm is reluctant to invest in specialized assets or wants to maintain a low breakeven point. Like Williamson, she sees contracting as a way to reduce the risk of ownership of specialized assets. In addition, contracting can be nearly as attractive as vertical integration if a firm has the bargaining power to arrange schedules with suppliers or distributors, "...as though they were extensions of the firm's assets" (1985 p. 77).

Contractual relationships can also create disadvantages for those firms involved. Clark (1951)

notes that contracting may create dependency. Unless potential competitors pose a threat at the time of contract expiration, contractual relationships may lose the competitive need to keep the other party satisfied. An additional type of dependency may be created if a supplier becomes very dependent on a customer for sales. If the customer is unwilling to accept the responsibility for that supplier, as though they were vertically integrated, the supplier is in a very dangerous, and in Clark's mind, unfair position.

Williamson (1975) draws on transaction cost theory to support Clark's theory of dependency. As contractual relationships develop, the supplier involved may become truly superior to other suppliers due to their experience, familiarity with the firm's business, and relationships established. The contractual relation may therefore evolve in to a "small numbers relationship", leaving the firm dangerously dependent and open to opportunism.

Williamson (1986) notes that the dilemma in contracting arises from the fact that it is in the interest of each contracting party to negotiate for terms most favorable to it. Self-interest encourages opportunism. Williamson maintains that this essentially creates a hostage situation, where one party has power over the other. Whether relative power is a disadvantage depends on whether the party with power uses it opportunistically, or to create a mutual commitment.

Both Harrigan (1985) and Jacquemin (1987) compare contractual relationships to vertical integration. Harrigan sees a disadvantage of contracting versus vertical integration as a real or perceived loss of control over the activity which is performed externally. It may be more difficult to manage and control, and more costly, because outside firms are receiving profit on the value which they add to the relationship. If tasks are performed internally, the firm can retain all the value-added and associated profit within the firm.

For Jacquemin, the very feature of contracting which creates the benefits- dispersion of tasks, also creates potential disadvantages. As activities are dispersed among parties, efforts may be duplicated, increasing costs. If central leadership is not present, separation of tasks among firms may create a lack of global perspective, so that it is difficult to assess total channel performance.

Supply Chain Management as a Form of Competition

Supply chain management offers an alternative to the more traditional forms of competition, such as vertical integration and contractual relationships. Depending on the legal form of the coalition agreement, supply chain management lies somewhere on the continuum going beyond routine contracting, but falling short of vertical integration. Supply chain management makes it possible to combine the benefits of vertical integration, such as

scale, improved communication and uncertainty reduction, with the benefits of contractual relationships, such as risk sharing and uncertainty reduction. Section III of this chapter discusses more specifically the rationale and benefits of supply chain management/coalitional types of relationships.

The industrial organization literature is clear in stating that new methods of organizing for competition arise only if they make sense in terms of organizational, competitive and environmental factors. As Clark points out, "Innovation is a joint resultant of the existing and the novel. Any act of innovation is, in its essence, an alteration of previous practice or a departure from it made with the facilities of the existing environment and under conditions and limitations posed by it", (1951, p. 182). This definition of innovation describes well what supply chain management is: It is an innovative form of competition based on the changing competitive environment. As discussed more fully in Section III of this chapter, factors contributing to this changed competitive environment include issues such as declining anti-trust enforcement, increasing global competition, maturing product markets, and shorter product life cycles.

The decision regarding, "Whether transactions were organized within firms or between autonomous firms depended on the transaction cost that attended each," (Williamson 1985, p.4). Similarly, Jacquemin (1987) notes that

organizational forms, "...occur under certain conditions where they reduce transaction costs versus the market, while avoiding certain organizational costs that occur if the transaction is totally internalized". The idea of reducing the costs of doing business on the open market, while reducing the costs and risks of performing all tasks internally appears to be an important basis for supply chain management.

Section II- Supply Chain Management Definitions

Supply chain management has numerous definitions and synonyms in the literature today. While there is some overlap between definitions, there are also differences. One author notes that "...a common terminology describing various supply chain relationships does not yet exist" (Johnston 1989).

Some of the terms used to describe supply chain management or coalitional relationships include coalitions, collaborations, strategic alliances, partnerships, and value-added partnerships. There are both similarities and differences in the way in which these terms are used, as discussed in more depth below.

In general, the definitions given for supply chain management types of relationships are not exclusive to international relationships unless preceded by the term international. Thus supply chain management definitions could apply to domestic as well as international

coalitions. A common theme in supply chain management definitions is that supply chain management is seen as a new form of competition. While the definition of supply chain management has not converged, it seems clear that coalitions are considered, "...a structural driver, not a fad" (Weimer et al. 1988).

Porter et al. (1986) defines a coalition as "...a long term agreement linking firms, but falling short of a merger." Note that the definition to be used in this research is more restrictive, requiring a sharing of risks and benefits.

Like Porter, Morris and Hergert (1987) define collaborative agreements by comparing them to other possible types of agreements. Morris and Hergert (1987) use the term collaborative agreements to describe,

"...an intermediate position along a spectrum of interfirm dealings encompassing arms-length transactions at one end and full mergers at the other...characterized by...shared responsibility, ...maintenance of individual identities, ...continual transfer of resources,...(and) indivisibility of the project...into independent sub-projects."

Shared responsibility and maintenance of individual identities are self-explanatory concepts. This definition requires further explanation in terms of continual transfer of resources and project indivisibility. By a continual transfer of resources, Morris and Hergert mean that "...partners provide inputs (funding skills, personnel) to the project on a continuing basis." Indivisibility of a

project requires that "...the total project cannot be broken down into independent sub-projects with well defined performance characteristics and interfaces." The definition of coalitions or supply chain management to be used in this research is encompassed within the ideas of shared responsibility, maintenance of individual identities and a continual transfer of resources. Project indivisibility is not required, and would likely be a difficult property to measure.

The definition of strategic alliances given by Jorde and Teece (1989) is more restrictive, more in line with the definition to be used in this research. Jorde and Teece (1989) define a strategic alliance as "... a bilateral relationship characterized by the commitment of two or more partner firms to reach a common goal, and which entails the pooling of specialized assets and capabilities." For purposes of this research, some pooling of risks and rewards is required to fit the coalition definition. However, for this research, the relationship does not necessarily have to be bilateral; the involvement of more than two parties does not change the underlying purpose of a coalition.

For Harrigan (1988), strategic alliance type of relationships such as, "...joint ventures, cooperative agreements, et cetera - are partnerships among firms that work together to obtain some strategic objective." Weimer et al. (1988) uses strategic alliances and strategic

partnerships interchangeably as a relationship which requires "...honest communication from both parties,...a shared, measurable goal and commitment on each other's part to achieve the desired end result: rapid global market penetration by maximizing needed partner resources."

Dwyer et al. (1987) focus on buyer-seller relationships as ongoing relationships rather than discrete events. The term relational exchange is used to define ongoing relationships which occur over an extended time horizon, are forward looking, built on trust, interdependence and mutual sharing. They develop a framework based on Macneil (1980), comparing twelve situational and process characteristics of discrete transactions to those of relational exchanges. Thus, this definition is more comprehensive and detailed than the other definitions discussed here. Relational exchanges are compared to a marriage. Dwyer et al. emphasize that such relationships are complex and multi-dimensional.

Houlihan (1985, 1988), Jones and Riley (1986) and Johnston (1988) share similar definitions for supply chain management. Jones and Riley (1986) define supply chain management techniques as dealing, "...with the planning and control of the total materials flow from suppliers through end users." Houlihan defines supply chain management as an approach which "...views the supply chain as a single entity rather than relegating fragmented responsibility,...(recognizes) supply as a shared objective

of practically every function on the chain,...(views inventory) as a balancing mechanism of last resort,...(and requires) integration, not simply interface." Similarly, Johnston uses the term value-added partnership as a "...set of independent companies that work closely together to manage the flow of goods and services along the entire value-added chain."

Houlihan, Jones and Riley, and Johnston's definitions are more specific than the definition to be used in this research in that coalitional activity is not limited to supply, but can include technology, marketing, and other activity, such as distribution. Further, while it would be ideal to have a shared objective throughout most of the supply chain, this research views coalitional relationships at various levels throughout the supply chain as a possible outcome of coalitions between individual firms. For example, rather than looking at many relationships in a single supply chain, such as supplier to carrier, supplier to buying firm, buying firm to carrier, and so on, this research focuses on relationships between supply chain parties at single links in many different supply chains, such as buyer-seller relations, and joint manufacturing agreements between firms.

Much of the recent literature, including some to be discussed later in this review appear to assume that a standard, well understood definition exists for coalition type relationships, in that this literature does not

provide definitions for terms like corporate alliance (Kraar 1989), strategic alliances (Ohmae 1989), coalition, partnership and consortium (Lodge 1989). Based on the above review of definitions, it appears that terms describing coalitional activity differ in degree, and should be clearly defined in order to prevent misunderstanding.

However, there are some common elements through most of the above definitions of supply chain management or coalitional relationships. These common elements are summarized below in Table 1.

TABLE 1

Common Elements in the Definition of Supply Chain
Management/Coalitional Relationships

Dimension	Characterized by:
Length of Relationship	Long-term
Form of Relationship	Lies between, but not including arms-length transactions and mergers
Focus of Relationship	Specific purpose, common goal
Financial Commitment	Sharing of risks and rewards
Nature of Interaction	Sharing of information, open communications Recognition of mutual benefits of cooperation and interdependence

Synthesized from: Porter and Fuller 1986, Morris and Hergert 1987, Jorde and Teece 1989, Harrigan 1988, Dwyer et al. 1987, Houlihan 1985, 1988, Jones and Riley 1986, Johnston 1988.

Coalition Definitions Specific to Purchasing

The growth in attention received by purchasing coalitions is evidenced by the number of articles which discuss and define coalitional type relationships in purchasing. As in the discussion of supply chain management or coalition relationships in general, preceding the terms discussed below with "international" narrows the definition to only international relationships.

Spekman (1988) discusses both the term strategic alliances and collaboration specifically as they relate to the purchasing function. Spekman states that, "Long term relations with a few suppliers, close interaction between a number of different functional boundaries, supplier proximity and blanket contracts signal partnership like interaction..." Spekman defines collaboration as a closer relationship, "...the process by which partners adopt a high level of purposeful cooperation to maintain a trading relationship over time." He goes on to explain that the relationship is bilateral, it has built in mechanisms for conflict resolution, is based on a win-win ideal and open channels of communication, and requires coordination of work, planning out into the future. Spekman's definition of collaboration is congruent with the definition of the coalitional type of purchasing relationship to be used in this research.

Leenders and Blenkhorn (1988) use the terminology reverse marketing to refer to "...an aggressive and

imaginative approach to achieving supply objectives. The purchasing function takes the initiative in making the proposal. The goal is to satisfy both short and long-term supply objectives." Leenders goes on to state that reverse marketing is a different purchasing philosophy, not just a technique. The success of reverse marketing requires a future orientation, and cooperation throughout all levels and most functional areas within an organization. Sharing of risks and rewards is negotiable, along a continuum from no sharing by the buyer, to complete assumption of risks and rewards by the buyer. This definition fits within the definition that this research will explore for the coalitional type of purchasing involvement in international relationships.

Shapiro (1985) discusses buyer-supplier partnerships and "purchasing as a conduit for innovation". Shapiro defines buyer-supplier partnerships as resting "...on long-term mutual dependency between a buyer and supplier who can guarantee high quality and fast, reliable delivery." This type of relationship is characterized by:

- Long-term relationships with few (relative to their U.S. competitors) suppliers.
- Close interaction between manufacturing, engineering, and design personnel of both buyer and supplier firms, with suppliers given not only the option of, but the responsibility for, redesigning components if warranted.
- Supplier proximity, both to allow rapid, often "just-in-time" delivery and, perhaps more important, to facilitate the close working relationships referred to above.

- Blanket contracts, with order releases often verbally communicated (without verifying paperwork to follow), especially to small suppliers.

In addition, the buyer seldom requires rebidding, and shares the responsibility for financing raw materials, equipment, and cost of excess inventory due to forecast error. Shapiro's definition is more specific than the definition used in this research in terms of requiring supplier proximity, blanket contracts and supplier design responsibility.

Shapiro's definition of "purchasing as a conduit for innovation" is even more specific and requires an even closer relationship between buyers and suppliers. Shapiro states that purchasing as a source of innovation is driven by "...the desire to take advantage of the best design concepts and technical expertise available worldwide." It involves an external focus, seeking out suppliers with design and engineering skills to design a better product than the buyer could. While this type of relationship would fit in to the definition which this research used for supplier coalitions, design is not a requirement for coalitional activity for this research.

Landeros and Monczka (1989) discuss five attributes which exist in "cooperative buyer/seller relationships".

These attributes are:

1. A supply pool consisting of one or a few preferred suppliers.
2. An alliance incorporating a credible commitment between the buying and selling firms.
3. Joint problem solving activities.
4. An exchange of information between the firms.
5. Joint adjustments to marketplace conditions.

The definition set forth by Landeros and Monczka is more specific than the definition used in this research in that it requires joint adjustments to marketplace conditions. It is congruent with the definition of purchasing coalitions used in this research in that a mutual sharing of risks and rewards could include joint adjustments to marketplace conditions.

Bevan (1989) uses the term co-makship as "...buyers and suppliers working together toward a common goal." This broad definition fits with the stage of purchasing involvement termed coalitional in this research. Bertrand (1985) defines strategic partnerships between manufacturers and buyers as involving a reduction in vendors, "...treating the remaining vendors as allies, sharing strategic information freely, and drawing on supplier expertise in developing new products that can meet the marketplace's quality, cost and delivery standards."

One theme that runs through many of the definitions of supplier coalition type relationships is the idea of sharing, working toward a common goal. While information in The Wall Street Journal announcing coalitions generally

does not provide enough detail to ascertain the degree of sharing and goal commonality, this aspect of the buyer-supplier relationship will be explored in the case study portion of the research.

Section III- Rationale, Benefits and Problems Associated with Supply Chain Management

Introduction

There is much current literature that discusses the rationale, benefits and pitfalls of coalitional types of relationships. This section of the paper will first discuss the rationale for supply chain management in general, then purchasing coalitions specifically.

Rationale for Supply Chain Management

Numerous reasons are given as a rationale for supply chain management type relationships. There is much overlap among these rationales. Porter (1986) sees the primary rationale for international coalitions as the strong tie of international competition. Certain trends in particular are strong forces in global competition, such as growing similarity between countries, fluid global capital markets, falling tariff barriers, technological restructuring within many industries, the role of new technology in integrating firms and functions even at a great geographical distance, and the growth of new global competitors. While these factors have intensified international competition, Porter

sees another set of factors as changing the nature of international competition. These factors include slower economic growth, greater difficulty in sustaining comparative advantage, more subtle forms of protectionism, such as local content laws, the growth of international coalitions, new government inducements for foreign investment, and a growing ability, through new technology, to readily tailor products to local conditions.

Jorde and Teece (1989) see the forces driving coalitional activity as twofold. First, increased international competition is forcing firms to look at new ways to compete globally. At the same time, a new type of corporate relationship, interfirm agreements involving coordination and cooperation, are being seen as a viable form of competition, rather than as an impediment to competition, as was the case historically.

Lodge and Walton (1989) see the transition to supply chain management type relationships as occurring due to the clear benefits of what they term partnerships, coalitions and consortiums. These benefits will be discussed in the next section.

Morris and Hergert (1987), list a number of reasons for the popularity of international collaborative agreements. These include capital requirements greater than one firm can absorb, economies of scale beyond the scope of a single firm, emergence of global products, desire to share risk, desire to enter new geographical

markets, utilization of excess capacity, and finally, growth of production modularity, which offers easier division of production responsibility between partners.

Other reasons given for forming global coalitions are defensive, such as the ability to monitor competitive activity, the ability to better compete domestically, and the belief that global coalitions may be the only option for niche oriented firms to find a market (Kraar 1989). Another set of frequently cited reasons for international coalition formation is increased globalization and world competition, new technology development and shorter product life cycles (Weimer et al. 1988). Ohmae (1989) notes that, "Globalization mandates alliances, makes them absolutely essential to strategy." He states that this is the case because there is a convergence of customer needs and preferences worldwide; all want the best products available at the lowest prices possible.

Harrigan (1987) sees joint ventures and other forms of alliances as popular due to "...changes in the skills needed to survive in the firm's competitive environment ...due to the accelerating pace of technological change and broader range of technological capabilities a firm must possess." Both Houlihan (1986, 1988) and Jones et al. (1986) also see the impetus for supply chain management as competitive pressure. Houlihan notes that changes in the competitive and economic environment driving supply chain

management include higher interest rates, slower growth and greater demand uncertainty.

Johnston and Lawrence (1988) see the force behind value-added partnerships as competitive, but from a different perspective, because they see value-added partnerships as an organizational form used primarily by smaller organizations. Johnston and Lawrence see value-added partnerships as a natural defense for smaller firms to work together, coordinating activities throughout the value-chain, as facilitated by inexpensive communication and computing technology. Such partnerships allow small companies to join forces to compete against large companies who enjoy scale economies.

The common reasons for coalition formation fit in to the broad categories of technology, operations, logistics, marketing, purchasing, and other. An underlying theme throughout the works of these various authors is the idea that changing competitive environments, in many cases world competition specifically, is the driving force behind this new type of competitive relationship. Thus, this research focuses on international coalitions.

Benefits of Supply Chain Management in General

This section will summarize the literature regarding the benefits of supply chain management type relationships. There has been little empirical testing of these benefits

on a large scale; most of the benefits have been gathered from anecdotal information and case studies.

The benefits from international coalition relationships follow closely from the impetus for such activity. Porter sees the benefits of coalitions as falling into four classes:

- ... (G)aining economies of scale or learning by concentrating the activity within one entity to serve both firms.

- ... (A)cquiring, pooling or selling access to the knowledge or ability to perform an activity where there are asymmetries between firms.

- ... (A) mechanism for hedging risk because neither partner bears the full risk and cost of coalition activity.

- ... (S)haping competition, because coalitions can influence who a firm competes with and the basis of competition.

Ohmae (1989) also sites broad benefits of international alliances. He points out that rapid technological proliferation makes it impossible for one firm to effectively compete alone, and, "...operating globally means operating with partners- and that in turn means a further spread of technology."

Further, Ohmae (1989) and Gross and Neuman (1989) note that global operations create large fixed costs, which are more profitably spread among partners. As Ohmae further points out, forming coalitions, "...are often the fastest, least risky, and most profitable way to go."

Jorde and Teece (1989) cite the benefits of interfirm cooperation more narrowly, to include stimulation of

greater research and development investment through partnering, eliminating duplicated, wasteful research efforts through coordination and cooperation and a reduction of uncertainty in the competitive environment. Lodge and Walton (1989) see the benefits of supply chain management relationships as, "...increased innovation, lower costs, better product quality, and flexibility in adapting to changes in the marketplace and the larger environment."

Morris and Hergert (1987) note, "...strategic advantage as well as economic necessity..." as both the benefits and the impetus for international collaboration activity. Kraar (1989) states more specifically that alliances may be formed to "...lower costs and risks of high tech product development...", get maximum benefits from economies of scale, and to get to market less expensively and faster than alone.

Another frequently cited benefit of coalition formation is the ability to more effectively and efficiently penetrate and gain a presence in foreign markets (Gordon 1989, Kraar 1989, Ohmae 1989). Gordon (1989) and Hamel et al. (1989) also see a benefit from coalition formation as the ability to block, and perhaps preempt competitors, turning them in to allies.

Thus, the benefits of supply chain management vary depending on the reasons that the coalition was formed. The benefits can be broad and strategic or specific and

narrowly focused. A recurring theme is that forging of coalitions may provide a more effective and profitable way to compete than going to market alone. Yet international coalitions are not without their problems, as discussed in the next section.

Difficulties in Establishing Supply Chain Management

The instability of international coalitions is apparent in the vast number of coalitions that fail or are dissolved (Morris and Hergert 1987). In a 10 year study by Harrigan (1988) ending in 1985, only 45% of the international and domestic coalitions which she studied were ongoing at the end of 1985. Additionally, only 45% of these ventures were mutually judged as successful by the coalition partners. The literature indicates that certain factors seem to add to the stability and success of coalitions. This section reviews the literature regarding potential hazards and pitfalls in coalition formation.

First, many authors point out that coalitions should be mutually beneficial (Porter and Fuller 1986, Ohmae 1989, Johnston and Lawrence 1988). In addition, several authors note that coalitions should be confined to strategically important or beneficial areas. Different levels of importance require a different strategy.

As pointed out by Walker (1988), the more strategic the technology, assets or function which the firm shares with or transfers to a partner, the greater the risk.

Thus, care must be taken when strategic activities are performed externally. Walker specifically discusses three types of risk: appropriation risk, diffusion risk and degradation risk.

Appropriation risk occurs when a firm becomes highly dependent on a trading partner due to the trading partner's specialized assets, expertise, high switching costs or similar reasons, and the trading partner opportunistically overprices the good or service. Diffusion risk occurs when a firm shares strategically critical technology, assets or information with a trading partner, and the trading partner shares or transfers the strategic technology, assets or information with other firms. The firm who originally possessed the unique strategic advantage loses that advantage as competitors have the ability to imitate that advantage.

Finally, according to Walker, degradation risk can occur when a firm uses outside parties to market, distribute and/or sell its products. Degradation occurs when the trading partner distorts, ignores or otherwise impairs important attributes of the firm's product in the distribution, marketing and/or sales function in order to reduce costs.

Further, the literature indicates that supply chain management types of relationships do not fit every situation. Coalitions should be confined to relatively important areas, where commitment makes a difference in

performance, and competitive leverage is possible. Each partner should make a unique contribution to the coalition relationship (Gross and Neuman 1989). Likewise, Johnston and Lawrence (1988) note that value-added partnerships should focus on areas where "... (a) player in the value-added chain has a stake in the other's success." Where a vendor of materials or services offers no distinct advantage, arms-length transactions or routine contracts should be maintained, focusing on price discounts for large volume (Barry 1989).

Further cautions are given in the literature regarding the nature of coalition agreements. While coalitions may be an attractive form of competition, they are not an easy, quick-fix. Ohmae (1989), Hamel et al. (1989) and Lodge and Walton (1989) point out that coalitions are long-term, strategic relationships which must be carefully defined, developed and understood to prevent unreasonable expectations. Some authors believe that a contract which is flexible in nature is critical in coalition formation (Ohmae 1989, Kupfer 1988). There should be flexibility to allow for contingencies, or even to end the relationship.

There is also the risk of choosing the "wrong" coalition partner; one who doesn't develop leading edge technology, or follow a strategic direction similar to the firm (La Londe and Cooper 1989). Costs of switching partners could be high, and disruptive to the channel. To avoid choosing the wrong partner, a good understanding of

expectations should be developed prior to forming a coalition. In addition, close working relationships and good two-way communication can reduce the risks of incompatibility once a coalition has been formed (La Londe and Cooper 1989).

One danger and criticism of coalition involvement which has been raised is that the benefits may be very one-sided, with the loser giving away strategic information in exchange for some short-term operating benefits (Kupfer 1988, Hamel et al. 1989, Reich and Mankin 1986). This criticism is countered by noting that coalitions should involve a specific purpose, and specific performance criteria, reducing the potential for misunderstanding and unequal benefits (Kupfer 1988, Hamel et al. 1989). Along these same lines, the benefits to the coalition partners should be similar in nature and duration or the coalition will breakdown after one party receives its benefits (Hamel et al. 1989, Porter and Fuller 1986).

Success Factors in Establishing Supply Chain Management Relationships

Many authors have come up with almost cookbook-like approaches to describe the factors which are key in making international coalitions work. These approaches are summarized below.

Porter and Fuller (1986) suggest that there are six key criteria for successfully selecting a long-term coalition partner, as follows:

- Possession of the desired source of competitive advantage.
- The need for a complementary or balanced contribution from the firm.
- A compatible view of international strategy
- Low risk of becoming a competitor.
- Preemptive value as a partner vis-a-vis rivals.
- Organizational compatibility.

Ohmae's (1989) prescription for success in coalitions is compatible with Porter's. It is broken down into twelve steps, as shown in Table 2.

The remaining strategies for successful coalitions which are reviewed here are not as detailed. Hamel et al. (1989) suggest four "powerful principles" to follow to benefit from collaboration. First, given that collaboration is just a different type of competition, caution must be taken not to give more than the relationship requires. Second, an occasional conflict may be mutually beneficial to the relationship. Third, companies should be aware of competitive compromise, recognizing the limits of cooperation. Finally, learning from collaboration partners is critical as a means of building organizational skills.

TABLE 2

=====

DO'S FOR SUCCESSFUL COLLABORATION

1. Treat the collaboration as a personal commitment. It's people that make partnerships work.
2. Anticipate that it will take management time. If you can't spare the time, don't start it.
3. Mutual trust and respect are essential. If you don't trust the people you are negotiating with, forget it.
4. Remember that both partners must get something out of it (money, eventually). Mutual benefit is vital. This will mean you've got to give something up. Recognize this from the outset.
5. Make sure you tie up a tight legal contract. Don't put off resolving unpleasant or contentious issues until "later." Once signed, however, the contract should be put away. If you refer to it, something is wrong with the relationship.
6. Recognize that during the course of a collaboration, circumstances and markets change. Recognize your partner's problems and be flexible.
7. Make sure you and your partner have mutual expectations of the collaboration and its time scale. One happy and one unhappy partner is the formula for failure.
8. Get to know your opposite numbers at all levels socially. Friends take longer to fall out.
9. Appreciate that cultures-both geographic and corporate-are different. Don't expect a partner to act or respond identically to you. Find out the true reason for a particular response.
10. Recognize your partner's interests and independence.
11. Even if the arrangement is tactical in your eyes, make sure you have corporate approval. Your tactical activity may be a key piece in the overall strategic jigsaw puzzle. With corporate commitment to the partnership, you can act with the positive authority needed in these relationships.
12. Celebrate achievement together. It's shared elation, and you'll have earned it!

=====

(Ohmae 1989)

Kraar (1989) has a simple list of "alliance dos and don'ts", comprised of:

- Don't rush into it.
- Make sure both sides stand to win.
- Don't micromanage.
- Don't stab your partner in the back.
- Tell him only what he needs to know.

Lodge and Walton (1989) give five prerequisites to effective collaborative relationships. First, those involved in the change must fully understand the system being changed, implications of the change, and make a commitment to the change. Second, because the change will be difficult, the motivations to change must be high in terms of economic incentives. Third, managers must be aware that old attitudes and beliefs can threaten innovation. Fourth, collaborative relationships, "...will require redefinition of both the role and the function of government, business, and unions". Fifth, and the authors note perhaps the most important aspect of change, is the need for competent managers to lead the transition in collaborative relationships.

Gross and Neuman (1989) point out that successful alliances require new ground rules. Given that each party has something unique to contribute, the relationship should share power and control. A successful coalition requires

trust and commitment, and adjustment to the other company's culture.

McKeon (1988) lists a number of "ingredients for successful partnerships." These ingredients include a commitment across organizational ranks, mutual satisfaction of needs, strong communication networks within and between organizations, flexibility, organizational and cultural compatibility, sharing of goals, information and technology, clear roles and expectations, methods to measure effectiveness of the coalition, and freedom to reposition the coalition.

Johnston and Lawrence (1988) and Houlihan (1985) have a somewhat different perspective on what it takes to make supply chain management work, because they see supply chain management as encompassing all of the supply chain. For Johnston and Lawrence and Houlihan, the key to successful supply chain management relationships is that all members of the supply chain share a superordinate goal- effectively managing inventory throughout the supply chain. A strict inventory focus is a much more narrow perspective than the other coalition perspectives discussed above, which may not directly involve inventory.

The above models for success share many common threads. These commonalities are summarized in Table 3.

TABLE 3

 SUMMARY OF FREQUENTLY CITED KEY SUCCESS FACTORS IN
 COALITION RELATIONSHIPS

Nature of contributions

1. Mutual benefit
2. Mutual contribution
3. Flexibility in agreement

People issues

1. Cultural compatibility
2. Appreciation and awareness of the other firm's culture
3. Mutual respect and trust
4. Commitment of people to the coalition

Interaction

1. Commitment of time to making the coalition work
2. Recognition of interdependence
3. Recognize the limits of cooperation; don't give more than required
4. Firms have shared goals for the coalition
5. Strong communication

 Taken from: Kraar 1989, Gross and Neuman 1989, McKeon 1988,
 Lodge and Walton 1989, Ohmae 1989, Hamel et al. 1989.

Rationale for Supply Chain Management Relationships in Purchasing

In dealing with a specific type of supply chain management relationship, such as purchasing coalitions, it was expected that the reasons for forming such a relationship would also be more specific. This section will review the rationale for supply chain management relationships in purchasing.

Landeros and Monczka (1989) see cooperative buyer/seller relationships arising as a way for the purchasing function to better support the strategic posture of the firm. Cooperative buyer/seller relationships allow procurement to tailor the focus of the relationship towards the firm's strategic priorities.

Shapiro believes that the firm's procurement policies are receiving more attention because purchased items are a growing cost of manufacturing, 60% of the total cost of operations in 1980, versus 50% in 1950. Shapiro (1985), Leenders and Blenkhorn (1988), Spekman (1988) and Bevan (1989) point out that collaborations in purchasing are driven by the buyer's recognition that they are dependent upon their suppliers for quality and state-of-the-art technology. Shapiro (1985) notes that what he defines as a partnership between buyer and supplier is driven by mutual dependency, recognizing that working together is the best way, "...to produce defect free products at minimum total operating cost."

Shapiro sees the impetus for what he terms "purchasing as a conduit to information" broadly, as "...the desire to take advantage of the best design concepts and technological expertise available, worldwide." The technology and design focus fits with Bertrand's explanation of the driving force behind strategic partnerships between manufacturers and suppliers as, "...drawing on supplier expertise in developing new products that can meet the marketplace's quality, cost and delivery standards." Leenders and Blenkhorn (1988) concur with the importance of utilizing supplier expertise, adding that just-in-time manufacturing, the desire for continual improvement, economic, political and social change are all driving factors in forming close supplier relationships.

Benefits of Supply Chain Management in Purchasing

There is some overlap of the benefits cited in the literature for coalitions in general, and purchasing coalitions. Technology sharing, or benefitting from supplier technology is frequently cited as a benefit of forming purchasing coalitions (Bertrand 1986, Shapiro 1985, Spekman 1988, Landeros and Monczka 1989) and non-purchasing specific coalitions.

Improved quality and cost competitiveness are also cited by several authors as important benefits deriving from purchasing coalitions (Bertrand 1986, Bevan 1989, Burt 1989, Spekman 1988, Landeros and Monczka 1989). Shapiro

(1985) and Bertrand (1985) also see risk-sharing and increased supplier loyalty as advantages of purchasing coalitions.

More specific benefits derived from purchasing coalitions are given by Spekman (1988) as joint forecasting, better communication, improved interfirm and intrafirm interaction, and mutually beneficial long-term planning. Bevan (1989) and Leenders and Blenkhorn (1988) also note additional benefits from purchasing coalitions as shorter and more reliable delivery lead times, lower stock levels, higher order priority, faster design change implementation, and competitive, stable prices. Leenders and Blenkhorn (1988) add that coalitional relationships can be a valuable resource in terms of information on trends, prices and competitors. These benefits are not necessarily unique to purchasing coalitions.

Difficulties in Establishing Supply Chain Management Relationships in the Purchasing Function

Many of the same difficulties would be expected in establishing supply chain coalitions in purchasing as are present in establishing supply chain coalitions in other areas. This section will examine the literature as it relates specifically to purchasing coalitions.

First, properly establishing where relationships would be most beneficial is important. Partnering does not make sense for commodity-like items where one vendor offers no

distinct advantage over another (Barry 1989). Identifying these leverage points may be difficult (Spekman 1988). In addition, it may be very difficult to change traditionally adversarial relationships into collaborative relationships for a number of reasons. There may be past attitudes and perceptions to overcome (Spekman 1988), a focus on price rather than total cost (Burt 1989), a lack of understanding of how to select suppliers in a non-adversarial setting (Spekman 1988), cultural differences, and a focus on changing procedures rather than attitudes (Bevan 1989).

Further, some buyers want to shift responsibility for improving the relationship to the suppliers, rather than sharing the responsibility (Spekman 1989). These organizations do not want to reduce the number of suppliers or change the competitive bidding process; they simply want to shift the selection criteria from price to quality or another factor (Spekman 1988, Shapiro 1985). Under these circumstances, coalitions cannot occur because sharing does not exist.

Walker (1988) notes that there are a number of specific risks that can result when a buyer becomes dependent on a supplier, as could occur when a buyer limits their sources of supply. The risks specific to purchasing dependency are diffusion risk and appropriation risk. Diffusion risk can occur if a vendor shares the buyer's proprietary technology with other customers, potential

competitors of the firm. Loss of proprietary technology can cause the firm to lose its competitive advantage. Appropriation risk occurs when the vendor, recognizing the buyer's dependence, becomes opportunistic and charges the buyer an unfairly high price.

Success Factors in Establishing Supply Chain Management Relationships in Purchasing

To overcome the problems discussed above in forming purchasing coalitions, several authors have developed recommendations specifically for purchasing coalitions. These approaches share some of the characteristics found in establishing successful coalitions in general. These approaches are summarized below.

Spekman (1988) suggests a two stage approach to selecting a strategic partner. Before beginning the process, the firm must establish which, "...strategic resources would benefit from the advantages of closer ties to a single supplier," in terms volume and quality requirements. With critical commodities identified, the firm should enter the first stage of partner selection, narrowing down potential vendors based on past performance, future plans and quality and technical capabilities. Once the field has been narrowed, strategic partner analysis should be undertaken. Strategic partner analysis involves looking at technical capabilities of the partner, but also establishing a level of managerial comfort regarding the

proposed partner's future behavior, willingness to share, and openness. Spekman (1988) notes there are many intangible issues that affect partnership viability, such as trust, openness, and commitment.

Bertrand (1986) gives several examples of factors that are key to forming and maintaining buyer-supplier coalitions. A key idea is that the buyer should seek added value from the vendor in strategic relationships. Bertrand suggests that as a first step, it is important to reduce the number of suppliers; a firm can simply not maintain good relationships with a huge supplier base. A buyer needs to understand the vendors capabilities and work to utilize those capabilities. Second, sharing forecasts with vendors will help the vendors to anticipate needs and respond better. Trust is important in the ability to share information. In addition, Bertrand recommends that communication should extend beyond formal meetings and encompass many levels and functions at both the buyer and vendor firm. Bertrand's factors are similar to the attributes of cooperative buyer/supplier relationships noted by Landeros and Monczka (1989).

Bevan (1989) points out that establishing successful purchasing coalitions, "...involves changing attitudes, strategy and operating practices." In order to make those changes successful, Bevan recommends internal and supplier education and training regarding the coalition, rather than just communicating the new philosophy. If resources are

not available, choosing coalitions in important areas with a high probability of success is recommended. In order to maintain successful relationships, Bevan recommends the following detailed changes presented in Table 4.

Based on Table 4, it is clear that Bevan believes that multiple changes at all levels of the firm are required to successfully implement and maintain purchasing coalitions.

Shapiro's (1985) definition of the partnership model in purchasing relationships lays out the characteristics of successful coalitions. These include long-term relations with a limited number of suppliers, close interfirm interaction between design, manufacturing and engineering, supplier proximity, blanket contracts with verbal releases and without annual rebidding, and buyer financing of specialized assets and excess inventory caused by a change in buyer's plans. Shapiro also points out that a key to making a supply coalition work over time is that vendors believe they are compensated and treated equitably. Thus, execution of the relationship is critical.

Leenders and Blenkhorn (1988) have an eleven phase model for implementing coalition relationships in purchasing, which they term reverse marketing. A summary of Leenders model is reproduced in Table 5. This model specifies the steps which are required across many levels

TABLE 4

CHANGES REQUIRED OF BUYERS AND SUPPLIERS TO IMPLEMENT CO-MAKERSHIP
<u>Attitude Change and Persuasion</u>
Identify buyers who are:
-Reliable and credible
-Demonstrate an understanding of suppliers problems
<u>Strategy Changes</u>
-Overall objective of purchasing must be changed from lowest price to lowest total cost to the firm.
-Define suppliers who can meet the new objectives; develop sourcing strategies.
-A gradual move toward single-sourced, long-term contracts to provide suppliers with the incentive to invest and innovate for the buyer.
-Develop scheduling which provides for supplier stability within a certain range.
-Purchasing must consider engineering and design needs in sourcing.
<u>Operating Changes</u>
-Update procedure manuals.
-Change the information system to support new priorities and objectives.
-Buyers need to be educated in the vendor's manufacturing process.
-Specifications and quality expectations are clearly laid out in advance.
-Vendors are involved early in design and development.
-Suppliers are given advance forecast information.
-Purchase orders are sent as early as possible.
-Payments and invoicing are timely

(Bevan 1989)

TABLE 5

PHASES IMPLEMENTING IN THE REVERSE MARKETING PROCESS	
PHASE	PURPOSE/OBJECTIVES
1. Fundamental research	Assess general need and potential
2. Specific research	Identify specific requirements and target vendors
3. Key decision point	Decide whether or not to use reverse marketing
4. Design	Determine objectives, strategies and plan
5. Organizational support	Obtain internal acceptance for design
6. Design Review	Review and prepare management team
7. Negotiation	Put proposal to vendor
8. Agreement in principle	Make deal verbally
9. Written agreement	Put deal in writing
10. Contract administration	make the agreement work
11. Reverse marketing options	Terminate or change the reverse marketing agreement

(Leenders and Blenkhorn 1988)

and functions within the buying organization, in order to implement "reverse marketing".

In summary, there are many factors in the literature which have an impact on the success of purchasing coalitions. These factors are summarized in Table 6. These factors supplement the success factors given for coalitional relationships in general, rather than replace them.

Table 6

FREQUENTLY CITED SUCCESS FACTORS IN INTERNATIONAL PURCHASING COALITIONS	
NATURE OF CONTRIBUTION	
1.	Partner should provide "added-value" versus other suppliers
2.	Objective should be a total cost perspective, not price
3.	Choose a key item or items
PEOPLE ISSUES	
1.	Mutual trust and openness
2.	Reduction in the number of suppliers used
INTERACTION	
1.	Communication occurs at many levels and functions between firms
2.	Vendor is informed of and involved in changes and new product design early
Synthesized from: Spekman 1988, Bertrand 1986, Landeros and Monczka 1989, Bevan 1989, Shapiro 1985, and Leenders and Blenkhorn 1988.	

Section IV- Review of the Literature Related to the
Purchasing Function's Role, Skill Requirements and
International Involvement

Introduction

The motives cited for international purchasing tend to focus on quality, service/availability and price considerations (Scheuing 1989, Leenders et al. 1989). This section of the literature review will discuss the literature concerning the impact of international purchasing on the role and skill requirements of the purchasing function, and key barriers to foreign sourcing. Note that the literature to be reviewed here does not look at different types of international relationships. Rather, this literature examines the implications of international as opposed to domestic purchasing coalitions on the purchasing function.

Impact on the Purchasing Functions' Role

There has been little research conducted which examines the impact of international involvement on the role of the purchasing function specifically. Anderson (1987), in looking at the impact of international trade on logistics functions, found that the purchasing function manages international inbound logistics for raw materials and components more frequently than any other functional area. In 43% of companies surveyed, purchasing managed inbound logistics for raw materials. In 50% of companies

surveyed, purchasing managed inbound logistics for components. Purchasing even managed inbound logistics for internationally purchased finished products in 28% of the companies surveyed. Thus, it appears that purchasing plays a major role in arranging inbound logistics for international purchases.

Impact on the Purchasing Functions' Skill Requirements

In a study of 26 large leading edge international firms, Monczka and Giunipero (1984) found that certain skills and knowledge requirements were key to successful implementation of international purchasing. These key areas included:

1. Overall development of international purchasing skills
2. Knowledge of exchange rates
3. Understanding of the foreign market and its opportunities
4. Development of communication skills
5. Foreign supplier qualification methods
6. Development of general methods to deal with foreign suppliers

In addition, Monczka and Giunipero (1984) found that lack of the following skills or knowledge areas created problems in establishing international purchasing:

1. Lack of working knowledge about foreign business practices and international sources
2. Language differences affecting communication
3. Lack of working knowledge about duty/customs regulations

Purchasing World (1987) found that knowledge of intermodal flows, shipment control technologies, and trade barriers in sourcing areas are important for purchasing managers participating in international sourcing.

Barriers to Successful International Purchasing

There is more literature on barriers to international purchasing than there is on the impact of international purchasing on the purchasing function. Many of the authors cite common barriers.

Language differences are one obvious barrier that may create relationship problems; many words and expressions do not have direct translations (Mendonsa 1987, Leenders et al. 1985, 1989, Monczka and Giunipero 1984, Scheuing 1989, Burt 1984). Exchange rate differences can create issues as well, in terms of which country's currency to use (Burt 1984), and currency fluctuations which increase the risk of the transaction (Leenders et al. 1985, 1989).

The sheer distance of international relationships also creates unique problems. It may be more difficult to evaluate sources at a great distance, and to manage the logistics flow and inventory levels (Monczka and Giunipero 1984, Leenders et al. 1985). Lead times may be long, and very unpredictable due to customs or the country's transportation infrastructure (Scheuing 1989, Leenders et al. 1985). Documentation of international shipments is currently very complex, as are customs regulations and duties (Burt 1984, Scheuing 1989). Further, nationalism and changing trade laws may make long-term international supply agreements difficult (Monczka and Giunipero 1984).

Quality specifications and clear communication of expectations becomes critical in long-distance

international relationships. Acceptable quality and clearly understood specifications are key due to the time and cost of defects and misunderstood specifications (Burt 1984, Leenders et al. 1985).

Cultural differences are seen as one of the greatest barriers to international purchasing by many authors (Mendonsa 1987, Leenders et al. 1985, 1989, Monczka and Giunipero 1984, Scheuing 1989, Burt 1984). Some cultural problems relate to values and customs, while others relate to ethical practices, decision making patterns, and levels of authority and commitment. Many of these customs are very subtle, and unknowingly violating them may destroy an otherwise lucrative relationship (Scheuing 1989).

Section V- Summary of Previous Studies on International Coalitions

Introduction

This section of the literature review deals with previous empirical studies of the incidence and nature of international coalition relationships. The first part of this section deals with studies that are limited in scope by type of relationship, or type of industry. The second part of this section deals with international coalition studies that cut across industries and legal forms of relationships.

Literature on Specific Industry or Forms of Coalitions

This section reviews four studies of international coalition activity that in some way examine the trends and/or patterns in international coalition activity. The primary focus of the studies reviewed in this section was joint venture activity. Joint ventures are just one form that a coalition may take, so that the relationships examined in this section are narrower in scope than the relationships studied in this research.

Gomes-Casseres

This study by Gomes-Casseres (1988) examines how joint venture activity has changed over time, looking at the period from 1945-1975. The data are based on over 5000 foreign manufacturing subsidiaries of 180 United States-based Fortune 500 companies.

Gomes-Casseres found that analysis of share of joint ventures in relation to total new manufacturing activity indicated a steady rise from 1900 to 1960. However, there was a sharp drop in joint venture activity in the 1960's. Further, Gomes-Casseres found that using three year moving average, shares of joint venture in manufacturing subsidiaries from 1946 through 1975 has followed two-and-a-half year cycles. The findings of this research suggest that "...the cycles may have been generated by systematic and closely related changes in corporate strategies...(and) the increasing use of cooperative strategies being reported

today may be only one stage in a process that could well reverse itself in the future". Thus, this research does not support the notion that joint venture activity is clearly on the rise. However, the data studied end in 1975.

Kobrin

Kobrin (1988) reports results of a 1986 survey which examines the ownership patterns of large United States based firms in developing countries. This study "...conclude(s) that there has not been a significant increase in the proportion of joint ventures in manufacturing subsidiaries of U.S. manufacturing firms in the developing countries in the past two decades." Kobrin compares 1985 data to Harvard Business school data from 1966 and 1975. Kobrin does point out that this study only considers United States ownership patterns, which may not be indicative of European and Japanese ownership patterns.

Harrigan

Harrigan's 1985 study of U.S. firms involved in joint venture activity in the United States and abroad also examined non-joint venture cooperative agreements. The interest in non-joint venture agreements was to determine why the joint venture form was not chosen. Harrigan looked at agreements in capital intensive industries, those

involving differentiable products, high technology industries, and global industries.

In regard to the form of agreement in global industries, Harrigan found that global firms seek less formal means of cooperation than joint ventures, such as licensing and cross-marketing agreements, whereby firms market each other's products. It was concluded that less formal arrangements are preferred in global relationships in order to speed decision making and provide a faster time to market.

Harrigan does not provide specific detail on the breakdown of agreements into licensing, contracts, or other categories of non-joint venture types of cooperative relationships. Based on her classification of global industries (electronic components, engines, medical products, pharmaceuticals, petrochemicals, videodisc players and videotapes, and automobiles), 416 of the 884 cooperative arrangements in the sample were in global industries. Of those 416 cooperative arrangements in global industries, 206 were classified as joint ventures. The incidence of joint venture versus non-joint venture classifications varied markedly among these industries, from about 5% to 100% of total cooperative arrangements. However, overall, this does lend support to the notion that joint ventures are the single most frequent type of legal agreement in international coalitions.

Hladik

Hladik (1985) developed research based on a database of 420 U.S.-foreign joint ventures which were formed between 1974 and 1982. The study looked only at finalized joint ventures cited in F&S Index of Corporate Change, involving at least one U.S. and one foreign firm, in manufacturing industries.

Hladik found that there was a general upward trend in international joint venture formation from 1974 to 1982. In cross classifying the joint ventures by SIC code, the database revealed that manufacturing, chemicals and allied products, machinery except electric, electronic machinery and equipment, metals and metal products, and food and tobacco made up just over 75% of the joint ventures in this database.

Hladik also found that while research and development activities were not prevalent in joint ventures, the incidence of research and development activity had increased from approximately 10% of joint ventures in 1974 to 1977, to approximately 20% of joint ventures by 1982. Finally, findings from this database revealed that the majority of U.S. joint ventures occurred with countries with "high" per capita GNP, such as European countries and Japan. There was no clear change in this pattern of coalitions over time.

Broad Studies on International Coalitions

This section of the literature review examines two major studies on international coalitions. The Morris and Hergert (1987) and Ghemawat et al. studies (1986) focus on the incidence and level of coalition formation activity. International coalition activity does represent a significant economic activity. Using United States Department of Commerce data, Contractor and Lorange (1988) found that international cooperative arrangements involving at least one United States-based partner exceed wholly owned subsidiaries by a ratio of four to one.

Morris and Hergert

Morris and Hergert (1987) formed a data base of international coalition formation announcements from The Economist and The Financial Times covering the time period from 1975 to 1986, in order to understand the characteristics of that activity. They found a steady increase in announcements of collaborative agreements between Europe, Japan and the United States from 1979 to 1985. In addition, the vast majority of collaborations, 81%, were between two firms.

Morris and Hergert also found a strong industry concentration in coalition formation, with 87% of all collaborative agreements in the database falling into motor vehicles, aerospace, telecommunications, computers, or other electric industries. The data gathered in the

database further tracked coalition formation by purpose, in terms of product development, marketing and/or production, or combinations of these categories. In 63.8% of the cases, product development was given as a reason for coalition formation. Product development was followed by production, given as a reason in 51.5% of the coalitions, with marketing given as a reason 22.2% of the time.

Morris and Hergert found that only 14.7% of the coalitions formed were between buyer and supplier. The remainder were formed between rivals and new market entrants. There was no breakdown of buyer-supplier coalitions by industry or country.

Ghemawat, Porter and Rawlinson

Ghemawat et al. (1986) looked specifically at the extent of international coalition activity, breakdowns by industry, countries, types of firms and purposes of coalition formation. These variables were examined by looking at all coalitions formed between 1970 and 1982 as reported by The Wall Street Journal.

Relating the results of the Ghemawat study to the scope of this research, the Ghemawat study found:

1. There has been no clear increase or decrease in coalition activity during the 1970-1982 period.
2. Coalitions in developed countries tend to be more concentrated in manufacturing and downstream activities, such as marketing, sales and service, than coalitions located in less developed countries.
3. Joint ventures are the most frequent contractual form of international coalition, accounting for about 41% of the agreements in this sample.

4. Coalition partners are heavily concentrated in developed countries.
5. The most frequent reason given for forming a coalition is operations and logistics, accounting for 42% of the coalitions.
6. Approximately 16% of the coalitions in this sample were formed for multiple purposes.
7. There is wide variation in coalition formation between industries, with the energy, chemicals, other machinery, metals and minerals, computers and aerospace industries accounting for a very high proportion of the total sample of coalitions.

Summary

Table 7 provides a summary of the above research in terms of the time periods covered, and the major variables of interest. The above research findings do not provide a consistent picture of the incidence and characteristics of international coalition formation. These apparent inconsistencies may arise from several sources. Differences in findings may be due in part to the different time periods which each research sample covers, the different sources used to gather data on the formation of coalitions, or the fact that each study used a slightly different definition of coalition activity. On the other hand, these inconsistent findings may be a function of the fact that the nature and level of international coalition activity is rapidly changing.

TABLE 7

SUMMARY OF PREVIOUS STUDIES OF INTERNATIONAL
COALITION ACTIVITY

STUDY	TIME FRAME	VARIABLES OF INTEREST
<u>NARROW FOCUS</u>		
Gomes-Casseres (1988)	1945-1975	Level of joint venture activity for over 5000 foreign subsidiaries of U.S. based <u>Fortune 500</u> manufacturing firms
Kobrin (1988)	1985 vs. 1975, 1966	Level of joint venture activity in manufacturing subsidiaries of U.S. firms in developing countries
Harrigan (1987)	1976-1985	Industries involved in cooperative agreements Form of agreement, joint venture or other
Hladik (1985)	1974-1982	Joint venture involving at least one U.S. firm Trend in joint ventures over time, countries involved
<u>BROAD FOCUS</u>		
Morris and Hergert (1987)	1975-1986	International collaborative agreement activity Industry concentration, purpose, countries involved-U.S., Europe, Japan
Ghemawat, Porter and Rawlinson (1986)	1970-1982	International coalition formation Industry concentration, purpose, countries involved, legal form of agreement

Section VI- Review of Methodologies Related to this Research

Introduction

This section reviews the methodological approaches taken for researching the incidence of coalition activity and the impact of international and/or coalitional involvement on the purchasing function. Approaches to stage one of the research, incidence of international coalition activity, are based primarily on gathering data from already published sources, and fine-tuning or reclassifying that data based on the goals of the research. These approaches will be reviewed first. The review of the literature found several studies which were focused by industry or form of agreement, and two studies which focused broadly on international coalition formation, cutting across purposes and legal forms (Ghemawat et al. 1986 and Morris and Hergert 1987).

In contrast, the approaches to research into the impact of international involvement and/or coalitional involvement in the purchasing function tend to be survey, anecdotal or case oriented. The literature review did not reveal any studies which focus specifically on international coalitions in purchasing, although there are

several studies which look at coalitional activity in purchasing (Shapiro 1985, Landeros and Monczka 1989).

Methodologies Related to Stage One

Studies Specific by Industry or Form of Agreement

The use of existing databases, or creation of a new database from secondary data sources appear to be popular approaches for gathering information on the incidence of international coalition activity. Formation of a database requires the researcher to carefully determine the criteria for including data in the database, and the characteristics of the data which the researcher desires to investigate.

Gomes-Casseres (1988) used secondary data in his research on international joint ventures involving United States based firms. The research involved a subset of data gathered based on 5000 foreign manufacturing subsidiaries of 180 Fortune 500 companies. The research used an existing database, created by Harvard Business School's Multinational Enterprise Project. This database was itself a subset of data on joint venture activity, involving 180 United States based firms, rather than all United States based firms.

Gomes-Casseres' database focused on existing joint ventures, rather than joint venture activity, such as joint venture formation or dissolution. There was no statistical testing of hypotheses or data. Rather, this research was exploratory in nature.

Kobrin (1988) also used a sample of the population in his research of United States ownership of manufacturing subsidiaries in developing countries. The sample in Kobrin's study was restricted to large, international United States-based firms, as identified in the Conference Board's Key Company Directory (1983). Kobrin developed a sample of 162 firms, which were then researched, using public information sources, in order to identify manufacturing subsidiaries, parent ownership and products.

Based on an analysis of the secondary data, Kobrin developed a mail survey, which was sent to 139 firms. The purpose of this part of the research was to get the best information possible, verifying public information on subsidiaries and products produced. Seventy-five usable responses were received, creating a database of 563 subsidiaries in 49 countries. Thus, this methodology of combining a secondary data search, coupled with a confirmatory survey, created the basis for Kobrin's database and research. There was some statistical testing of results, using a chi-square statistic.

Harrigan (1985) also used a combined methodology in her research into international joint ventures by industry. Like Kobrin, Harrigan's research approach began with a search of secondary data sources for selection of firms for inclusion in the study. Firms were selected from joint venture announcements published in Mergers & Acquisitions and Funk & Scotts Index of business periodicals.

Questionnaires were then sent to all parent firms mentioned in these joint venture announcements, as well as announcements of non-joint venture agreements. This confirmatory process created a total of 884 cooperative agreements, including 492 joint ventures.

Hypotheses for Harrigan's research were developed based on literature reviews of joint venture activity and interviews with experts in the field. Profiles of target industries were developed and refined based on input from participants in the field research. Field research was used to corroborate joint venture data. This research included face-to-face interviews, telephone calls, written correspondence, and so on, until the factors of interest for the 492 joint ventures were developed. This part of the research involved an iterative process, and provided information not generally in the public domain.

Harrigan classified the research pattern she used here as a hybrid methodology, using many sources of information to develop an understanding of a firm's business strategies. The results of Harrigan's research were presented in an anecdotal manner rather than being statistically tested.

Hladik (1985) used strictly secondary data sources in her research on United States-foreign manufacturing joint ventures. Hladik created a database of joint ventures formed in manufacturing industries based on information published in Funk & Scotts Index of Corporate Change.

Joint ventures to be included in the database were pared down based on searching other secondary sources to make sure that data fit the criteria for inclusion in the database.

General findings from Hladik's database were not statistically tested. However, hypotheses were developed regarding the determinants of research and development activity in joint ventures, and determinants of export activity in joint ventures. Empirical results regarding these hypotheses were statistically tested.

Research into Broad Coalitional Activity

Two studies into broad coalitional activity are explored here. Both of these studies attempted to examine the entire population of international coalitions, rather than some subset, as did the studies in the previous section. Thus, both of these studies rely wholly on secondary data as the source for selection of relationships for inclusion in their databases.

Morris and Hergert (1987) used a database of international collaborative agreements which was formed by INSEAD, based on announcements reported in the Economist and Financial Times from 1975-1986. The data which Morris and Hergert reported included only coalitions involving Europe, the United States and/or Japan. The researchers felt that the INSEAD database was important because they found that studies into international collaborative

agreements were hampered by the lack of a systematic source of data. The data collected on each collaborative agreement included the type of agreement, current status of the relationship, strategic rationale, participants, ownership structure, announced purpose, and industry setting. This research did not include any statistical testing of data from the database.

Morris and Hergert noted that while the INSEAD database was based on international journals, these journals originate in Europe, and thus may focus on European transactions. In addition, only large deals or agreements involving large firms would come to the attention of the international press. Thus, United States-Japan agreements and small agreements may go unreported. Further, press releases regarding the true nature and purpose of the agreements may be biased, as firms may wish to keep their strategies confidential from competitors.

Ghemawat, Porter and Rawlinson (1986) used a strategy similar to that of Morris and Hergert, in creating a database of all international coalitions formed between 1970 and 1982 as reported in The Wall Street Journal. The goal in creating this database was to develop a broader and more current database than previous research in order to develop a realistic picture of international coalition activity. The database developed here included information on the date the coalition was reported, names of participant firms, countries involved, SIC codes for the

coalition and participants, purpose of the coalition and the contractual form of the coalition agreement. This database considered only formation of new coalitions, rather than tracking the status of coalitions once formed. For clarification of coalition purposes, The Wall Street Journal data was interpreted with information from other sources in the business press, and some judgement.

The authors noted that limitations of the database included the likelihood that The Wall Street Journal would over-represent United States based firms and large transactions. In addition, Ghemawat, Porter and Rawlinson point out that the database tracked the number of coalitions, rather than the economic value of each coalition. The researchers chose not to test hypotheses of coalition incidence and patterns. Rather, the research statistically tested the data gathered on an ad hoc basis, and developed a framework for future research.

Methodologies Related to Stage Two

Two types of studies which relate to stage two of the research will be reviewed here. First, approaches to studies which looked at the impact of international involvement on the purchasing function will be reviewed. Second, methodologies of studies which examined the impact of different types of buyer/supplier relationships on the purchasing function will be reviewed. Because this type of research had a different focus than the research on

coalition incidence, the methodologies were also different, focusing primarily on case study or survey methodologies.

International Purchasing

Research into international purchasing has tended to focus on the motivation for international purchasing, preferred sources, and expected future trends (Purchasing World 1987, Crawford and Lamb 1981, Chiesl and Knight 1985, Monczka and Giunipero 1984). This research has been primarily descriptive and survey oriented, aimed at reaching a broad cross section of people involved in purchasing.

Monczka and Giunipero (1984) conducted a study which examined factors such as international purchasing motivation and future trends. Further, this study went on review implementation issues in international purchasing, including the impact of international involvement on the role of the purchasing function. The methodology used in this research was a purposive sampling case study. The researchers selected potential firms based on input of key purchasing professionals. Initially, 45 firms were interviewed by telephone. Of these firms, 26 were chosen and agreed to participate in the research. Selection of case study firms was made based upon the nature and extent of the firm's international purchasing activities.

Data collection followed two phases. First, all 26 firms were sent a written questionnaire. This was followed

by either an on site visit (10 firms) or phone interview (14 firms). Both quantitative and qualitative data were collected.

Purchasing Coalitional Relationships

Three studies of purchasing coalitional relationships will be reviewed here. These studies all involve some type of case study methodology. In addition, the methodologies employed here were exploratory in nature, aimed at understanding and developing theory to explain coalitional relationships, rather than confirmation of existing theory.

Shapiro (1985) referred to the methodology used in his research as "reports on observations" made of procurement practices and supplier responses. These observations were made based on personal visits and interviews with "several" major manufacturers of automobiles worldwide, their suppliers, and their suppliers' suppliers. In addition, the research included one in depth case history. The research went on to develop three models of supplier management, as well as the skills and knowledge required by the purchasing function in each model.

Freeman and Cavinato (1989) conducted interviews with over 140 corporate purchasing departments in the United States and Canada in order to develop a model of the stages of development of corporate planning and management as it related to the positioning of the purchasing function. As part of the model developed, the nature of purchasing

relationships at various phases of evolution of corporate strategic planning was examined. The interviews included a broad cross section of firms representing various industries, sizes and organizational structures.

Landeros and Monczka (1989) describe cooperative buyer/seller relationships in purchasing, and discussed the contributions purchasing can make to a firm's competitive strategy via cooperative buyer/seller relationships. This research was descriptive, based on information obtained in 50 field interviews with purchasing managers. The purchasing managers were chosen to represent a broad cross section of industries and organizational responsibilities.

Summary of Methodologies

This section of the literature review presented a number of approaches which have been used to study the incidence of coalition activity, the impact of international involvement on the purchasing function, and the impact of involvement in coalitional relationships on the purchasing function. Work by the above authors suggests that there is much opportunity for further research in the area of international coalitions, and the impact of international coalitions on the purchasing function.

Section VII- Summary and Implications of the Literature

Reviewed on this Research

This chapter has reviewed the literature relevant to research on broad international coalition activity, and the the impact on the purchasing function of international involvement and involvement in coalitional relationships. Because there is no base of literature which looks at the impact of both international and coalitional relationships by the purchasing function simultaneously, the literature regarding the impact of international involvement on the purchasing function and the literature regarding the impact of coalitional involvement on the purchasing function have been reviewed.

The research conducted by Ghemawat, Porter and Rawlinson specifically examined the formation of international relationships, as reported in The Wall Street Journal from 1970 through 1982. A key variable of interest in their research was international coalition formation, along with variables related to the characteristics of those coalitions. Coalition formation and coalition characteristics were also the key variables of interest in stage one of this research. In this stage of the research, the intent was to extend the Ghemawat study, gathering and examining 1983-1988 Wall Street Journal data on international coalitions. Thus, the results of this research provided a more current perspective on the phenomenon of international coalition activity. There

appears to be a growing interest in international coalition activity because many of the changes that are leading to coalitional relationships are occurring on a global scale. This research also expanded the scope of the study to look specifically at purchasing as a reason for coalition formation, which the Ghemawat, Porter and Rawlinson study did not examine.

Stage two of this research combined research on international purchasing with research on coalitional relationships. While there is research and current interest in both international purchasing and coalitional relationships in purchasing, the review of the literature did not reveal any research which combines both, to look at international purchasing coalitions. The intent of stage two of the research was to explore the potential implications of international coalitional involvement on the role and strategic positioning of the purchasing function of the firm.

In stage two of the research, the variables of interest were type of international purchasing relationship, impact of international coalition involvement on the role of the purchasing function, and impact of international coalitional involvement on the strategic positioning of the purchasing function. These variables have not been examined to a great extent in previous research efforts.

Summary

This chapter began broadly, with an overview of the relationship between industrial organization theory and international coalitions, and a review of synonyms and definitions used for supply chain management and coalitions in the literature. This chapter then reviewed the current literature related to the rationale, benefits and barriers to international supply chain management in general, and in the purchasing function specifically. There was some overlap in terms of the rationale, benefits and barriers to supply chain management in general, and supply chain management as it relates specifically to the purchasing function.

This chapter then reviewed previous research related to international coalition activity, international purchasing, and international purchasing coalitional relationships. This chapter also showed how this research effort relates to the previous research discussed here.

Chapter III presents and discusses the two stage methodology used in the execution of the research. Stage one developed a broad data base of international coalition formation as reported in The Wall Street Journal from 1983 to 1988. The data base was designed to assess trends and patterns in international coalition activity. Stage two used an in depth case study to explore the implications of international supply chain management on the purchasing function of the firm.

CHAPTER III

RESEARCH METHODOLOGY

Overview

This research involved a two stage methodology, consistent with the research objectives of providing both an overview of international coalition activity and an in depth understanding of the impact of supply chain management involvement on the purchasing function of a firm. To support a broad understanding of international coalition activity, stage one of this research developed a broad international database to assess the growth and current level of international coalitions and supply chain formation today. In stage two of this research, an in depth case study approach was used to develop an understanding of the implications of supply chain management on the purchasing function of a firm.

Chapter III begins by summarizing the research design for stage one and stage two of the study. The research variables used in each stage are then discussed and defined. The definition of key variables is followed by a listing of the key research questions which the study was

designed to address.

The hypotheses which were tested in stage one of the research are presented, along with the rationale used to support the expected direction of the outcomes of hypothesis testing. The explanation of the research hypotheses is followed by a presentation of and the rationale for the research propositions which were explored in stage two of the study. The execution of each stage of the research is then discussed. Chapter III closes with a discussion of the way in which the research design was implemented, and how the data for each stage of the study was analyzed.

Design of the Research

Stage One

The lack of a comprehensive data base or information source on international purchasing coalition activity today necessitated the development of a data base in order to analyze international coalition activity. The Wall Street Journal was used as the information source to gather coalition data, because it is widely recognized as a key source of current information on notable business transactions and agreements worldwide. In addition, use of The Wall Street Journal for development of a coalition data base allowed for greater validity and consistency in comparing coalition activity longitudinally to the data on coalition activity from the 1986 Ghemawat et al. study.

Thus, stage one of this research was patterned after the 1986 study of international coalition activity performed by Ghemawat et al. Ghemawat's study spanned the time period from 1970-1982, and included all international coalitions formed during that time frame as reported in The Wall Street Journal. The intent of this portion of the study was to extend and update Ghemawat's study by forming a database including all international coalitions reported in The Wall Street Journal between 1983 and 1988, inclusive. With the exceptions of financial, service and real estate ventures as discussed earlier, all international agreements which The Wall Street Journal terms joint ventures were included in this study. In addition to joint ventures, the legal form of the coalition could be a contract, license, supply agreement or other such agreement to the extent that there was evidence of long-term, mutual sharing, rather than simply a routine, financial transaction. Further explanation of what constituted an international coalition in this research is provided in Table 8 of this chapter, and Appendix A.

For consistency in comparing this research to the 1986 Ghemawat, et. al., study, the data were classified as in Ghemawat's study. The variables for which data was collected are summarized in Appendix B. The year that the coalition was cited in The Wall Street Journal was used as the year the coalition was formed. The names of the parties involved in the coalition, and their four digit SIC

codes were used to group coalitions by industry. The country that each coalition was attributed to was based on where the coalition was located. The headquarters location of the coalition partner's parent company was used to track the coalition partner's locations. The legal form of the coalition agreement was also noted.

The purpose of forming the coalition for both partners was determined and recorded wherever information permitted. These purposes were classified into seven categories, as detailed in Table 9. A more detailed breakdown of specific types of coalitions that were included in each coalition category can be found in Appendix C.

In addition to examining the purpose categories which Ghemawat, et al. examined, this research broke the operations/logistics category down into operations, logistics and purchasing. Creating a category for purchasing allowed separate analysis of purchasing coalitions.

The data gathered on coalition activity was used in three distinct ways. First, the 1983 to 1988 data were analyzed alone and mapped with Ghemawat's data. The appropriate statistical tests were used to determine whether or not there was a trend in international coalition formation from 1983 to 1988, and 1970 to 1988. Other statistical tests were performed as appropriate to determine trends and/or patterns by industry, country,

legal form of coalition agreement and purpose of the coalition agreement.

The second way in which the data were used was, to the extent possible, to get a deeper understanding of the formation of purchasing coalitions. The 1983-1988 data were used to look for trends and patterns in purchasing coalition formation over time, by industry, country and contractual form. The appropriate statistical tests were used to assess the significance of the findings on purchasing coalitions.

Third, this stage of the study was used to provide focus for stage two of the study. Based on the characteristics of firms and industries involved in international purchasing coalitions, as determined in stage one, the researcher was able to narrow the search for appropriate candidate companies and industries for inclusion in stage two. In addition, analysis of phase one data helped the researcher develop a better understanding of the patterns of international purchasing coalition activity, which contributed to a more focused interviewing process for the case studies. This classification scheme and related analyses provided for a broad understanding of international coalition activity trends and patterns that was not available in this format prior to this research.

Stage Two

The second phase of this study involved the use of an exploratory case study methodology. This type of research is appropriate for a situation where little is known, and the purpose of the research is to gain understanding. A case study is also beneficial where it may not be possible to formulate all relevant questions in advance, and where self reporting without the ability of the researcher to probe for clarification of answers may yield misleading results.

This research focused on one type of international purchasing relationship: coalitional international purchasing relationships. A purposive sample of six organizations was selected for in depth analysis and review of the purchasing function. Firms were selected based on the data gathered in stage one of the research and recommendations of knowledgeable people in academia and the field.

Stage two of the research involved in depth personal interviews with one or more members of each organization. Interviews included only personnel from the purchasing function. Those who were interviewed were sent a written questionnaire in advance, which provided background information for the personal interviews, and examined some of the key variables. A copy of the material mailed in advance to those participating in the interview is included in Appendix E.

In addition, before the personal interview was conducted, each participant was asked to return the written questionnaire to the researcher. Return of the written questionnaire prior to the personal interview helped the researcher better understand the company and policies before the personal interviews were conducted, and use the personal interview time more productively.

Responses from the interviews explored the nature of the involvement of the purchasing function in implementing international coalitions, and the role and strategic positioning of purchasing functions which were involved in international coalitional purchasing relationships. The role of purchasing in international supply chain management was explored in terms of key success factors in international coalitions, barriers that have been or remain to be overcome, and changes in the nature of involvement of the purchasing function in international coalitions over time. The role and strategic positioning of purchasing functions involved in coalitional international purchasing relationships was also examined by looking at such issues as responsibility, input into strategic decision making, status, organizational structure, and skill requirements.

Research Variables

This research had two stages with separate, but related, focal points as discussed in the preceding

sections. The research variables were chosen to reflect the research issues of interest.

In stage one of the research, the key variable of interest was the formation of international coalitions. To assess international coalition activity per se, one would track the number of coalitions in existence at any one time. However, the nature of reporting and tracking of coalition formation, dissolution, and the variable length of coalition duration would make determination of a reasonable sample of international coalitions in existence today extremely difficult. Thus, this research used the variable international coalition formation as the variable of interest in measuring international coalition activity.

Once it was determined that a business relationship constituted an international coalition, that relationship was further classified according to the purpose of the coalition. The broad categories for classifying the purpose(s) of the coalition were chosen to provide consistency for comparing data with the 1986 Ghemawat et al., study, and to provide detail regarding purchasing coalition activity. However, as illustrated in Appendix C, many subcategories were used to define each major classification of purpose in order to provide for consistent classification. International coalition relationships were also defined by the legal form of the agreement, and the country in which the coalition and coalition partners were headquartered. The number of

coalitions formed in each industry during the period under study, 1983-1988, was tracked to determine which industries had a high level of coalition activity.

In stage two of the study, the variables of interest were the type of international purchasing relationship, the role of the purchasing function, and the strategic positioning of the purchasing function. Other variables, such as industry, size of the purchasing organization and overall company could also have an impact on the effects of the type of international purchasing relationship on the purchasing function. However, because the case study is limited in the number of firms involved, it was desirable to cut across organizational size and industry boundaries. Thus, this study focused on variables which are not specific to organizational size and industry, such as the role and status of purchasing functions which are involved in international coalitional relationships.

Definition of Stage One Research Variables

An international coalition was defined for this research as a formal, long-term agreement between two or more organizations representing headquarters in at least two different countries, to mutually share risks and benefits as they work toward a common goal (see Glossary). These long-term agreements are designed for a specific business purpose, rather than involving a complete merger of two separate legal entities.

For classification of relationships from The Wall Street Journal, the definition in Table 8 was used. Note that these criteria were not used for the specific types of relationships which will be excluded from this study: banking, real estate and financial services. A more detailed breakdown and explanation of decision rules which were used to determine whether a relationship was classified as an international coalition for purposes of this study is included in Appendix A.

After it was determined that a relationship met the above definition, it was classified according to the purpose of the coalition relationship. It was not always possible to ascertain the purpose of a coalition with precision due to the way these coalitions were reported in the press, and the willingness of coalition partners to disclose information. The seven broad coalitional categories used in this study are described below in Table 9. Direct comparison of the data from this research with the Ghemawat et al. (1986) study required combining the operations, logistics and purchasing categories into

TABLE 8

DEFINITION - INTERNATIONAL COALITION RELATIONSHIP	
CHARACTERISTIC	DEFINED BY:
International	Parent companies of at least two of the partners are located in different countries
Long-term	Duration of greater than one year, or spans the length of the investment cycle for assets needed in relationship
Agreement	Involves a formal, written understanding between parties
Mutual sharing	Risks and benefits of outcomes of relationship are divided between both parties; not just a routine business contract
Specific purpose	The relationship has a specific business goal in mind.

one category, operations/logistics. A further detailed breakdown of subcategories used to make up each of the major categories and provide consistency in classification of coalitions is included in Appendix C.

TABLE 9

PURPOSE FOR FORMING INTERNATIONAL COALITION RELATIONSHIPS	
CATEGORY	DEFINED BY:
Technology	A coalition whose primary purpose is to share, learn, develop, teach or otherwise build upon and advance the technology or technologies of at least one of the coalition partners.
Operations	A coalition whose primary purpose is to improve the efficiency or effectiveness or otherwise expand or improve the manufacturing processes of the firm, not related only to technology.
Logistics	A coalition whose primary purpose is to improve the efficiency or effectiveness of the logistical processes of the firm, including transportation, warehousing and distribution processes.
Marketing/ Sales/Service	A coalition which is formed to sell, service or otherwise market, the product or products of a coalition partner, partners, a third party, or the coalition itself.
Multiple	A coalition whose purpose overlaps two or more of the above categories, so that it was not formed for a singular purpose. An example would be a coalition formed for technology sharing and joint manufacturing.
Purchasing	A coalition whose purpose is to procure raw materials, components or finished goods from a partner, based on sharing technology, or risks and rewards.
Unclassifiable	A coalition not fitting the above categories.

The classification of international coalition relationships by legal form of agreement was based on The Wall Street Journal data. There were five basic categories that were used to define the legal form of agreement, as shown in Table 10.

TABLE 10

CATEGORIES OF LEGAL FORM OF INTERNATIONAL COALITION RELATIONSHIPS	
CATEGORY	CLASSIFIED IN <u>WALL STREET JOURNAL</u> AS:
Joint Venture	Joint Venture, Partnership, Equity interest; relationship where there is evidence of mutual financial commitment to form a new entity to transact business.
License	License, Exclusive License
Supply Agreement	Supply Agreement; contractual agreement with the primary purpose of supplying raw materials, finished goods or components, where there is evidence of mutual sharing of risks and rewards, technologies, or the like, not a routine contract.
Contract	Contract, Agreement, Accord, Definitive Understanding; any type of relationship which implies mutual agreement has been reached and formalized, but does not fit into the above categories.
Other	Any type of collaborative agreement which does not fit into any of the above categories.

Definition of Stage Two Research Variables

Stage two of the research considered the following variables: type of international purchasing relationship, the role of purchasing, and the strategic positioning of purchasing. The first variable, type of international purchasing relationship was assigned one of three categories: arms-length, supportive, or coalitional. The variable type of international purchasing relationship was important for both screening and classifying potential case study firms, as this research was only interested in purchasing function's with coalitional involvement.

Arms-length involvement tends to be reactive, operational, or even clerical in nature. Coalitional involvement fits in with the concept of a supply chain management relationship, sharing of risks and benefits between partners. This parallels the definition given by Leenders and Blenkhorn (1988) of a negative and positive stage of supply contribution to the firms goals and strategy. The categories of international purchasing relationships are expanded in Table 11.

TABLE 11

CATEGORIES OF INTERNATIONAL PURCHASING RELATIONSHIPS	
TYPE:	CHARACTERIZED BY:
Arms-length	-Vendor is chosen for tangible reasons, generally cost related. -firm uses competitive bidding each time contract comes up, if using contracts
Supportive	-Vendor chosen for tangible reasons, generally not cost -short to medium term contracts, renegotiation rather than competitive bid
Coalitional	-Vendor generally chosen for intangible reasons like corporate culture or strategic fit with firm -Relationship characterized by sharing of both risks and rewards -long-term to indefinite time horizon

The variable type of international purchasing relationship established a framework for investigating the next two variables of interest: the role of the purchasing function, and the status of the purchasing function within the firm. The variable the role of the purchasing function was explored and defined in terms of purchasing activities/responsibilities, and the skills which were required to carry out the purchasing duties. Activities/responsibility and skills encompass the essence of the role of the purchasing function; thus examining

these factors, as in Table 12, provided an understanding of the role of purchasing functions which are involved in international purchasing relationships.

TABLE 12

KEY ASPECTS OF THE ROLE OF PURCHASING WITHIN THE FIRM	
FACTOR	DEFINED BY:
Purchasing activities/responsibility	Scope of activities in which the purchasing function is involved
Skill	Buyers' perceptions of skills required to be effective in international supply chain management relationships.

The strategic positioning of the purchasing function was examined in terms of the purchasing functions' input into strategic planning, the titles and organizational structure of the purchasing function, and buyers' perceptions of their organizational status. These factors are further broken down for measurement purposes in Table 13.

TABLE 13

KEY ASPECTS OF THE STRATEGIC POSITIONING OF PURCHASING WITHIN THE FIRM	
FACTOR:	DEFINED BY:
Strategic input	Buyer's input into the strategic planning process
Title/ Organization	Reporting relationships within the purchasing function Organizational structure of the purchasing function
Attitudes	Buyers' perceptions of their organizational status

Validation of Variable Classification

The written guidelines for classification of coalition formation were used to provide consistent classifications. These guidelines, as described in Tables 8 through 10 and Appendices A and C, were first used to determine whether a business agreement constituted an international coalition, then to categorize the coalition by purpose and legal form. There was judgement involved in classification. Consistency in classification was the most important factor to allow for comparisons within the database.

The other key variable, type of international purchasing relationship, was confirmed in several phases. First, when a company was initially contacted as a possible candidate for the case study portion of the research, the researcher used a written interview protocol which involved a series of questions designed to determine whether the firm was involved in any coalitional international purchasing relationships. The protocol used is shown in Appendix D. This research was concerned only with firms with some international coalitional relations, so purchasing functions which did not participate in some international coalitional relationships were screened out at this point. Second, if the firm was not screened out and agreed to participate in the research, the researcher asked for further contact names within the firm, and verified the type of international purchasing relationships with which the purchasing function of the firm was involved before proceeding with the personal interview portion of the research.

Third, the researcher used responses received from the written questionnaire, which was returned before the personal interview, to help assess whether the firm was involved in any coalitional international purchasing relationships. Fourth, the researcher used written policy and procedure statements, if any, received from the case study firms to verify the type of involvement. Finally the researcher further probed the type of international

purchasing relationship during the personal interviews with members of the firm, looking for specific examples of activity to confirm or deny the classification. Coalitional international purchasing relationships are one extreme on a continuum of possible purchasing behaviors among firms which do not share common ownership. The researcher classified firms according to a subjective weighting of the evidence gathered.

Research Questions

This research had several goals, based on the state of the empirical research into international coalition activity, and the impact of international coalition activity on the purchasing function. The first goal was to understand the trends and characteristics of international coalition formation. The second goal was to develop an understanding of the trends and characteristics of international coalition formation in purchasing, to the extent possible from the level of detail of information in the literature. These goals were both achieved through the formation of a database containing data on all the coalitions formed, as reported by The Wall Street Journal, from 1983 to 1988 inclusive.

In addition, this research was designed to develop an understanding of the role and strategic positioning of the purchasing function, as described in Tables 12 and 13. The nature of purchasing involvement in international

coalitions was also explored, to understand why these relationships succeed or fail, and how these relationships change over time. These research issues were explored in the case study stage of the research.

Specific hypotheses were developed to carry out the research goals of stage one. These hypotheses were intended to describe the key research questions, addressing the trends and issues which, based on careful review of the relevant literature, the researcher believed were being affected by the type of international supplier relationship. For consistency, all hypotheses were stated in the null case, followed by a prediction of the outcome, and justification for that prediction. For the hypotheses related to The Wall Street Journal international coalition data base, appropriate statistical testing was used to confirm or reject each hypothesis. The statistical tests are explained later in this chapter in the data analysis section, and Summarized in Table 14.

In stage two, the case study portion of the research, large enough samples were not available to allow for statistical testing of results. Thus, research propositions were developed. A research proposition "...is a statement that all of the evidence supports, but cannot be proven in a scientific or statistical sense" (La Londe 1986). These research propositions were stated in a positive light, related to the outcome anticipated by the researcher.

Stage I- Research Hypotheses

Hypothesis A: Incidence of International Coalitions

Hypothesis A1: There has been no change in the level of international coalition formation activity from 1970 to 1988.

Predicted: The level of international coalition formation has risen from 1970 to 1988.

Rationale:

Many authors report a surge in coalition activity in recent years (Ohmae 1988, Levine 1986). Morris and Hergert (1987) report a steady increase in coalition activity from 1979 to 1985. However, Ghemawat et al. (1986) report no clear growth pattern in coalition formation from 1970 to 1982. Since the time period of interest here spans the time frames of these two studies, and more recent data, it was expected that the results of this study would follow the results of more recent data, showing an upward trend in international coalition formation from 1970 to 1988.

This hypothesis was tested by using linear regression to develop a trend line of the independent variable data, incidence of international coalition activity by year. The null hypothesis of no trend, versus the alternative hypothesis of an upward trend in coalition formation reported in The Wall Street Journal was tested using a one-tailed F test at an alpha value of .05.

Hypothesis A2: There has been no change in the level of international coalition formation activity from 1983 to 1988.

Predicted: The level of international coalition formation has risen from 1983 to 1988.

Rationale:

It was expected that since this hypothesis concentrates on very recent time periods, and the most recent research (Morris and Hergert 1987) showed an upward trend in international coalition formation, the data from this study would also show an upward trend in international coalition formation. Hypothesis A2 was tested for a trend using a one-tailed Spearman's correlation test and an alpha of .05.

Hypothesis A3: There is no difference in the incidence of international coalition formation by purpose of coalition.

Predicted: The most frequent single reason given for forming international coalitions will be operations.

Rationale:

Ghemawat et al. (1986) found that 42% of the coalitions in their data base were formed for operation and logistics purposes, while 20% were formed for technology development. Morris and Hergert's (1987) classification categories are not directly comparable to the categories used in this study, and by Ghemawat et al. Morris and Hergert reported that 50.1% of the partnerships they studied reported production as at least one reason for coalition formation, while 63.8% reported joint product development as one reason for coalition formation. While the previous research was not statistically tested, this study expected operations to be the most frequent reason

for coalition formation in the 1983 through 1988 data base. Hypothesis A3 was tested using a chi-square test for the uniform distribution at an alpha level of .05.

Hypothesis A4: There is no difference in the incidence of international coalition formation between multiple and single purpose coalitions.

Predicted: Most coalitions are formed for multiple reasons.

Rationale:

Ghemawat et al. (1986) found that 16% of the international coalitions in their database were formed for multiple purposes. Morris and Hergert (1987) found that 31.1% of the international collaborations in their data base were formed for more than one reason. Further, several authors note that coalition effectiveness (Flaherty, 1986), partner protection against exploitation (Levine et al. 1986) and synergistic benefits (Weimer et al. 1988) all increase if coalition activity spans multiple purposes. Thus, given the recency of the data base which this study developed, and as partners learn from experience, this research expected to find that most international coalitions in the 1983-1988 data base were formed for multiple purposes. Hypothesis A4 was tested using a chi-square test for the uniform distribution at an alpha level of .05.

Hypothesis A5: There is no difference in the incidence of international coalition formation by country.

Predicted: Industrialized, market economy countries will have a higher incidence of coalition formation.

Rationale:

Ghemawat et al. (1986) found that for the coalition partners whose location they were able to pinpoint, 85.6% were headquartered in developed countries. This finding appears to be consistent with the strong economic power of developed countries. This research expected to find similar results. The classification of countries into categories by economic development is shown in Appendix H. Hypothesis A5 was tested for the uniform distribution using a chi-square test at an alpha level of .05.

Hypothesis A6: There is no difference in the incidence of international coalition formation by industry.

Predicted: Coalition activity does vary by industry, with the industries which have a higher level of imports and exports forming a higher number of international coalitions.

Rationale:

Ghemawat et al. (1986) found that certain industries accounted for a greater percentage of international coalition activity, as classified by two digit SIC code. Focusing on Ghemawat's more recent data, 1980 to 1982, energy, chemical, other machinery, and the computer/semiconductor industry reported the highest level of

coalition activity. These industries are generally considered to be global in nature. Morris et al. (1987) found that 87% of international collaborations from 1979 to 1985 were accounted for by five industrial sectors: motor vehicles, aerospace, telecommunications, computers and other electric.

This study expected to find that international coalition formation did vary by industry, as supported by previous studies. Thus, this research expected that eight industries: energy, chemical, other machinery, computer, motor vehicles, aerospace, telecommunications and other electric, would have exhibited a significantly higher level of coalition activity for 1983 through 1988, the time period of this study. The two and four digit standard industrial classification codes assigned to each category are detailed in Appendix I. Hypothesis A7 was tested using a chi-square test for the uniform distribution at an alpha level of .05.

Hypothesis A7: There is no difference in the incidence of international coalition formation by legal form of the coalition.

Predicted: Joint ventures will be the most common legal form of agreement for international coalition formation.

Rationale:

Ghemawat et al. (1986) found that joint ventures were the most frequently used form of international coalition in their sample, accounting for 41% of the international

coalitions in their data base, while 31% were classified as "other"; presumably some type of contract. Given Ghemawat's results and all of the attention that joint ventures get (Gomes-Casseres 1989, Levine et al. 1986) there was no strong reason to believe that this pattern had changed. Hypothesis A7 was tested using a chi-square test for the uniform distribution at an alpha level of .05.

Hypothesis B: Incidence of International Coalitions in Purchasing

Hypothesis B1: There has been no change in the level of international coalition formation in purchasing activity from 1983 to 1988.

Predicted: There has been a significant increase in the level of international coalition formation in purchasing from 1983 to 1988.

Rationale:

As discussed above for international coalition activity in general, it was expected that since this hypothesis concentrated on very recent time periods, and the most recent research (Morris et al. 1987, Harrigan 1988) showed an upward trend in international coalition formation, the data specific to purchasing coalitions would also show an upward trend. Hypothesis B1 was tested for the presence of an upward trend using a one-tailed Spearman's test of correlation at an alpha level of .05.

Hypothesis B2: There is no difference in the incidence of international purchasing coalition formation by country.

Predicted: Industrialized market economy countries will be more likely to be on the receiving/buying end than the supplying/selling end of supply agreements.

Rationale:

Less developed countries (as defined in Appendix H) are more likely to have the inexpensive labor and natural resources that will make them attractive sites for procurement of raw materials, components and finished goods at competitive prices. This hypothesis was tested by using a difference between proportions test at an alpha of .05. The difference between proportions test compared the ratio of developed countries on the receiving end of purchasing coalitions to the ratio of developing countries on the receiving end of purchasing coalitions. The former ratio was expected to be significantly higher than the later.

Hypothesis B3: There is no difference in the incidence of international purchasing coalition formation by industry.

Predicted: Coalition activity varies by industry, with energy, chemical/pharmaceutical, other machinery, auto, aerospace, telecommunications and other electric dominating.

Rationale:

While there were no data available to specifically support the concentration of international purchasing coalitions by industry, the researcher believed that international purchasing coalitions would follow the same patterns as international coalitions in total. Thus, it was anticipated that energy, chemical/pharmaceutical, other

machinery, auto, aerospace, telecommunications and other electric industries would dominate. Hypothesis B3 was tested using a chi-square test for the uniform distribution at an alpha value of .05.

Hypothesis B4: There is no difference in the incidence of international purchasing coalition formation by legal form of the coalition.

Predicted: The most common legal form of international coalition will be supply agreement.

Rationale:

Supply agreement appeared to be the logical legal form for a purchasing coalitions, which deal with supply. A joint venture, which signifies joint ownership and control, would not appear to provide any real benefit in purchasing coalitions. Thus, it was expected that supply agreements would dominate other legal forms, such as general contracts, joint ventures and licensing agreements. Hypothesis B4 was tested using a chi-square test for the uniform distribution at an alpha value of .05.

Stage Two- Research Propositions

Proposition A: Impact of International Coalition Activity on the Purchasing Function

A1. Role of Purchasing

Activities/Responsibility

Proposition A1a: Purchasing functions involved in the coalitional type of international supplier relationship will be responsible for a broad range of function spanning activities.

Rationale:

Functional interaction is seen as important when purchasing is involved in coalitional relationships, because the purchasing function tends to be more integrated into the firm and involved early in projects (Leenders and Blenkhorn 1988, Shapiro 1985). In addition, coalitional supplier relationships focus on the buyer-supplier relationship, requiring a broader perspective, coordination of work, and planning out into the future (Spekman 1988, Bevan 1989). Thus, it was expected that purchasing functions involved in coalitional international purchasing relationships would have broad responsibilities. It was anticipated that these broad responsibilities would include involvement with their suppliers and other functional areas, planning, coordination of work, and internal and external communication (Spekman 1988, Shapiro 1985).

Skill Requirements

Proposition 1b. Purchasing functions involved in coalitional types of international supplier relationships need a high level of communication, teamwork and cooperation skills.

Rationale:

Purchasing functions involved in coalitional types of international purchasing relationships interact with their suppliers as allies, cooperating, sharing and balancing power (Spekman 1988). Therefore, it was expected that purchasing functions involved in coalitional international

relationships would require a great deal of supplier interaction. Thus, this research expected to find that purchasing functions involved in coalitional relationships would require a high level of communication, cooperation and teamwork skills.

A2. Strategic Positioning of the Purchasing Function

Strategic Input

Proposition A2a: Purchasing functions involved in coalitional types of international purchasing relationships will have involvement and of input into the strategic planning process of the firm.

Rationale:

Several authors argue that purchasing becomes involved in coalitional types of relationships because the firm comes to realize the strategic importance of the purchasing function (Leenders and Blenkhorn 1988, Shapiro 1985, Spekman 1988, Bevan 1989). Coalitional relationships require a high level of management support and visibility (Ohmae 1989, Leenders et al. 1989). As the goals of purchasing are integrated into other functional areas, and the organization as a whole, as is expected when purchasing becomes involved in coalitional relationships (Leenders and Blenkhorn 1988), it was anticipated that purchasing will play a large role in corporate strategic planning. This was evidenced in previous work by the involvement of purchasing in product design (Bevan 1989, Shapiro 1985), development of overall purchasing objectives that go beyond

cost (Bevan 1989), and involvement of the purchasing function in planning (Spekman 1988).

Organization

Proposition A2b: The organizational structure of purchasing functions involved in coalitional international supplier relationships will likely be a mix of centralized and decentralized organizations.

Rationale:

Shapiro (1985) found a mixed type of purchasing organization in coalitional types of relationships: one where the central purchasing organization manages worldwide relationships, and decentralized plant level purchasing organizations do most buying and release orders against centrally purchased, strategic items. Freeman and Cavinato (1989, 1990) noted that when a purchasing function becomes strategic in nature, it is characterized by a strong central purchasing function, but may still have decentralized plant level purchasing activity.

It is logical that the strategic activities of purchasing would be centralized for coordination and communication. It also appears consistent that the less critical activities would be carried out elsewhere, by those directly affected, so that purchasing can focus on their more important strategic relationships. It was anticipated that purchasing functions involved in coalitional relationships would have purchasing

organizations which combine centralized and decentralized purchasing.

Attitudes

Proposition A2c: Purchasing functions which are involved in coalitional types of international supplier relationships will perceive their status in the firm as high, on an equal level with other strategic functional areas.

Rationale:

Several authors note that before purchasing becomes involved in coalitional relationships, top management must understand the strategic importance of purchasing to the firm (Spekman 1988, Leenders et al. 1989, Shapiro 1985, Bevan 1989). Functions with high strategic importance and top management attention tend to have higher organizational status. Thus, it was expected that purchasing functions involved in international purchasing coalitions would perceive a relatively high status for the purchasing function within the firm.

Proposition B: The Nature of the Purchasing Function's Involvement in International Coalitional Relationships

Proposition B1: The nature of the purchasing function's involvement in coalitional relationships changes over time.

Rationale:

Burt (1989) suggested that the management of suppliers goes through a series of stages. The responsibilities of the purchasing staff "...begin with the requirements development process, continue with careful source selection and pricing, and conclude with the management of selected suppliers." For example, during the supplier selection or pre-qualification process, the key goal was to develop an understanding of the supplier's capabilities, technology, financial stability, future plans, managerial assets and culture (Burt 1989, Spekman 1988).

Once a relationship had been established, joint planning, coordination of work and generally managing the relationship became important (Spekman 1988, Burt 1989). If the firm was in the process of developing a new product, the purchasing function may need to work closely with engineering at both their own and the supplier's firms (Burt et al. 1985). Spekman (1989) suggested that purchasing partnerships evolve through a series of stages, each characterized by a different focus. Thus, this research anticipates that the focus and the nature of the purchasing function's involvement in international supplier relationships will change over time.

Proposition B2: Purchasing becomes involved in international coalitions rather than domestic coalitions due to the inability of domestic firms to meet their needs.

Rationale:

International purchasing relationships are less convenient and more difficult to manage than domestic purchasing relationships due to distance, cultural differences, government regulation, and a host of similar reasons (Monckza et al. 1984, Scheuing 1989, Burt 1984, Leenders et al. 1985). Thus, firms are only willing to go through the extra trouble of establishing international relationships because the firm perceives that international suppliers can better meet their needs, providing greater overall value than domestic relationships (Leenders et al. 1989).

Implementing the Research Design

This research involved two stages; within each stage there were several phases. The research execution was very different for each of the two stages, reflecting the difference in the proposed methodologies at each stage.

Stage one of the research involved gathering data on international coalition formation from The Wall Street Journal, and building a database from that information. The second part of stage one research involved analyzing the information gathered, and reporting results.

Stage two of the research also involved several phases. The first phase of the research involved a validation of the research design and written and personal interview protocols. The second phase of this part of the

research involved selection of the case study firms. The third phase of the study involved actual collection of the case study data. The final phase of the second stage involved analysis and review of the case study data, and reporting of results.

Stage One

Data Collection

Collection and classification of The Wall Street Journal data involved looking at all of the issues of The Wall Street Journal, Eastern Edition, published from January 1983 through December 1988. The definition and classification schemes shown in Tables 8 through 10, and Appendices A and C were used to provide consistent data collection and classification.

The use of The Wall Street Journal as a data source offered several advantages. First, The Wall Street Journal is widely recognized as a major daily source of written information on key business events and transactions worldwide. Second, this data source was also used in a previous study of international coalition formation, conducted by Ghemawat et al. 1986. The previous study covers the time period from 1970 through 1982, inclusive. Thus, longitudinal comparison of the current research with 1970 through 1982 coalition formation data was possible on a consistent basis.

Data Analysis

Hypotheses A and B discussed above were tested based on the data gathered to form the data base. This part of the analysis involved a descriptive approach, describing the characteristics and patterns of international coalition activity from 1983 to 1988. In examining patterns in the international coalition database, patterns were analyzed over time, and by specific characteristics, as discussed in more detail below. The appropriate statistical tests were used to test for the significance of results, as shown in Table 14.

First, data regarding the incidence of international coalition formation in general and in purchasing specifically was analyzed for the time period of the database, 1983 through 1988, to determine if there was a trend in international coalition formation. The 1983 through 1988 database which contains all international coalition data was also combined with the data from the Ghemawat study, to look for a longer term trend.

Second, other coalition classifications such as the purpose of the coalition, number of coalition purposes, the headquarters country of coalition partners, industry, and legal form of agreement were grouped into categories. Analysis was performed to look for patterns in the data to determine whether certain purposes, countries, industries, and legal forms of international coalitions were prevalent

for international coalitions in purchasing and the total international coalition database.

This analysis was important because one of the major goals of this research was to develop a broad perspective of the characteristics of international coalition activity today. Analyzing the purposes of coalition formation helped to develop an understanding of the activities within a firm most prone to coalition relationships, so that management can review the opportunities associated with those activities. The intent was to analyze the purpose of coalition formation according to the seven categories laid out in Table 9. If warranted, the more detailed classification of coalitions was possible based on the detailed classification shown in Appendix C. This research also looked at patterns by country, in order to help assess where to look for coalition partners, and perhaps where untapped potential lies.

Two and four digit SIC codes were used to examine coalition formation by industry, as detailed in Appendix I. Classification of coalitions by industry can help managers identify what the competition is doing, and whether their firm is in an industry where many coalitions are likely.

Coalition formation was classified by legal form to give management a feel for the nature of coalition relationships. For example, when a joint venture was involved, that entails joint ownership, and potentially a different level of commitment.

In addition to looking for patterns within the characteristics of international coalitions formed, the data summarizing coalition formation by purpose and legal form was also cross classified over time. Summarizing across years allowed an assessment of changes in coalition patterns between years, to determine whether the characteristics of firms which form coalitions are following a trend, or have stabilized.

The appropriate statistical tests were used to assess the significance of trends and patterns found in the data. The tests which were run are summarized in Table 14. All hypotheses were tested at both a five-percent significance level. In addition, if the null hypothesis was rejected,

TABLE 14
SUMMARY OF STATISTICS USED FOR HYPOTHESIS TESTING

HYPOTHESIS:	STATISTIC USED TO TEST NULL HYPOTHESIS:
A1	Linear Regression
A2, B1	Spearman's Correlation
A3, A4, A5, A6 A7, B3, B4	Chi-square
B2	Difference Between Proportions

Note: all tests were run at 5% alpha levels, with simultaneous confidence intervals used if the null hypothesis was rejected.

90% and 95% simultaneous confidence intervals were developed to determine which samples came from different populations. Simultaneous confidence intervals are useful in a situation where the research is interested in finding out not only whether the samples all came from the same population, but also, if the samples did not come from the same population, which samples are from different populations.

Reporting of Results

Stage one of the study involved a descriptive approach to analysis and reporting of results. The hypotheses tested, as discussed in hypothesis A and B above, will be presented in Chapter IV, along with the empirical results of hypothesis testing. The goal was to be able to use the results from this stage of the research to develop a broad understanding of patterns and trends in international coalition formation in general, and international coalition formation in purchasing in particular. More specifically, this part of the research draws conclusions regarding:

1. The trends in level of international coalition formation from 1970-1988
2. The trends in level of international coalition formation from 1983-1988
3. The pattern of coalition formation by purpose of coalition
4. The pattern of coalition formation for single versus multiple purpose coalitions
5. The pattern of coalition formation by country
6. The pattern of coalition formation by industry

7. The pattern of coalition formation by legal form of coalition agreement
8. The trends in level of international coalition formation in purchasing
9. The pattern of coalition formation in purchasing by country
10. The pattern of coalition formation in purchasing by industry
11. The pattern of coalition formation in purchasing by legal form of coalition agreement

Stage Two

Stage two of this research involved a different type of methodology from stage one. Thus, it required a different approach in the design of the research. Unlike stage one, this part of the research was both prescriptive and descriptive in nature. It involved both describing current practices, and prescribing a strategy for success for the purchasing function in international supply chain management.

Validation of Interview Protocol

There were two parts to the process of validating the research protocol that was used in the interview process. The first part involved asking purchasing executives to complete the written questionnaire, and provide feedback on content and format. The second phase involved pretesting the preliminary questionnaire on purchasing executives in an interview setting.

A preliminary copy of the written questionnaire was sent to two purchasing executives. These purchasing executives were asked to complete the questionnaire just as any participant in the study would do, while evaluating the relevance and clarity of the testing instrument. The pretest participants were asked to suggest deletions and additions to the questionnaire. In addition, as purchasing executives, if their firm fit the research criteria, they were asked whether they would like their company to participate in the research. These purchasing executives were also asked to make recommendations for participant firms, and provide the name of a key contact at the firm.

The researcher also pretested the personal interview protocol with these two firms. The purpose here was to determine the length of the interview, and the clarity and relevancy of the questionnaire in soliciting the types of information which the researcher was interested in obtaining in an actual face to face interview situation. Minor revisions were made to the written questionnaire and interview protocol based on the input of the pretest firms, and the researcher's observations.

Selection of Case Study Firms

Selection of the case study firms involved a purposive sample. That is, firms were selected based on the involvement of the purchasing function of the firm in coalitional international purchasing relationships. Thus,

the sample was not necessarily representative of the purchasing functions of all firms in the United States. Potential firms to be included in the case study were identified based on data gathered from The Wall Street Journal database, the literature review, academic experts, and members of the National Association of Purchasing Management. The name of the key contact person at each firm was obtained from the person who recommended the firm as a potential research participant.

If it seemed probable to the researcher that a firm which was identified as a potential case study candidate would fit the criteria listed below, the researcher telephoned the key contact. The researcher asked some background questions as shown in Appendix D, to determine whether that firm would fit the criteria of the study. The criteria that each firm was judged against is as follows:

1. Firm must be a consumer or industrial goods firm.
2. The purchasing function of the firm must have been involved in international purchasing for at least two years, so that they have established a history of experience on which to draw.
3. The firm must be involved in some coalitional types of international purchasing relationships which they feel are important economically, strategically, or both.

If the firm fit the study criteria, the researcher would explain the research and the key areas which the research would probe to the contact, and ask if they were interested in participating. If the key contact expressed an interest, the researcher would try to get additional

names within the firm, and send out the advance, written questionnaire.

Selection of Interview Candidates

The goal of the interviewing process was to ascertain the impact of international supply chain management involvement on the purchasing function of the firm. Thus, selection of the interview candidates was very important. The key contact person within the firm was asked to recommend other potential contacts within the firm, and to notify these potential contacts that they would be contacted by the researcher. While not always possible, it was desirable to use multiple contacts in each case study organization. Multiple informants provide a range of opinions, and reduce the bias of dependence on one individual.

Data Collection

Personal interviews were selected as the key method of data collection for this stage of the research. Personal interviews were chosen because they allowed the researcher the flexibility to probe, clarify issues, and pick up on non-verbal communication cues. This flexibility and ability to probe was desirable in an exploratory study such as this.

In addition, there is evidence in the literature that some firms who believe that they have coalitional supplier

relationships do not, in that risks and rewards are not shared (Spekman 1988, Shapiro 1985, Levine 1986). Due to the complexity and numerous definitions of coalitional relationships today, it would be difficult to get a consistent definition in a survey situation. Self reporting of the type of relationship could be based on widely disparate definitions. Yet, the classification as to the type of international supplier relationship was a key variable in stage two of the research. Use of an in depth personal interview alleviated this definitional problem.

Further, there appeared to be relatively few firms in practice who really have a coalitional international relationship. It would be difficult to identify and reach those firms on a large scale. Finally, as noted by Spekman (1988) and Barry (1989), not all purchased items have enough volume or strategic importance to warrant the extra effort of maintaining a coalitional relationship. Thus, even firms involved in some coalitional type of international purchasing relationships are likely to also be involved in other categories of supplier relationships, like supportive and arms-length. The goal of this research was to focus the interviewee on a specific type of relationship when the interviewee responded to the questionnaire. Concentrating on a specific type of relationship is most effectively achieved in a focused interview setting.

The interviewees were asked to provide the researcher with any policy statements regarding purchasing, purchasing responsibilities and procedures, and coalitional relationships which the firm might have. A review of written policy allowed the researcher an additional means of verifying the type of international purchasing relationships in which the firm participated. In addition, the researcher asked the interviewees to fill out a copy of the written questionnaire in Appendix E and return it before the interview. Completion and return of the written questionnaire prior to the personal interview allowed the researcher and the interviewee to be more prepared for the interview.

The purpose of the advance questionnaire was to provide the researcher with background information on the firm and the role and responsibilities of the purchasing function within the firm. In addition, the written questionnaire addressed specific issues that could be more readily quantified, like degree of involvement and importance of pre-specified factors. Issues addressed in the written questionnaire were those that generally would not require further probing and interpretation. Thus, the written questionnaire allowed both the interviewer and interviewee to make better use of the interview time. Specifically, the written questionnaire was designed to address:

1. Company background information, such as industry, type of business, annual sales, value of purchased goods, percentage of goods purchased internationally, and reporting relationships of the purchasing function.
2. The role of the purchasing function. A key objective of this research was to look at the role of the purchasing function when the purchasing function was involved in international coalitional purchasing relationships.
 - a. The scope of activities and responsibilities of the purchasing function in terms of job content and degree of task responsibility. The purpose here was to understand the responsibilities of purchasing functions involved in coalitional international purchasing relationships.
 - b. The skills which the buyer felt were key to successful job performance. The purpose here was to look at perceived skill requirements for purchasing functions involved in coalitional international purchasing relationships.
3. Organizational issues associated with the involvement of the purchasing function in international purchasing relationships.
 - a. The key success factors that have contributed to the successful role of the purchasing function in international purchasing relationships.
 - b. The barriers to success that the purchasing function has had to overcome, or that remain to be overcome.

The personal interview had five parts, as shown in the interview protocol in Appendix F. The first part covered general background information on the structure of the purchasing organization. The background and organizational information helped the researcher develop an understanding of the structure of the purchasing function within the company, and pick up on any unusual situations which may affect the purchasing function. The second part of the

questionnaire covered information on the firm's strategic planning process, and the purchasing function's input into strategy. The third section looked specifically at how those in the purchasing function perceive their status in the organization. The fourth section explored key international relationships and interactions within the purchasing function, while the fifth part of the interview protocol explored the factors that have contributed to and hindered international purchasing relationships within the firm, building on responses from the written questionnaire. Specifically, the interviewee was asked to discuss:

1. Background information regarding the structure of the purchasing function of the firm, and which tasks are centralized versus decentralized within the purchasing function. The goal here was to explore whether a certain type of organizational form is associated with international coalitional involvement.
2. The strategic planning process of the firm, and the role of and involvement of the purchasing function in strategic planning. The reason for this line of questioning was to examine the strategic input of purchasing functions which are involved in coalitional international purchasing relationships.
3. The strategic positioning of the purchasing function within the firm. This was examined in terms of the attitudes of buyers regarding their perception of the status of the purchasing function within the firm. The purpose of this questioning was to see whether purchasing functions involved in international purchasing relationships perceived that they had a relatively high organizational status.
4. The nature of the interaction of purchasing functions involved in with international coalitional relationships with their trading partners.
 - a. The reason that international coalitions were chosen rather than domestic coalitions.

- b. The nature of the purchasing function's involvement in international coalitional relationships, from choosing the partner to ongoing management of the relationship.
5. Organizational issues associated with the involvement of the purchasing function in international purchasing relationships.
 - a. The key success factors that have contributed to the successful role of the purchasing function in international purchasing relationships, lessons learned and changes in number of coalitions or type of involvement anticipated in coalitional relationships in the future.
 - b. The critical barriers that the purchasing function has had to overcome, or that remain to be overcome, relationships that have failed, and what could be done to prevent future failure.

The purpose of section five of this part of the research was to provide information for the development of the prescriptive model for implementing international purchasing relationships.

The personal interviews were conducted at the interviewee's place of business. Two hours were allowed for each interview. In practice, the interviews varied in length from one and one-half to three and one-half hours. The researcher took written notes during the interviewing process and recorded each interview. Tape recording the interview allowed the researcher to verify that the written notes were correct and consistent.

Data Analysis and Reporting of Results

This stage of the research was both descriptive and prescriptive in nature. The descriptive and prescriptive analyses each had a different goal.

Descriptive

The goal of the descriptive part of this stage of the research was to describe, based on personal interviews and written questionnaire responses, the nature of involvement, and the role and the strategic positioning of the purchasing function's which were involved in international coalitional purchasing relationships. The descriptive portion of the case study research relates to research proposition A above.

The nature of the case study portion of the research was exploratory and qualitative. Thus, conclusions regarding the validity of the research propositions were based on the weight of the evidence.

This research explored, for purchasing functions of firms with coalitional international purchasing relationships:

1. The scope of purchasing activities
2. The skills required to perform the purchasing job successfully
3. The input of the purchasing function in the strategic planning process of the firm
4. The organizational structure of the purchasing function

5. The attitudes of members of the purchasing function regarding their status within the firm
6. The way in which the role of the purchasing function in international coalition relationships changes over time
7. The reason that firms choose international, rather than domestic coalition partners

Prescriptive

The prescriptive part of this research entailed developing a set of guidelines for successfully developing and implementing international supply chain management within the purchasing function of the firm. A prescriptive model was developed based on the literature review and responses received in the personal interviewing process.

This model focused specifically on the stages of development and implementation of a coalitional international purchasing relationship strategy from the perspective of the purchasing function of the firm. In addition, this normative guide proposed to distill from the research the critical success factors for each stage in the development of an international coalitional purchasing relationship within the purchasing function of the firm. These were the type of issues, as identified by the literature and personal interviews, that really appeared to advance the favorable progress and growth of coalitional type international purchasing relationships. Thus, the goal of this part of the study was to create a model which can serve as a road map for implementation of a

coalitional international purchasing relationship from the perspective of the purchasing function of the firm.

Summary

Chapter III has presented the methodological approach used to conduct this research. The approach combined two methodologies. First, stage one of the research created a secondary data base to use as the basis for developing a broad understanding of international coalition activity in general, and in purchasing specifically. Findings from stage one of the study were used to focus the issues and search for case study firms in stage two. Stage two of this research used an in depth case study methodology to explore the implications of international purchasing coalition involvement on the purchasing function of the firm. The results of implementing the research methodology presented in Chapter III are discussed in Chapter IV. Conclusions and implications of the research are presented in Chapter V.

CHAPTER IV
DATA ANALYSIS AND FINDINGS

Introduction

Chapter IV presents the results of the two phases of the research: the creation and analysis of an international coalition data base, and the execution of case studies which examined the impact of international coalition involvement on the purchasing function. This chapter is organized in to three major sections:

1. Results related to the research hypothesis associated with The Wall Street Journal data base.
2. Results related to research propositions regarding the impact of international coalition involvement on the purchasing function, associated with the case study phase of the research.
3. Other findings which broaden the understanding of the research and aid in the development of a prescriptive model for successful implementation of international purchasing coalitions.

Section One of this chapter reviews each hypothesis related to The Wall Street Journal database, and the findings associated with the null and alternative

hypotheses. Hypotheses regarding coalition activity for the total data base are explored first. Examination of the hypotheses related to the total data base are followed by a review of hypotheses related specifically to purchasing coalition activity.

In the second section of this chapter, each research proposition related to the impact of international coalition involvement on the purchasing function is examined. The findings from the case study are analyzed for each proposition. Propositions related to the role of purchasing are discussed first, followed by a review of propositions which focus on the strategic positioning of the purchasing function. Finally, propositions related to the nature of the purchasing functions' involvement in international purchasing coalitions are examined.

Section III of this chapter reviews findings that, while not specifically related to the hypotheses or propositions of this research, add to an understanding of the research results. In addition, this section develops some of the foundations for a prescriptive model for developing and implementing international coalition relationships. The prescriptive model for development and implementation of international purchasing coalitions is presented in Chapter V.

Section I- Results of Hypothesis Testing

The hypotheses examined in this section relate to the variables of the incidence of international coalition formation, purpose of coalition formation, coalition formation by industry, coalition formation by country, and legal form of the coalition agreement.

This section first reviews the hypotheses regarding coalition formation for the entire Wall Street Journal data base. For each hypothesis, the results of testing the null hypothesis are presented. All hypotheses were supported or rejected based on an appropriate statistical testing technique, as shown in Table 14 of Chapter III. Second, the alternative hypothesis and results of testing the alternative hypothesis are presented.

Hypotheses Related to Total Coalition Data Base

This part of the chapter examines the results of hypothesis testing related to the entire Wall Street Journal data base, rather than those specific to purchasing relationships.

Incidence of International Coalition Activity

Two hypotheses related to the level of coalition activity were tested in this part of the research. Both of these hypotheses assume that The Wall Street Journal's reporting of international coalition formation was indicative of the actual level of international coalition activity. These hypotheses dealt with tabulating the

number of international coalitions reported as formed each year in the data base. In addition, the first hypothesis combined the data from the 1983-1988 data base with a count of international coalitions by year from 1970-1982 as reported in the Ghemawat et al. (1986) study. Graphs of the level of coalition activity reported are shown in Figures 1 and 2.

Hypothesis A1: There has been no change in the level of international coalition formation activity by year from 1970 to 1988.

Results: Hypothesis supported.

Predicted: The level of international coalition formation has risen from 1970 to 1988.

Results: Hypothesis rejected.

Findings:

This hypothesis was tested by combining data on the number of international coalitions formed from 1970 to 1982 from the Ghemawat et al. (1986) study, with 1983 to 1988 data on the incidence of international coalition activity from the data base formed for this research. Given that the definition of coalitions used in the current research appears to be slightly more restrictive than the definition used by Ghemawat et al., in that the definition used in this research requires mutual sharing of risks, rewards and/or information, the results here are probably conservative.

The null hypothesis was tested using linear regression analysis to determine the line of best fit. The actual

data and the line of best fit are illustrated in Figure 1. The test performed was a time series, looking for a pattern in the data over time, with the dependent variable being the time period over which the data was gathered. The linear regression tested the null hypothesis of no linear trend in the independent variable, incidence of international coalition activity, versus the alternative hypothesis that there was an upward trend in the data.

A one-tailed F-test for a positive slope of the line was conducted at an alpha level of .05, based on the alternative hypothesis that the level of coalition formation has risen over time. The test yielded a Beta value of .354, and an approximate p value of .068. Thus, hypothesis testing indicated that at a 95% confidence level, the data supports the null hypothesis of no linear trend in the formation of international coalitions as reported by The Wall Street Journal, from 1970 to 1988. The results become significant at an approximate observed confidence level of 93.2%. Therefore, the null hypothesis was accepted, and the alternative hypothesis that there was an upward trend in international coalition activity, as reported by The Wall Street Journal from the time period 1970 through 1988 was rejected.

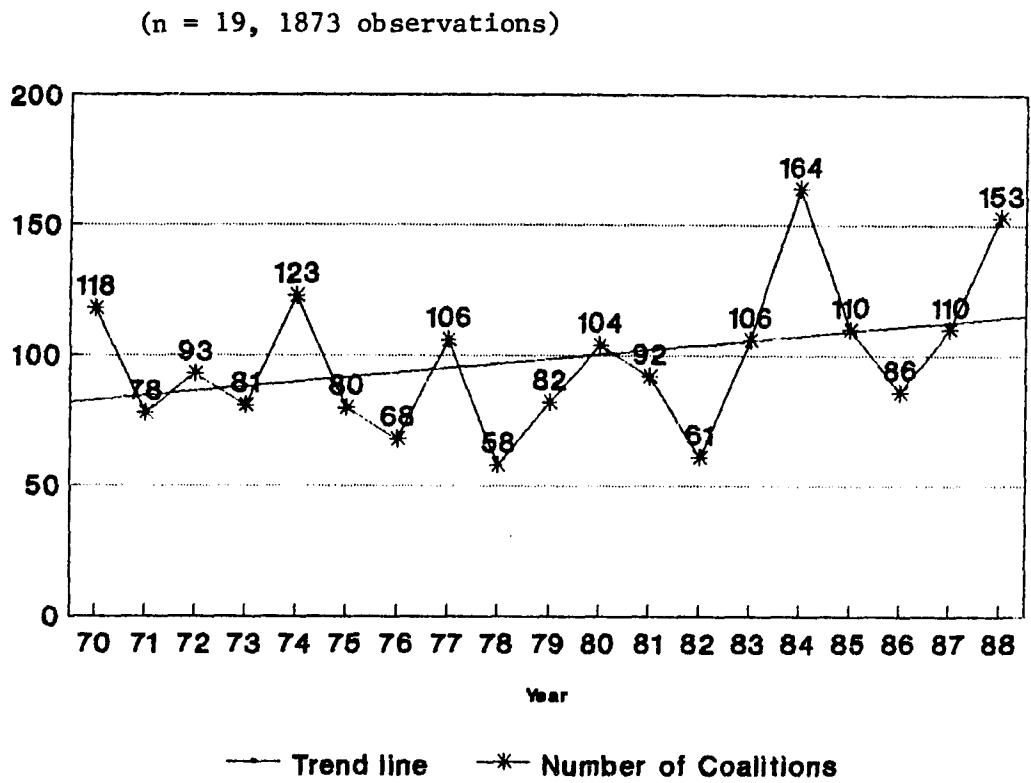


FIGURE 1 - INTERNATIONAL COALITION FREQUENCY

1970-1988

Hypothesis A2: There has been no change in the level of international coalition formation activity by year from 1983 to 1988.

Results: Hypothesis supported.

Predicted: The level of international coalition formation has risen from 1983 to 1988.

Results: Hypothesis rejected.

Findings:

This hypothesis was tested using only data from the data base created for this research, covering the time period from 1983 through 1988. Specifically, count data of the number of coalitions reported each year from 1983 through 1988 was tested using a one-sided Spearman's test for positive correlation. Spearman's test was used rather than linear regression due to the small sample size of six years here. A plot of the data and the line of best fit is shown in Figure 2. Testing was conducted using an alpha value of .05. The results of this test yielded a correlation coefficient of .145, and an approximate p value of .392, which indicated that there is insufficient evidence in the data to support a positive linear trend in the data. Thus, the null hypothesis of no trend was supported at an alpha value of .05.

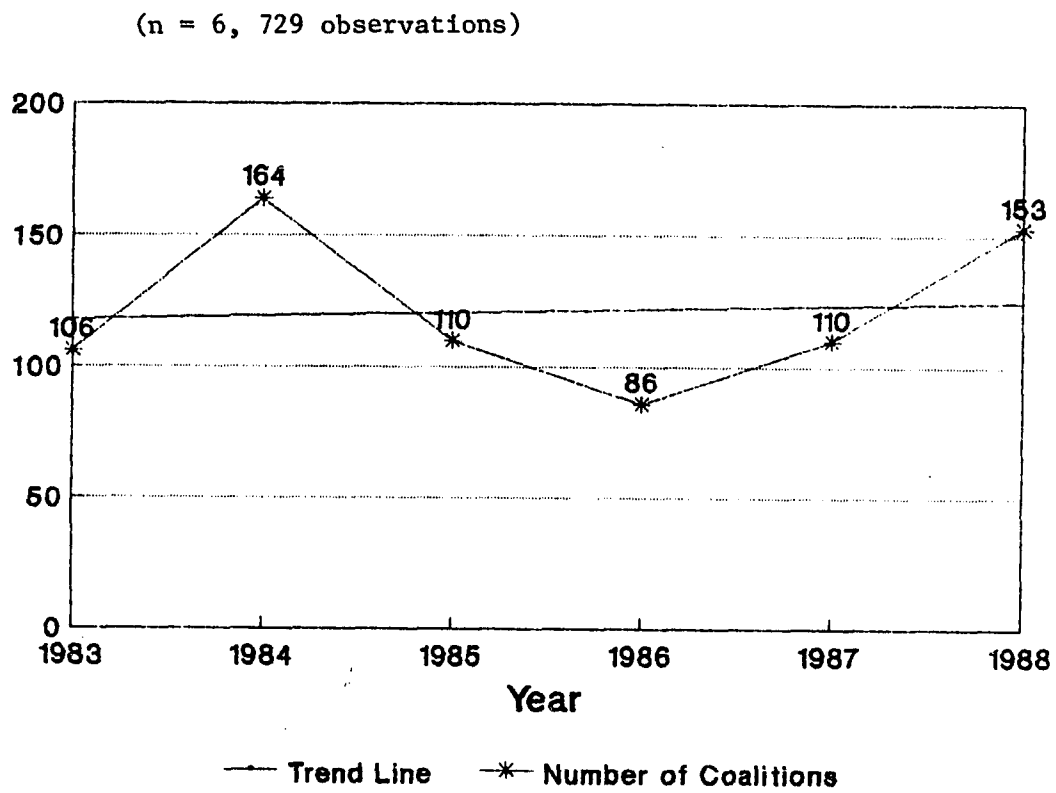


FIGURE 2 - INTERNATIONAL COALITION FREQUENCY

1983-1988

Nature of International Coalition Activity

The remaining hypothesis related to the total Wall Street Journal data base dealt with the nature of the international coalitions formed. These hypotheses explore the purpose given for coalition formation, single versus multiple purpose coalition activity, countries involved in the coalition, industries involved in the coalition, and the legal form of the coalition agreements. All hypotheses tested here were tested using the data base formed for this research, spanning the time period from 1983 through 1988.

Hypothesis A3: There is no difference in the incidence of international coalition formation by purpose of coalition.

Results: Hypothesis rejected.

Predicted: The most frequent single reason given for forming international coalitions will be operations.

Results: Hypothesis supported.

Findings:

This hypothesis test analyzed only those coalitions for which a single purpose was given, examining the following reasons for coalition formation: operations, logistics, purchasing, technology and marketing/sales /service. Testing the null hypothesis of no difference in the incidence of coalition formation by purpose was rejected using a Chi-square test and an alpha value of .05. The p-value was less than .0001.

Testing with 95% simultaneous confidence intervals revealed that coalitions formed for operations purposes clearly dominated all of the other purposes, accounting for 51% of the single purpose coalitions. Thus, the alternative hypothesis that operations was the most prevalent single purpose given for coalition formation was supported, at a simultaneous confidence level of greater than 99.9%. The composition of the data according to coalition purpose is shown in Figure 3.

Hypothesis A4: There is no difference in the incidence of international coalition formation by single versus multiple purpose coalitions.

Results: Hypothesis rejected.

Predicted: Most coalitions are formed for more than one reason.

Results: Hypothesis rejected.

The null hypothesis of no difference in the incidence of coalition formation by the number of purposes given for forming the coalition was tested by comparing the number of coalitions formed for single versus multiple purposes during the time period 1983 through 1988, using a one-sided Chi-square test with an alpha value of .05. The null hypothesis was rejected at a p-value of less than .0001.

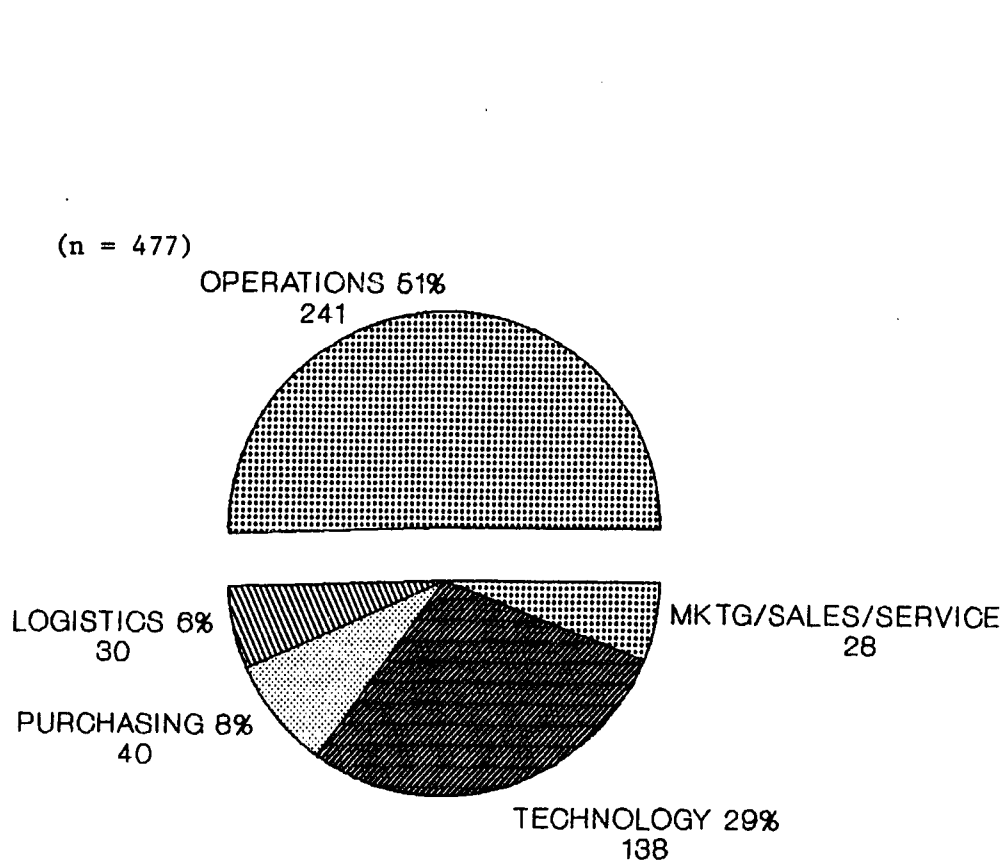


FIGURE 3. COALITION FORMATION BY PURPOSE - SINGLE PURPOSE COALITIONS

The alternative hypothesis, that most coalitions are formed for more than one reason, was also rejected using a chi-square statistic and an alpha value .05. The observed significance level was less than .001. As illustrated in Figure 4, multiple purpose coalitions accounted for 34% of the coalitions, while single purpose coalitions accounted for 66% of the coalitions. Thus, simultaneous confidence intervals revealed that single purpose coalitions were dominant, at a confidence level of in excess of 99.9%.

Hypothesis A5: There is no difference in the incidence of international coalition formation by country.

Results: Hypothesis rejected.

Predicted: Industrialized, market economy countries will have a higher incidence of coalition formation.

Results: Hypothesis supported.

In examining the country in which an international coalition was located, 553 coalitions were identifiable as located in a single country. These coalitions countries were classified according to whether the country was considered a developing country, an industrial market economy, a high-income oil exporter, or an east European non-market economy. These classifications were based on The World Development Report 1986 classification of principal country groups. The classification groups all of

(n = 722)

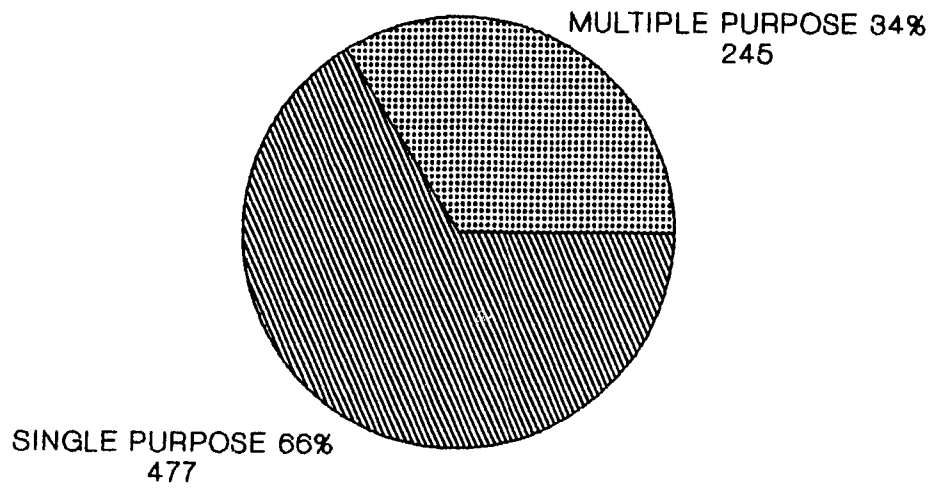


FIGURE 4. COALITION FORMATION BY PURPOSE - MULTIPLE PURPOSE COALITIONS

the countries in this data base into developing countries, industrial market economies, Eastern European non-market economies, and high-income oil exporters, as detailed in Appendix H.

This hypothesis was interested in comparing only the developing countries and the industrial market economies. Five-hundred and thirty-five of the 553 single country coalition locations fell into these two groups. Of this 535, 358 of the coalitions were formed in countries classified as industrial market economies, while 177 were located in developing countries. Using a chi-square statistic with an alpha value .05, the null hypothesis of no difference in coalition incidence by coalition location country was rejected in favor of the alternative hypothesis that more coalitions were located in developed countries. The alternative hypothesis was accepted with a confidence level of greater than 99.9%.

Hypothesis A6: There is no difference in the incidence of international coalition formation by industry.

Results: Hypothesis rejected.

Predicted: Coalition activity varies by industry, with energy, chemical/pharmaceutical, other machinery, auto, aerospace, computers, telecommunications and other electric dominating.

Results: Hypothesis accepted.

This hypothesis was tested using a Chi-square statistic at an alpha value of .05. There were 1612 parent firms represented in this data base. Seventy-one of those

were non-classifiable by industry, and 42 represented a country involved in a coalition, rather than a specific company. The remaining 1499 companies were classified into 19 manufacturing and five service sector industries, as detailed in Appendix I.

The null hypothesis of no difference in international coalition incidence by industry was rejected at a p-value of less than .0001. Testing with one-sided simultaneous 95% confidence intervals revealed that the expected industry classifications had the highest coalition incidence: energy, chemical/pharmaceutical, computers, other machinery, auto, aerospace, telecommunications and other electric. International coalition incidence was significantly higher in the above industries than the remaining industries.

Hypothesis A7: There is no difference in the incidence of international coalition formation by legal form of the coalition.

Results: Hypothesis rejected.

Predicted: Joint ventures will be the most common legal form of agreement for international coalition formation.

Results: Hypothesis supported.

This hypothesis was tested using a Chi-square statistic at a .05 alpha value. The legal form of agreement was classified according to the categories of joint venture/equity agreement, licensing agreement, supply agreement and contract, as defined in Table 10 of Chapter III. The null hypothesis of no difference in coalition

incidence by form of agreement was rejected, at a p-value of less than .0001.

One-sided, simultaneous confidence intervals were developed using a 95% confidence level. This revealed that joint ventures/equity agreements were the most dominant legal form of international coalition as reported from 1983 to 1988 in The Wall Street Journal data base created for this research. As shown in Figure 5, joint ventures/equity agreements made up 65% of the international coalitions reported here.

Hypotheses Related to International Coalitions in Purchasing

Incidence of International Purchasing Coalitions

The incidence of international purchasing coalitions was tested as in hypothesis B1, which examined the formation of purchasing coalitions from 1983 through 1988. Purchasing was not broken out as a reason for coalition formation in the Ghemawat et al. study, so the testing did not include any earlier data.

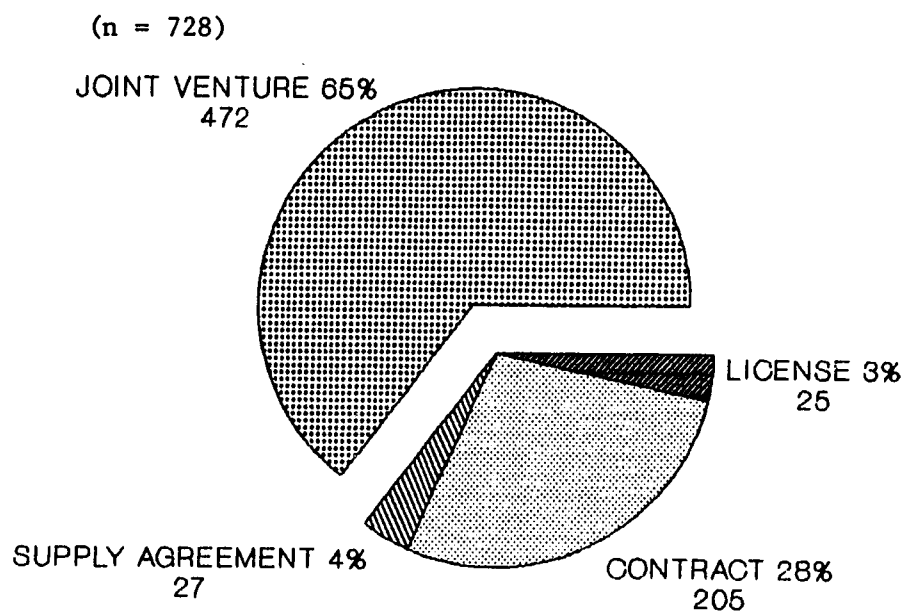


FIGURE 5. COALITIONS BY LEGAL FORM TOTAL DATA
1983-1988

Hypothesis B1: There has been no change in the level of international coalition formation in purchasing activity from 1983 to 1988.

Results: Hypothesis supported.

Predicted: There has been an increase in the level of international coalition formation in purchasing from 1983 to 1988.

Results: Hypothesis rejected.

This hypothesis was tested using Spearman's test of correlation at an alpha level of .05. Test results supported the null hypothesis of no pattern in international coalition formation from 1983 to 1988, with a correlation coefficient of .029 and an approximate p-value of .479. Thus, the data did not reveal an upward trend in international purchasing coalition formation in the time period from 1983 to 1988, as illustrated in Figure 6. The alternative hypothesis of an upward trend in international purchasing coalition formation was therefore rejected.

Hypothesis B2: There is no difference in the nature of international purchasing coalition formation by country.

Results: Hypothesis rejected.

Predicted: Industrial market countries will be more likely than developing countries to be on the buying/receiving than the selling/supplying end of supply agreements.

Results: Hypothesis supported.

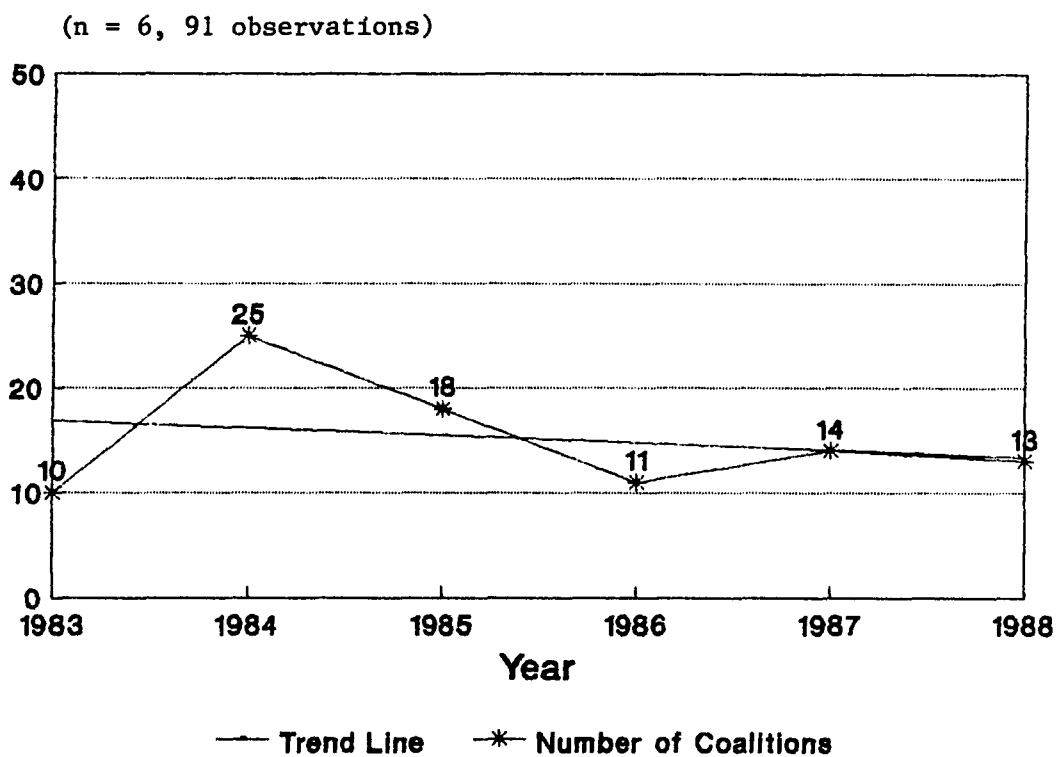


FIGURE 6. INTERNATIONAL PURCHASING COALITION

FREQUENCY 1983-1988

Findings:

The null hypothesis that there is no difference in the incidence of international purchasing coalitions by country was tested by comparing the ratio of purchasing coalitions involving industrial market countries on the receiving end of purchasing coalitions to the ratio of developing countries on the receiving end of purchasing coalitions. These purchasing coalitions could involve raw materials, components or finished goods purchased for resale.

This hypothesis was tested using a difference between proportions test, testing the null hypothesis that the two preceding ratios were equal. A one-sided test at a .05 alpha level caused rejection of the null hypothesis. Further analysis revealed that the alternative hypothesis, that industrial market economies had a greater likelihood of involvement as a receiver from developing countries in international purchasing coalitions, was supported with approximately a 99.9% confidence level.

Hypothesis B3: There is no difference in the incidence of international purchasing coalition formation by industry.

Results: Hypothesis rejected.

Predicted: Coalition activity varies by industry, with energy, chemical/pharmaceutical, other machinery, auto, aerospace, telecommunications and other electric dominating.

Results: Hypothesis accepted for the auto industry, other electric, machinery, and computer industries. Hypothesis rejected for the remaining industries.

This hypothesis was tested using a chi-square statistic at an alpha level of .05. There were 179 parents in this data base which were involved in purchasing coalitions. Of these 179 parents, eight were non-classifiable, and eight represented countries. The 163 remaining parents were companies representing 12 manufacturing industries and three service sector industries, as detailed in Appendix I.

The null hypothesis of no difference in the incidence of international coalition incidence by industry was rejected with a p-value of less than .0001. One-sided simultaneous confidence intervals were developed using a 95% confidence level. This revealed that the automotive, other electric, machinery and computer industries dominated in terms of international coalition formation. The next most prevalent industry in purchasing coalitions was non-metal manufacturing, which was significantly higher than the remaining industries. Thus, the alternative hypothesis regarding the dominance of coalition formation by industry was supported for the auto, other electric, machinery and computer industries. The alternative hypothesis was rejected for the energy, chemical/pharmaceutical, other machinery, aerospace and telecommunications.

Hypothesis B4: There is no difference in the incidence of international purchasing coalition formation by legal form of the coalition.

Results: Hypothesis rejected.

Predicted: The most common legal form of international coalition will be a supply agreement.

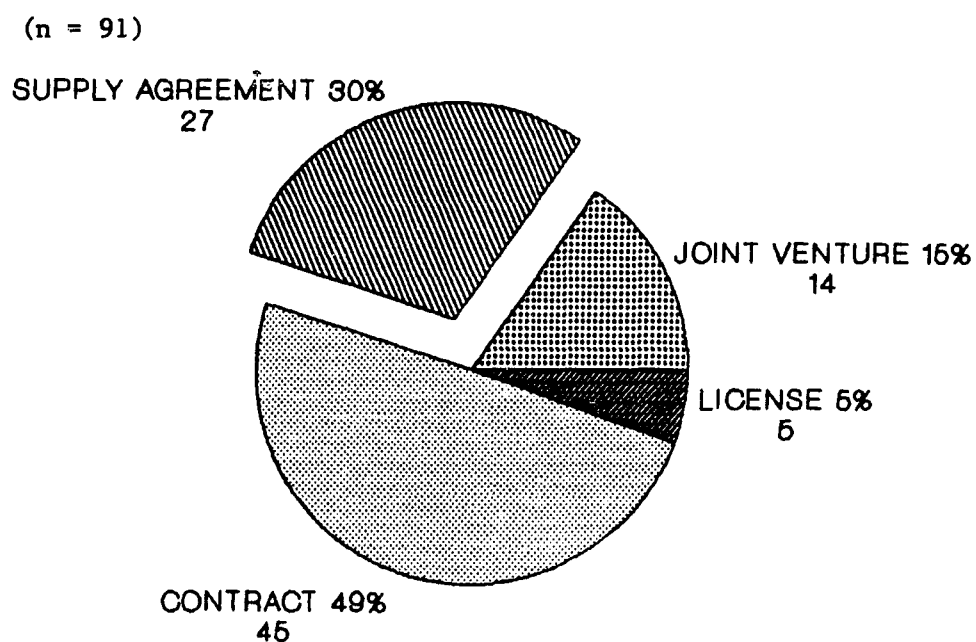
Results: Hypothesis rejected.

The null hypothesis that there is no difference in the incidence of coalition activity by legal form was tested using a chi-square statistic at an alpha level of .05. The relative frequency of only purchasing coalitions by legal form is illustrated in Figure 7. The null hypothesis was rejected at a p-value of less than .0001.

One-sided simultaneous confidence intervals revealed that while supply agreements were significantly higher than joint ventures or licensing agreements in international purchasing, they were significantly lower than contracts. Thus, the alternative hypothesis that supply contracts prevail was also rejected. The data indicated that contracts were the predominant legal form of agreement in international purchasing coalitions, with an approximate confidence level in excess of 99.9%.

Summary

This section has presented the results of hypothesis testing based on The Wall Street Journal data base. Hypothesis testing revealed that that was insufficient evidence to support a linear trend in the formation of international coalitions for the period 1970-1988 for the total data base, and for the period 1983-1988 for the total data base or the purchasing only subset of the total data base.



Note: This data refers to purchasing coalitions only, whereas Table 5. refers to the total data base.

FIGURE 7. COALITIONS BY LEGAL FORM
PURCHASING DATA 1983-1988

Certain patterns were apparent in the data. For the total data base, hypothesis testing revealed that coalitions formed in the operations category had the highest frequency of any purpose category, clearly dominating all other categories. Further, most coalitions were formed for a single purpose, rather than multiple purposes, and involved partners located in industrialized countries. Certain industries were also overrepresented as coalition partners. These industries included the automotive industry, computers, energy, chemical/pharmaceutical, other machinery, aerospace, telecommunications and other electric. In addition, the joint venture legal form dominated other legal forms of coalitions in the total coalition data base.

Summarizing the findings regarding only coalitions formed in the purchasing category, nearly half of the purchasing coalitions were formed for multiple purposes. Coalitions between industrial and developing countries were likely to find industrial countries on the receiving end of such agreements, buying materials and goods rather than selling them. In addition, certain industries dominated in coalition formation: automotive, computers, other electric and machinery. Finally, the most frequent legal form for purchasing coalitions found in this data base was contractual

The next section details the research findings relative to stage two of the research, the case studies.

Section II- Analysis of Research Propositions

This section examines the research propositions presented in Chapter III based on the analysis of the case study findings. Due to the limited number of case studies included in this research, the findings presented here are exploratory in nature. The goal here was to develop an understanding of the implications of international purchasing coalition involvement on the purchasing function, to draw preliminary conclusions and to serve as a basis for future research and model development.

A copy of the advance, written questionnaire which is referred to in the following discussion is included in Appendix E. A copy of the personal interview protocol is included in Appendix F.

Analysis of these propositions was based on responses from case studies A through E, which are profiled in Appendix G. Due to the major difference in the nature of the business situation and purchasing relationships of case study firm F, a government contractor, firm F was separately analyzed in the "Other Findings" section of this chapter.

Findings are presented based on the inputs of each individual case study participant for propositions A1a and A1b, since propositions A1a and A1b examine the perceived responsibility and skill requirements of the purchasing function, which may vary between buyers, based on

individual experience and expectations. The results presented here were based on information provided in the advance questionnaire, which is shown in Appendix E.

The remaining propositions were analyzed at the firm level, based on responses from the personal interviews. Thus, responses for these items were aggregated for all the individual case study participants within a firm to achieve a firm wide response. These items were believed to be less dependent on the experience of the individual, and more related to the organization which that person represented. Firm wide responses were used for items such as purchasing's input into strategy, the organizational structure, the nature of the purchasing function's involvement in international coalitions, and the reasons for choosing foreign, rather than domestic suppliers.

Research Propositions

**Proposition A: Impact of International Coalition Activity
on the Purchasing Function**

A1. Role of Purchasing Activities/Responsibility

Proposition A1a: Purchasing functions involved in the coalitional type of international supplier relationship will be responsible for a broad range of function spanning activities.

Summary of Findings:

Most of the purchasing functions in this study had at least some responsibility for all the activities surveyed.

Discussion:

This proposition was analyzed based on the answers to question two in the advance questionnaire. This question is reproduced in Table 15. The entire questionnaire is available in Appendix E. Analysis was based on the responses of eight individuals representing five companies, A through E, as profiled in Appendix G. The number of responses associated with each degree of responsibility reported in each category is summarized in Table 15, along with an explanation of each response category.

Proposition A1 examined total purchasing responsibility, examining both domestic and international responsibility combined. Based on the frequency of responses received, all of those included in the case study had total responsibility within the purchasing function for negotiating prices and terms with suppliers. In addition, most of the purchasing personnel surveyed had total responsibility for generating purchase orders, vendor communication on routine issues, price forecasting and sourcing strategy.

At least half of those studied reported routine or total responsibility for vendor selection, gathering information from the vendor and communicating specification changes to the vendor. Sharing of responsibility with a team prevailed in the areas of vendor problem solving and developing new product specifications. Half of those

TABLE 15

Degree of Responsibility for Total Purchasing Activities
Reported by Case Study Participants

Listed below are a number of tasks which the purchasing function may perform. Please respond regarding the purchasing function's degree of responsibility for each task, using the definitions of degree of responsibility provided below.

	Number reporting the following DEGREE OF RESPONSIBILITY				
	no	some	routine	total	team
Reviewing materials requirements		4		2	2
Generating P.O.'s		1		7	
Negotiating price/terms				8	
Vendor Selection			2	2	4
Vendor Communications on routine issues	1		2	2	4
Problem solving with vendor			1	2	5
Gathering information from vendor		1	3	3	1
Arranging inbound transportation		3	1	2	2
Price Forecasting			1	7	
Inventory Control	2	2		1	3
Communicating spec changes to vendor		1	1	4	2
Developing new product specifications	1	1			6
Productivity/cost improvements		1	1	2	4
Sourcing Strategy			1	5	2

Degree of responsibility defined as:

- 1- no responsibility: purchasing function is not involved in this activity in anyway
- 2- some responsibility: occasional involvement, not ongoing involvement
- 3- routine responsibility: responsible for day-to-day, ongoing issues in this area, but not unusual situations
- 4- total responsibility: responsible for virtually all issues in this area of responsibility, from routine to unusual
- 5- team responsibility: a team, task force or group of people which includes representation from the purchasing function, is responsible for this activity .

studied used teams for vendor selection and productivity/cost improvements. Responses varied widely in terms of responsibility for inbound transportation and inventory control.

Skill Requirements

Proposition Alb. Purchasing functions involved in coalitional types of international supplier relationships require a high level of communication, teamwork and cooperation skills.

Summary of Findings:

With the exception of foreign language skills, all of the knowledge /skill areas surveyed in this research were viewed as somewhat to very important, based on mean ratings.

Discussion:

This proposition was analyzed based on findings from question three in the advance questionnaire. This question asked the study participants to, "Please rate the importance of each of the following areas of knowledge or skills for a buyer in effective job performance." The skill/knowledge areas are shown in Table 16. As in the previous proposition, the results represent the findings of eight individuals representing five firms. The frequency of responses for these eight individuals, in terms of the degree of importance of each knowledge or skill area included in the questionnaire is summarized in Table 16. This table also provides a mean ranking of each knowledge/skill area, with -2.00 representing very unimportant, and 2.00 representing very important.

One skill area, teamwork skills, was identified as very important by all of those included in this study, for a mean rating of 2.00. This was followed in importance by negotiation skills, verbal communication skills, and written communication skills, with mean importance ratings of 1.88, 1.75 and 1.50, respectively. Networking within

TABLE 16

Skill/Knowledge Requirements Reported for Effective
Job Performance in the Purchasing Function

	Number of purchasing personnel rating factor as:					MEAN*
	Very Unimportant			Very Important		
	-2	-1	0	+1	+ 2	
Negotiation Skills				1	7	1.88
Teamwork Skills					8	2.00
Understanding of various transportation modes			3	5		.63
Understanding corporate strategy				7	1	1.13
Verbal communication skills				2	6	1.75
Written communication skills			1	2	5	1.50
Networking within the firm				5	3	1.38
Networking with Vendors outside of the firm			2	1	5	1.38
Effective task force participation				5	3	1.38
Engineering or technical knowledge			4	3	1	.63
Foreign Lang Skills	2	1	4	1		-.50
Understanding of Foreign Culture		1	1	5	1	.75
Knowledge of duties/customs regulations			3	4	1	.75
Financial/economic background			5	2	1	.50
Knowledge of how purchased items are used		2	2	2	2	.50
*Mean importance rating						

the firm, networking outside of the firm and effective task force participation were all tied in importance with a rating of 1.38, lying between important and very important. Understanding corporate strategy followed these in importance, at a mean importance rating of 1.13.

Those items which fell between neutral and important included understanding of corporate culture and knowledge of duties/customs regulations, both with mean ratings of .75, and the more specialized knowledge areas of understanding various transportation modes and engineering or technical knowledge, both with mean importance ratings of .63. Finally, financial/economic background and knowledge of how purchased items are used both received a mean importance rating of .50.

Only one item, foreign language skills, received a mean importance rating that was negative, indicating that the item was viewed as relatively unimportant overall. The mean rating of $-.50$ lies between neutral and unimportant. Half of the respondents gave this item a neutral (0) rating.

The remaining propositions were all analyzed at the firm wide level for the eight respondents representing five firms, rather than from the perspective of the individual respondents. Thus, where there was more than one respondent from a firm, the responses were aggregated to a firm wide response for the analysis of the remaining propositions.

A2. Strategic Positioning of the Purchasing Function

Strategic Input

Proposition A2a: Purchasing functions involved in coalitional types of international purchasing relationships will have involvement and input into the strategic planning process of the firm.

Summary of Findings:

The purchasing function of firms involved in international coalitions had involvement and input into the strategic planning process of those firms.

Discussion:

Proposition A2 was analyzed based on answers to questions three through six in the personal interview protocol, which is included in Appendix E. These questions examined whether the firm had a strategic planning process, and if so, the role of the purchasing function in that process. Further, the questions used to analyze proposition A2 explored whether the firm developed strategic objectives for purchasing, the nature of those objectives, and whether the purchasing function had an overall statement of goals and objectives. In all of the five firms included in this analysis, the purchasing function played some role in the strategic planning process of the firm. In all cases, the role of purchasing and the participation of purchasing in the strategic planning process was to support top management and/or divisional goals.

The nature and level of participation in strategic planning varied considerably among firms. In firm A, the individual buyer actually drafted strategy for the items in

that buyer's area of responsibility based on top management goals. Personnel throughout the purchasing function had a high level of involvement in the strategic planning process.

In three organizations, firms C, D and E, the purchasing function had input and determined what the strategy of the purchasing function should be based on divisional goals. Thus, the breadth of responsibility was rather wide, given that it fit into the overall strategy. The purchasing strategies selected were subject to top management approval. In organizations D and E, purchasing also played a key role in setting overall "global" purchasing strategy, which spanned the boundaries of divisions. The role of the purchasing function involved issues such as developing a single supplier to serve common needs that cut across divisional lines, and looking at certain areas of the world for potential sourcing opportunities.

In firm B, the involvement of the purchasing function in strategic planning was limited to planning procurement needs for critical purchased items and support of new products. The role of the purchasing function in strategy was therefore very focused.

In all five of these firms, purchasing had specific yearly goals which they aimed for in support of the corporate and/or divisional plans. In all firms, these objectives were formally updated on an annual basis at a

minimum. Firms A and E stated that the objectives of the purchasing function were reviewed and updated on an ongoing basis, or as needed. Firm B reviewed and updated purchasing's goals quarterly, firm D semi-annually, and firm C updated on an annual basis.

Organization

Proposition A2b: The organizational structure of purchasing functions involved in coalitional international supplier relationships will be a mix of centralized and decentralized organizations.

Summary of Findings:

All of the purchasing organizations included in this research involved both centralized and decentralized purchasing functions.

Discussion:

This proposition was analyzed based upon results from question two in the personal interview, which explored which purchasing activities are performed centrally, and which are decentralized. All of the firms studied had purchasing activities occurring at two or more levels of the firm, as illustrated in Table 17. Table 17 is a partial listing of purchasing responsibilities performed by purchasing functions in all of the firms studied. The purpose of Table 17 is to illustrate that purchasing duties were both centralized and decentralized among the headquarters, divisional and plant levels of all of the firms studied.

For purposes of this research, firms A, B and C were analyzed from the perspective of a wholly owned subsidiary,

as that subsidiary relates to its parent company and plant or local sites. Firms D and E were analyzed from the perspective of a headquarters location, as it relates to divisions and plants or local sites.

TABLE 17

Purchasing Responsibility by Organizational Level Reported by Case Study Firms A through E			
Responsibility	Headquarters	Division/ Sub	Plant/ Local Site
Negotiate overseas buys	A,B,D,E	A,C,D,E	C,D
Determine what to source overseas	D,E	A,B,C,D,E	
Establish common overseas contracts	D,E	B,D	A
Release materials against P.O.'s		A,B,C,D,E	A,B,C,D,E
Deal with vendor problems/issues	D,E	A,C	C

Note: A Profile of each case study firm, cross referenced by letter (A, B, and so on), is included in Appendix G.

Attitudes

Proposition A2c: Purchasing functions which are involved in coalitional types of international supplier relationships will perceive their status in the firm as high, on an equal level with other strategic functional areas.

Summary of Findings:

The majority of purchasing personnel included in this study felt that purchasing had a relatively high level of status within their firm.

Discussion:

The findings for proposition A2c were developed based on responses to questions seven and eight in the personal interview protocol. Questions seven and eight explored the purchasing function's perception of their status and recognition in terms of participation in key decisions, and status relative to other function areas of the firm. In firms A and C, members of the purchasing function felt that they clearly had a very high status as evidenced by their decision making authority, promotional possibilities, and involvement in key decisions. Both of these firms felt that purchasing was one of the highest status and most widely recognized functions in the firm. In firm D, purchasing believed it had a very high status and decision making authority and recognition. However, in firm D, the high status and authority of the purchasing function had been recently won as purchasing took a more active role in team activities, such as planning and decision making at the divisional level.

In firm E, the purchasing function felt that the status of purchasing was mixed, and depended more on the individual in the job than on the function itself. In this organization, purchasing also perceived relatively high status due to the proactive efforts of the purchasing function.

In firm B, those in the purchasing function also felt that the status of the purchasing function was mixed.

Here, however, the way purchasing was viewed varied among functional areas, so that some functional areas communicated well with purchasing and regarded purchasing highly, while others did not. In this firm, purchasing was viewed somewhere between a strategic and a clerical function.

In firms A, C and D, the highest level purchasing executive in the firm was a Vice-President; in firm E it was a Director, and in firm B a Manager. In organizations A, C, D and E, the highest level purchasing executive reported in to a Vice-President. In firm B, the highest level purchasing executive, a manager, reported in to a Director.

Proposition B: The Nature of the Purchasing Function's Involvement in International Coalitional Relationships

Proposition B1: The nature of the purchasing function's involvement in coalitional relationships changes over time.

Summary of Findings:

In all of the firms studied, the involvement of the purchasing function in coalitional relationships was dynamic, rather than static.

Summary of Findings:

Proposition B1 was analyzed based on answers to questions 15 through 18 in the personal interview protocol. These questions explore the nature of international purchasing coalitions over time, and the role of the purchasing function in establishing and maintaining these relationships. All of the purchasing personnel included in

this study indicated that the nature of involvement of the purchasing function in international coalitional relationships changed over time.

In all of these firms, purchasing played a key role in identifying and screening potential international suppliers with which to form coalitions. While purchasing did not always play the key role in the final choice of suppliers, the purchasing function did have input and involvement in that decision making process. During the screening and choice of suppliers, purchasing and other functional areas had intense contact with potential suppliers, evaluating capabilities, quality, management, costs, and other critical factors.

After the supplier was chosen, purchasing would continue to have close involvement, monitoring the supplier to make sure that expectations were clear and that performance met expectations. During the early relationship, purchasing continued to play a key role as the liaison to the supplier, and was a coordinator between the firm and the supplier. Also during this time, key contacts between personnel at both firms were established. In addition, the relationship between the buying and supplying firm often changed, from one of caution and mistrust to one of open communication and trust, as warranted by actual performance and experience.

Once the buyer-supplier relationship became established, the common pattern among the firms ended. In

firms D and E, headquarters purchasing turned the relationship over to the divisions or plants to maintain the relationship. If problems or issues arose, headquarters purchasing would step back in to resolve the problems and work toward maintaining the relationships which had been established. Thus, headquarters was primarily a liaison. In firm D, headquarters purchasing continued to monitor vendor performance against objectives, and help the division deal with discrepancies. In firm E, the headquarters purchasing personnel developed a plant/divisional contact to deal with the supplier, and continue to maintain the relationship.

In firms A, B and C, the level of the purchasing function which originated the relationship continued to maintain the relationship. If the relationship was operating smoothly and meeting expectations, less contact was required to maintain the relationship. If problems and issues arose, purchasing had a more intense level of involvement. Thus, the nature of the buyer-supplier relationship became situational.

All of the firms studied mentioned that if a relationship was going well, the supplier was meeting expectations and a good relationship had formed, the firm would try to establish further business with that supplier, or change the type of agreement they had with the supplier. The nature of that additional business or change in agreement varied from firm to firm.

In firms A, B and C, once a supplier had proven to be reliable and capable, the firm worked with the supplier to develop technology, involve the supplier in design, and share technology and ideas in mutually beneficial areas. Thus, the relationship may have started small and grown as experience, capabilities and business needs allowed. The case study firms emphasized that their coalitional relationships don't just appear, they are nurtured and developed over time, based on experience.

In firm E, a further relationship and sharing may have or may not have been pursued with an excellent coalitional partner. This firm did not "share" much technology because much of their technology was proprietary, and the sharing would tend to be one-way.

In firm D, purchasing sought to develop additional business with the supplier as called for by business demands. Unlike firms A, B and C, the purchasing function of this firm did not specifically seek to transfer functions performed by the firm to the vendor.

Proposition B2: Purchasing becomes involved in international coalitions rather than domestic coalitions due to the inability of domestic firms to meet their needs.

Summary of Findings:

In all of the firms studied, purchasing functions chose foreign rather than domestic sources because a foreign source could better meet the firm's needs.

Discussion:

This proposition was analyzed based on responses to questions 10 through 12 and question 20 of the personal interview protocol. These questions explored why purchasing chose international suppliers initially, why international suppliers were chosen today, and the criteria used to select suppliers to participate in international purchasing coalitions. All of the purchasing personnel from the firms studied indicated that foreign sources were chosen because foreign sources could better meet their needs. A variety of reasons were given, as shown in Table 18.

Most of the firms indicated that foreign sources were pursued due to cost, quality, and availability related issues which made local sourcing in the United States non-competitive. Only firm C indicated external reasons for foreign sourcing: local content laws and tariff barriers associated with overseas manufacturing. Firm C was also the only firm that did not indicate that they would much prefer to be involved in domestic purchases rather than foreign due to distance issues, time lags, language problems and other related issues.

Table 18
Summary of the Reasons Given for Foreign Sourcing

Reasons given for Choosing a Foreign Source	Firm which gave reason
Product availability	A, B, E
Better cost/quality trade off	A, B, D, E
Domestic sources produce over specifications, charge too much	E
Inability to locate a domestic suppliers of the product	A, B, D
Higher total cost domestically	A, B, C, D, E
Best quality/performance available overseas	A, B, D, E
Local content laws in foreign manufacturing (for foreign subsidiaries)	C
Tariff savings from local purchases in overseas manufacturing by foreign subsidiaries	C
Best technology is available overseas	A, D

Note: A profile of each firm is given in Appendix G.

Summary

The preceding section details the findings relative to the case studies. Case study findings indicate that purchasing functions which were involved in international coalition relationships were responsible for a broad range of function-spanning activities, including participation in decision making teams. Those participating in the case study indicated that success in international coalition relationships required a high level of written and oral

communication skills, cooperation and networking skills, and teamwork skills.

The purchasing function of those firms studied also indicated that purchasing had input and supported the strategic planning process of the firm. In addition, purchasing had a relatively high reporting relationship within the firm, and generally felt that the status of the purchasing function within the firm was high.

Purchasing played an active, changing role in international purchasing coalitions throughout the life of these relationships. Finally, purchasing chose to do business with international suppliers due to the inability of domestic firms to meet their needs.

The next section discusses other findings of the research that were not directly related to the hypotheses or propositions of the research.

Section III - Other Findings

The results of hypothesis testing and the interviews with the six firms included in this research brought up a number of issues which were not directly related to the hypothesis testing or analysis of propositions, but contribute to an understanding of international coalitions and the impact of international coalition activity on the purchasing function. The first part of this section

analyzes the results for case study firm F, the government contractor, in light of the research propositions. The second part of Section III addresses other issues raised by the hypothesis tests and analysis of propositions.

Analysis of Case Study Firm F

As previously discussed, case study firm F was analyzed separately due to the fundamental difference in the nature of their business. The only business which firm F was currently involved in was a five year government contract. In the opinion of the case study participants from firm F, and the opinion of the researcher, the exclusivity of firm F's business, coupled with the fixed time horizon of the agreement, drove the focus and nature of their business and the purchasing function. Firm F was analyzed below with regard to the same research propositions which were used to analyze case study firms A through E. To maintain the anonymity of the individual respondents, the results from all propositions for firm F were presented at a firm wide level.

Research Propositions

Proposition A: Impact of International Coalition Activity
on the Purchasing Function

A1. Role of Purchasing

Activities/Responsibility

Proposition A1a: Purchasing functions involved in the coalitional type of international supplier relationship will be responsible for a broad range of function spanning activities.

Discussion:

The purchasing function of firm F had at least some responsibility for all of the activities shown in Table 15. The purchasing function of firm F had total responsibility for generating purchase orders, and team responsibility for problem solving with vendors and sourcing strategy. Total or team responsibility was reported for negotiating prices and terms, vendor selection, and product/cost improvements.

Firm F reported routine or team responsibility for vendor communication on routine issues, and gathering information from vendors. Routine or some responsibility was reported for arranging inbound transportation, price forecasts, inventory control and developing new product specifications.

Skill Requirements

Proposition Alb: Purchasing functions involved in coalitional types of international supplier relationships need a high level of communication, teamwork and cooperation skills.

Discussion:

In examining the skill areas reviewed by this study for firm F, negotiation skills, verbal communication skills and written communication skills all received ratings of 2, very important. These skills were followed in importance by teamwork skills, understanding corporate strategy, networking with vendors outside of the firm, and knowledge of how purchased items are used, which all received a rating of 1.5.

Networking within the firm, effective task force participation, and engineering or technical knowledge all received mean importance ratings of 1.0. Understanding foreign culture, knowledge of duties/customs regulations and financial/economic background all received mean ratings of .5. As in the analysis of results from firms A through E, foreign language skills was the only item which received a negative mean rating, -.5, indicating the respondents felt that it was relatively unimportant.

In addition, understanding of the vendor firm, and acquaintance with key vendor personnel were identified by firm F as additional areas that were very important to the buyer in successful job performance.

A2. Strategic Positioning of the Purchasing Function

Strategic Input

Proposition A2a: Purchasing functions involved in coalitional types of international purchasing relationships will have a great deal of input into the strategic planning process of the firm.

Discussion:

Respondents from firm F noted that their firm did not have a strategic planning process per se. Firm F rather had a contract-oriented focus. Once the contract has been secured, the key was to progress according to schedule, and make money.

Organization

Proposition A2b: The organizational structure of purchasing functions involved in coalitional international supplier relationships will likely be a mix of centralized and decentralized organizations.

Firm F was a division of a larger firm. According to those interviewed for this study, this division was created specifically to support the government contract which firm F was currently working to supply. Although the parent of firm F had other government contract operations, these differed sufficiently in terms of the quantity/nature of the product to warrant creation of this division. This division had only one plant location, which was also where the divisional headquarters and purchasing operations resided. Thus, nearly all of the purchasing activities were decentralized at the divisional level, which was the same as the plant level. The parent company was responsible for audits of the purchasing function and purchasing procedures manuals.

In addition, the contractual relationship with the government directly affected the structure of the purchasing function. Firm F reported that the government contract required that purchasing be represented in the firm by at least a director of purchasing. In this firm, the highest level purchasing executive was a Director of Purchasing, reporting in to a Vice-President of Operations.

Attitudes

Proposition A2c: Purchasing functions which are involved in coalitional types of international supplier relationships will perceive their status in the firm as high, on an equal level with other strategic functional areas.

Discussion:

The purchasing function in firm F was felt to have relatively high status and recognition, in line with other key functional areas. This was demonstrated by the participation of the purchasing function in major decisions, meetings, and important communication.

Proposition B: The Nature of the Purchasing Function's Involvement in International Coalitional Relationships

Proposition B1: The nature of the purchasing function's involvement in coalitional relationships changes over time.

Discussion:

The purchasing function of firm F reported that the nature of their relationship with their international coalition partner had changed over time. Initially, the relationship was established as a routine contract. Their coalition partner had a United States-based agent who firm F initially used as a liaison between their firm and their coalition partner. As time passed, firm F began to use direct contact with their coalition partner almost exclusively.

Initially, the relationship was distant, proceeding according to contract. However, as it became clear that changes to the contract would be required, greater

frequency and depth of communication was required. A mutual trust and confidence built over time, along with a recognition of both coalition partner's mutual dependence upon the other.

Proposition B2: Purchasing becomes involved in international coalitions rather than domestic coalitions due to the inability of domestic firms to meet their needs.

Discussion:

Those interviewed from firm F indicated that the reason why their firm had chosen an international supplier was due to a significant cost advantage. Had there been a competitive United States-based firm, those interviewed felt that the U.S. firm would clearly have been chosen.

Summary Of Findings Related to Firm F

There were many parallels between the five case studies analyzed above, and firm F. Just as in the other five case study firms, the purchasing function of firm F was similarly involved in a wide variety of boundary spanning activities. In addition, communication, teamwork and cooperation skills were all viewed as very important by firm F. Thus, the government contract involvement did not appear to have a differential impact on the involvement of the purchasing function in a wide variety of duties, or the key skills required in the purchasing function.

In terms of the strategic positioning of the purchasing function within the firm, Firm F differed in

that firm F did not have a formalized strategic planning process. In addition, an external factor, government contract requirements, dictated the organization of the purchasing function in terms of requiring at least a director level position in purchasing. This was the highest level purchasing person at firm F, lower than three of the five other cases.

Further, the organizational structure of firm F differed from the other firms, in that the plant and divisional locations were one in the same. As a result, most purchasing activities were performed at the plant or divisional level, rather than being divided between the plant and divisional levels. Therefore, strategic input and organizational structure of the purchasing function of firm F differed from the other case study firms.

One way in which the purchasing function of firm F was similar to most of the other five firms included in this research was that the purchasing function of firm F felt that their status and recognition within the firm was relatively high, in line with other key functional areas.

The purchasing function of firm F also reported changes similar to those reported by the other firms in this research with regard to the nature of the purchasing function's involvement in purchasing coalitions over time. This included the instrumental role of purchasing in supplier selection, and the role of purchasing as the key liaison between the firm and the supplier. In addition,

firm F reported that the firm chose an international supplier due only to cost advantages, and that other things being equal, a domestic supplier would be preferred.

Thus, the major difference between firm F and the other case study firms which were not exclusively involved in government contracting were that the minimum level of the top purchasing executive was specified by the government contract, and that firm F did not engage in a formalized strategic planning process. In addition, firm F was organized so that the divisional and plant level were one in the same.

There is not enough data to conclude whether these differences between firm F and the other firms are related to the exclusive involvement of F in government contract work. It is interesting to note that despite these differences, the role of purchasing within the firm, and the nature of the purchasing function's involvement with international coalition partners within firm F parallels the role and involvement of the other five case study firms.

Analysis of Other Issues

This section discusses other issues of interest to this research not specifically addressed in the hypothesis testing and analysis of propositions. Issues related to the Wall Street Journal data base are discussed first, followed by issues related to the case study analysis.

Issues Related to The Wall Street Journal Data Base

Issue: Multiple purpose coalitions could be viewed as another coalition purpose category, rather than as a paired category to be compared with single purpose coalitions.

Discussion:

One way to test for the significance of multiple purpose coalitions was to simply create an additional purpose category, multiple purposes, and treat it like any other purpose category for analysis. A multiple purpose category was created, and tested using a Chi-square statistic at an alpha of .05. The relative frequency distribution among purpose categories with the additional purpose category of multiple purposes is shown in Figure 8. The observed p-value was less than .0001, indicating that there was a significant difference in the incidence of coalitions by purpose.

To test whether the multiple purpose coalitions were the largest reason given for coalition formation, one-sided simultaneous confidence intervals were created at a 95% confidence level. Testing revealed that multiple purposes as a reason for coalition formation dominated technology, purchasing, logistics and marketing/sales/service coalitions at a confidence level in excess of 99.9%. However, there was no statistically significant difference between the number of coalitions formed for multiple

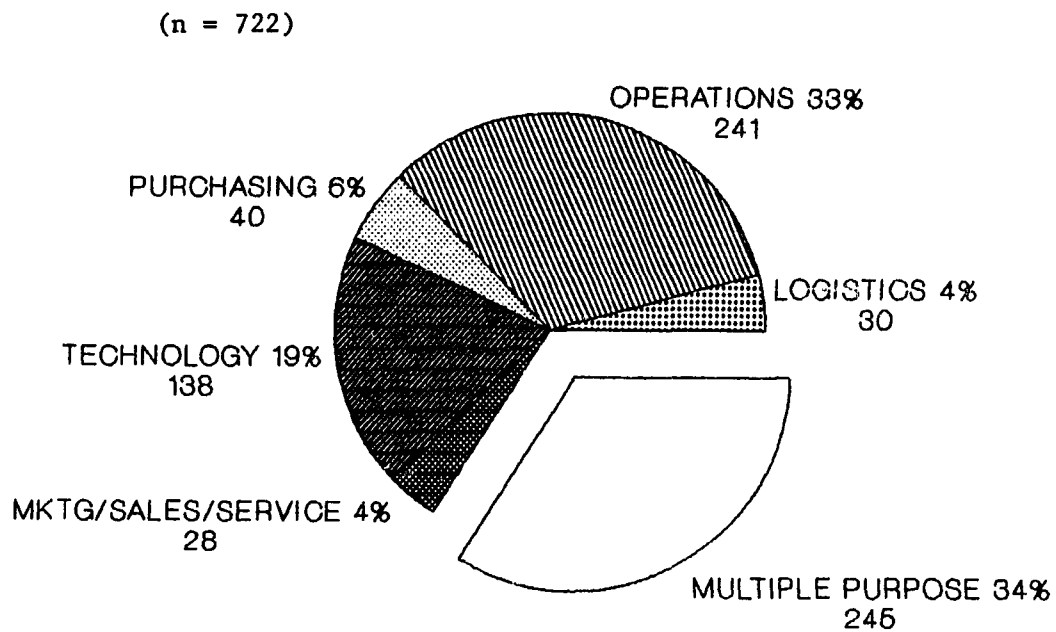


FIGURE 8. COALITION FORMATION BY PURPOSE WITH
MULTIPLE PURPOSE CATEGORY

purposes versus operations. Thus, multiple purpose coalitions did not dominate, even when viewed as one possible category or reason for coalition formation.

Issue: The incidence of multiple purpose coalitions in the total data base versus the purchasing coalition only data base.

Analysis of hypothesis A3 showed that approximately 34% of international coalitions in the 1983 through 1988 Wall Street Journal data base were formed for more than one reason. However, among purchasing coalitions, around 49% are formed for multiple reasons.

If purchasing coalitions were removed from the total data base of international coalitions which were classifiable by purpose, there would be 200 multiple purpose coalitions remaining out of 631 total coalitions. Thus, about 31% of the coalitions in the data base which excludes purchasing coalitions were formed for multiple purposes. Using a difference between proportions test, there was a significant difference between the number of multiple purpose coalitions in the total data base versus the purchasing only data base, with an approximate confidence level of 99.9%. Significantly more purchasing coalitions were formed for multiple purposes than would be expected by looking at the data base as a whole.

Thus, it appeared that purchasing coalitions in stage one of this research were often complicated by the involvement of multiple purposes. This could explain in part some of the case study research findings which

indicated that the purchasing function was frequently involved in team activity relating to suppliers. It appeared consistent that an international purchasing coalition that was formed for reasons in addition to purchasing would have a broader perspective, to encompass the additional, non-purchasing purposes.

In addition, the relatively high number of coalitions formed for multiple purposes in more recent coalition studies such as this research and the Morris and Hergert (1987) study, versus the Ghemawat et al. (1986) study could point to the beginning of a significant trend. This may indicate that businesses are beginning to see coalitions in a broader light, encompassing multiple areas that can draw on the relative strengths of coalition partners.

Issue: The headquarters location of the coalition partners.

Discussion:

The data on coalition formation by country which was tested in hypothesis A5 was also examined in terms of location of parent countries involved in international coalition formation. There were 1611 parent countries in the data base. Of these 1611 countries, 1584 fit the classification of developing country or industrial market economy. Within the 1584 parent countries of interest, 1361 were classified as representing industrial market economies, while 223 were classified as developing countries. This clearly represented a significant difference in the distribution of countries represented by

international coalitions. Testing this hypothesis using a chi-square test statistic would violate the chi-square assumption that each observation (a coalition) be classified in only one category, because each observation had a minimum of two parents. Thus, no statistical test was performed here.

Issue: Given the economic development of less developed versus industrial market economies, it appeared on the surface that industrial market economies would have a higher incidence of international coalition formation. Thus, it may be more meaningful to analyze additional information, such as the number of coalitions in which a country is involved, relative to that country's Gross Domestic Product.

Discussion:

Because it appears obvious that industrialized countries would have a greater likelihood of involvement in international coalitions, another way to view coalition activity would be in terms of the relative importance of these coalitions to the country's economy. While there was no data available on the dollar value of the international coalitions in this data base, the number of coalitions as a ratio of the country's Gross Domestic Product provided a rough measure of the relative importance of coalition activity to a country (Ghemawat et. al 1986). Equating incidence of coalitions with their contribution or importance to an economy, as the ratio of coalition activity to Gross Domestic Product increased, so did the relative significance of international coalitions to that country's economy.

The mean coalition to Gross Domestic Product ratio for the 17 countries representing industrial market economies in this sample was 4.3, while the mean coalition to Gross Domestic Product ratio for the 23 countries representing developing economies was 10.9. A detailed breakdown of Gross Domestic Product Ratios by country is shown in Appendix J. A t-test was performed at an alpha level of .05, to test whether there was any difference in coalition to Gross Domestic Product ratio for coalitions located in developing versus industrial market economies. This resulted in a one-sided confidence level of approximately 96.3%, significant at an alpha of .05. Thus, it appeared that coalitions located in developing countries were relatively more important to the economies of developing countries than coalitions located in industrial market economies were to the industrial market economies.

The data were also analyzed for the country in which the coalition parent companies were located. The mean coalition ratio for the 18 industrial market countries included in the data were 15.2. The mean coalition ratio for the 21 developing countries represented in the data base was 12.8, as detailed in Appendix J. Testing revealed no statistically significant difference between these two values. Using the coalition to Gross Domestic Product ratio as a measure, the evidence suggested that there was no difference in the importance of participation as a partner in international coalitions between industrial

market countries versus developing countries. The finding of no difference in importance holds, even though the frequency of involvement in international coalitions differed markedly between these two groups.

Issue: Examining the incidence of coalition activity by industry does not address the economic importance of international trade by industry. Thus, it may be meaningful to also compare high versus low coalition industries based on world import/export values.

Discussion:

For purposes of this analysis, the 5 industries reporting the greatest number of coalitions formed were compared to the five industries which reported the lowest number (greater than zero) of international coalitions. These industries were compared on the basis of total annual value of exports and imports.

The international import/export values for each of these industries was determined by converting the SIC codes to the International SIC sector classification. 1984 international import and export values in United States dollars were used to calculate the total import/export value of each industry.

Only industries with four digit Standard Industrial Classification codes beginning in 0, 1, 2, or 3 were included in this analysis, since these were the only industries for which import and export data were kept. This classification is detailed in Appendix I. Twelve-hundred and five coalition parents fit into these SIC

classifications. As detailed in Table 19, the five industries which reported the greatest incidence of coalition formation in this data base were other electronics and electrical with 223, automobiles with 154, other machinery with 120, energy with 118 and computers/semiconductors with 100. These five industries accounted for 59.3% of the 1205 parent companies involved in international coalition formation in manufacturing industries. The mean annual value of imports and exports reported by these industries in 1984 was \$254,844.3 million, with a standard deviation of \$109,686.3 million, both reported in United States dollars.

The five industries reporting the lowest non-zero incidence of international coalition formation were textile, clothing and leather, with seven, printing and publishing, with 18, paper and wood with 21, metal and mineral mining, with 23 and agriculture, food and tobacco, with 45. These five industries accounted for 9.5% of the international coalition parent companies involved in international coalition formation in manufacturing industries. The mean annual value of imports and exports reported by these five industries in 1984 was \$128,377.8 million, with a standard deviation of \$107,941.5 million, both in United States dollars.

TABLE 19

Five High and Low Coalition Industries Reported in
The Wall Street Journal Data Base From 1983-1988

INDUSTRY	Coalitions Reported	1984 Import/Export Value (millions)
HIGH COALITION INDUSTRIES		
Other Electronics and Electric	223	\$264,621.2
Automobiles	154	\$253,281.4
Other Machinery	120	\$274,827.0
Energy	118	\$394,416.9
Computers/ Semiconductors	100	<u>\$ 87,075.1</u>
MEAN		\$254,844.3
STANDARD DEVIATION		\$128,377.8
LOW COALITION INDUSTRIES		
Textile, Leather and Cloth	7	\$189,781.8
Printing and Publishing	18	\$ 15,855.5
Paper and Wood	21	\$125,572.6
Metal/Mineral Mining	23	\$ 35,522.8
Agriculture/Food and Tobacco	45	<u>\$275,156.1</u>
MEAN		\$128,377.8
STANDARD DEVIATION		\$107,941.5

(1984 Import/Export value for each industry stated in
 United States dollars from Langer, 1986)

Despite the large difference in mean import/export values between high versus low international coalition incidence industries, a t-test of the mean import/export value of high international coalition versus low international coalition industries run at an alpha value of .05 showed that there was no significant difference between the mean import/export values of these two groups. This was due to the wide variability of import/export dollars within each group, as reflected in the high standard deviation value. The difference became significant at an approximate confidence level of 87.9%. Thus, using the mean value of import/export activity to gauge the economic importance of coalition activity, the evidence suggested that there was no significant difference in international coalition formation by the value of international imports and exports between high versus low coalition industries.

However, this test considered only the absolute dollar magnitude of imports/exports. It would be more meaningful to scale imports and exports relative to total world output. Scaling import/export activity relative to world output would give a much clearer picture of the importance of imports and exports to a given industry than is reflected in the absolute dollar value of imports/exports. The data were not available in a usable format on a worldwide basis. Thus, the validity of the test results above, as a measure of the economic importance of trade by

industry, is questionable. Running the same tests on the purchasing only data base yielded similar results: a finding of no difference between the value of import and export activity between high and low coalition industries.

Issues Related to Case Study Data

Issue: Use of contracts in international purchasing coalitions.

Discussion:

Use of specific, written long-term contracts did not prevail in international purchasing coalitions. Firms A and E did not use long-term contracts because they felt that mutual commitment was more important, meaningful, and likely to carry more weight than long-term contracts if problems occurred. While firm B did use some longer-term, three to five year contracts, the purchasing function felt that the written contracts were not really meaningful. A good relationship was felt to be more important in establishing commitment and flexibility.

Firm D did not use long-term contracts with its suppliers. A longer term contract was not felt to be necessary because either the firm did not consider the supplier a "partner", or the relationship was ongoing, and understood by both parties as such.

Firm C used long-term contracts with automatic renewal options for its coalition partners. However, the

purchasing function at this firm also felt that a close working relationship was more important than a contract in establishing and maintaining an international coalition partner over time.

Thus, all of the purchasing functions of the firms included in this study felt that contracts were either unnecessary, or of limited importance in the success of international coalitional purchasing relationships. While the data from this research was too limited to draw conclusions, it appeared that examining only formal agreements could eliminate from research many relationships that would otherwise be considered international coalitional relationships. Instead of using a contract or a supply agreement, some of the case study firms used an informal agreement. When asked why they believed that establishing good relationships was more important than signing a tight contract, the purchasing personnel interviewed pointed to a number of reasons, such as:

1. Relationships and understandings provide more flexibility to adapt to changing needs and conditions than do contracts.
2. Many contracts are virtually unenforceable on an international basis due to foreign government legal systems and court delays.
3. Time delays in legal enforcement of an international contract tend to be so great that the business the contract dealt with would be lost or otherwise taken care of in the interim.
4. Some foreign cultures conduct business based on personal relationships, so that a handshake is worth much more to them in terms of commitment to a deal than a contract.

While the first reason given could have applied to both domestic and foreign coalition relationships, the next three reasons clearly applied specifically to international coalitions. Thus, the international dimension appeared to have an impact on the legal form of the purchasing relationship.

Contracts and supply agreements were the prevalent form of legal agreement for purchasing coalitions, accounting for approximately 79% of the international purchasing agreements. In contrast, contracts and supply agreements accounted for only about 31% of the agreements in the total data base, with about 4% as licensing agreements, and 65% as joint venture/equity agreements. Thus, the distribution of the legal form of coalition agreement differed between purchasing coalitions and the entire data base. Thus, the finding that informal agreements appeared to be common among international purchasing coalitions may not apply to the total data base.

Issue: The importance of documenting the coalitional relationship expectations.

Discussion:

While the firms included in this research agreed that a written contract was of limited importance, several mentioned that documenting the relationship and expectations was very important. For example, firm C felt that documenting and defining the international coalition

was key to the success of the coalition, so that both partners had common perceptions and expectations.

Firm B and firm E both felt that written documentation of agreements and conversations was very important to successful international purchasing relationships. A primary reason was that due to local practices and differences in the way language is used, unnecessary misunderstandings could be prevented by documenting conversations.

Issue: The future use of international purchasing coalitions

Discussion:

All of the firms included in this research felt that international purchasing coalitions were currently important to them, either in terms of volume or the strategic importance of items purchased. However, none of these firms anticipated much growth in international purchasing coalitions in the future.

Firm A was actively seeking domestic firms to replace international sources, and expressed confidence in the firm's ability to reduce international sourcing. One of the goals of firm A was increased local content, with a resultant reduction in foreign dependency. Firm B was also actively seeking to develop more domestic suppliers, but felt that there would be no great reduction in international purchasing coalitions in the foreseeable future.

Firms C, D, and E all felt that their level of international coalition activity would remain about the same in the future. The countries and players involved may shift, but the numbers were not anticipated to change much as new partners replace old.

Issue: Key success factors in international purchasing coalitions

Discussion:

All of the individuals included in this study indicated that early communication of specification changes and new products was very important to successful international purchasing coalitional relationships. Early communication of specification changes was the only factor which received a unanimous "very important" rating, highlighting the importance of communications in successful coalitions. Other key success factors which were surveyed, and the associated responses, are summarized below in Table 20. The figures listed below the headings "Very Unimportant" to "Very Important" represent the number of responses from the eight individuals included here which fit into each importance category. The mean represents the mean importance rating based on those eight responses.

As indicated in the above table, all of the items surveyed were viewed as at least somewhat important to successful international purchasing coalitions. The second most important items were top management support, and

TABLE 20

Ratings of Key Success Factors
in International Purchasing Coalitions
Given by Case Study Firms A through E

	Number of respondents rating factor as:					MEAN*
	Very Unimportant			Very Important		
	-2	-1	0	1	-2	
Top Management support			1	1	6	1.63
Establishing a task force		1	4	2	1	.38
Training of buyers in international issues			2	4	2	1.00
Sharing examples of successes with others		1	4	2	1	.38
Expanding knowledge through intermediaries, or local expertise			5	2	1	.38
Developing local, foreign-based offices/subsidiaries		1		4	3	1.13
Two-way information sharing			1	2	5	1.50
Viewing purchasing from a global perspective			2	3	3	1.13
Flexibility in agreement				5	3	1.38
Shared goals				3	5	1.63
Vendor value-added			3	3	2	.88
Multiple relationships/points of contact between the firm and vendor		1	3	2	2	.75
Early communication to vendor of specification changes, new products					2	2.00
Vendor visitation			1	2	5	1.50
Personal Relationships		2		2	4	1.00
*Mean importance rating						

shared goals, with a mean importance rating of 1.63. These two factors were followed in importance by vendor visitation and flexibility in agreement, with mean importance ratings of 1.50 and 1.38, respectively.

Issue: Important barriers to establishing and maintaining international purchasing coalitions

Shown below in Table 21 are the case study participant responses to the question "What factors have been important barriers to establishing and maintaining (coalitional) international supplier relationships? The figures listed below the headings "Very Unimportant" to "Very Important" represent the number of responses from the eight individuals included here which fit into each importance category. The mean represents the mean importance rating based on those eight responses.

The variability of responses to this question was quite broad, based on the individual experiences of those included in this case study. The most important barrier experienced overall was poor communication, with a mean importance rating of 1.13. Poor communication was followed in importance by lack of strategic direction and lack of top management support, with mean ratings of .63 and .50, respectively.

TABLE 21

Key Barriers to Successful International
Purchasing Coalitions Reported
by Case Study Firms A through E

	Number of Respondents rating factor as:					MEAN*
	Very Unimportant			Very Important		
	-2	-1	0	1	2	
Lack of Top Management support/interest	1	1	3	1	2	.50
Low status of purchasing function	2		2	3	1	.13
Lack of strategic direction	2		1	1	4	.63
Lack of working knowledge of foreign practices/sources		3	2	1	2	.25
Currency exchange rate differences	2	2	2		2	-.25
Lack of knowledge of customs/duties	3	2	2	1		-.88
Distance barriers	2		3		3	.25
Nationalism(buy American)	1	4	2		1	-.38
Lack of coordination of international purchasing	2		3	2	1	0
Lack of shared goals	2	1	2		3	.13
Lack of trust	1	3	1	2	1	-.13
Poor communication		1	1	2	4	1.13
Cultural differences		2	5	1		-.13
Lack of benefit/risk sharing	1	2	2	1	2	.13
Too many suppliers to deal with effectively	3	3	2			-1.13
Lack of supplier value-added	5	1	1	1		-1.13
*Mean importance rating						

Lack of strategic direction and distance barriers were also seen as somewhat important, with mean importance ratings of .25. Low status of the purchasing function, lack of shared goals, and lack of risk/benefit sharing had also been experienced as somewhat important barriers by those in this study.

Those items which were seen as relatively unimportant barriers to successful international purchasing coalitions included lack of trust, and cultural differences, with a mean importance rating of -.13, and currency exchange rate differences and nationalism, rated at -.25 and -.38, respectively. Other items seen as unimportant barriers to success based on the experience of those studied here included lack of knowledge of customs/duties, with a -.88 rating, and too many suppliers to deal with effectively and lack of supplier value-added, which both received ratings of -1.13.

Summary

This chapter has presented the results of hypothesis testing, and the summary of results based on the research propositions. Other issues related to the research which were not specifically addressed in the research hypotheses or propositions were also addressed here.

Chapter V presents the conclusions based on the analysis of the hypothesis and research propositions. In addition, Chapter V proposes a normative model for developing successful international purchasing coalitions, and discusses the implications of this research on theory and practice.

CHAPTER V

SUMMARY, CONCLUSIONS AND IMPLICATIONS OF THE RESEARCH

Introduction

This chapter presents a summary of the research, draws conclusions based on the findings of the study, and proposes implications of the research for theory and practice. This chapter is organized into five major sections. The first section reviews the research questions and study methodology. The second section presents the hypotheses and propositions tested, and the conclusions based on the results of the testing. Section three provides the implications of this research for theory and practice. The fourth section presents a normative model for purchasing managers to use in developing and implementing international purchasing coalitions. The final section contains further areas for future research suggested by the results of this study.

Section I-Summary of the Research

There were three separate, related areas which this research explored. The first issue was to systematically examine the activity in international coalition formation. The second issue was to determine the nature and the extent of international coalition activity in purchasing. The third issue was to explore the implications of international purchasing coalition involvement on the purchasing function.

The attention that international coalitions have received in the popular and academic press seems to indicate that there is a flurry of international coalition formation today. Yet, there is a lack of consensus in the research regarding whether international coalition formation is truly on the rise (Ghemawat et al. 1986, Morris and Hergert 1987). Stage one of this research focused on creating a data base to address issues related to the growth and patterns in the formation of international coalitions, both in general, and specifically related to purchasing coalitions.

The remaining piece of this problem involved three related issues: examining the role and strategic positioning of purchasing functions involved in international coalitional relationships, understanding the nature of the purchasing function's involvement in international purchasing coalitions and determining how the purchasing function's of firms involved in international

purchasing coalitions have made those relationships work. These issues were addressed by a case study in stage two of the research. While some research has been done exploring the role of purchasing in international buying (Monczka and Giunipero 1984), and the role implications for purchasing when purchasing becomes involved in coalitional relationships (Landeros and Monczka 1989), limited information is available regarding the role of purchasing in the broader context of international coalition activity.

The specific research questions which this study addressed are as follows:

1. What is the nature and extent of international coalition activity today?
2. What is the nature and extent of international coalition activity in purchasing?
3. How is the purchasing function affected by involvement in coalitional international purchasing relationships?
4. What is the nature of the involvement of the purchasing function in international purchasing coalitions?
5. Is there a pattern of critical factors for successful involvement by the purchasing function of a firm in international supply chain management which can be transformed into a prescriptive model to guide the purchasing functions of other organizations?

The basic variables examined in this research included: incidence of international coalition formation, type of international purchasing relationship which the purchasing function maintained, the role of the purchasing

function, and the strategic positioning of the purchasing function. The variable international coalition formation was used in stage one of the research to determine whether a relationship was included in this research. All relationships included in stage one of this study were classified according to the secondary variables purpose or purposes for forming the coalition, legal form of the coalition, coalition country, coalition partner countries, and primary industry of the coalition partners.

The remaining variables were used in stage two of the research. The second variable, type of international purchasing relationship, was defined based on the nature of the relationships that the purchasing function of the firm had with critical international suppliers: arms-length, supportive or coalitional. Only coalitional relationships were of interest in this research. The next variable, the role of the purchasing function, was defined to include the range of activities that were included within the purchasing function, and the skills required to successfully carry out the duties within the purchasing function.

The final variable was strategic positioning of the purchasing function. This variable included the input of the purchasing function into the firm's planning process, the organization of the purchasing function, and purchasing personnel's perceptions of the status of the purchasing function within the firm.

A two stage study methodology was used to conduct this research. The first part of the research provided a broad overview of supply chain management activity by gathering and analyzing data regarding all coalitions formed during the study period, 1983 through 1988, as reported by The Wall Street Journal. The gathering of stage one data preceded the gathering of stage two data. Stage one data was used to gain an understanding of international purchasing coalitions, and to help determine specific companies and industries of interest for inclusion in the case study.

The second stage of the study, exploration of international supply chain management implications for the purchasing function, involved a case study of a group of six companies. The case study data was analyzed to determine patterns and to address the research propositions. The combination of these two methodologies, creation of a data base to provide a broad overview of international supply chain management activity, coupled with an in-depth analysis of specific organizations provided both a breadth and depth of knowledge into the international supply chain management phenomenon.

Section II- Conclusions

This section presents conclusions based on the results of hypothesis testing from stage one of the research, and analysis of the research propositions from stage two of the research. Conclusions related to hypothesis testing of The Wall Street Journal data base are presented first. Second, conclusions related to the case study propositions, are presented.

Conclusions Related to Hypothesis Testing

The hypotheses examined in this section relate to the secondary variables of the incidence of international coalition formation, purpose of coalition formation, coalition formation by industry, coalition formation by country, and legal form of the coalition agreement. This section first examines conclusions regarding the total Wall Street Journal data base, then looks specifically at conclusions related to purchasing coalitions.

Hypotheses Related to Total Coalition Data Base

Incidence of International Coalition Activity

Two Hypotheses related to the level of coalition activity were explored in this part of the research.

Hypothesis A1: There has been no change in the level of international coalition formation activity from 1970 to 1988.

Findings: Using linear regression to determine and test the line of best fit, there was no trend in international coalition formation as reported by The Wall Street Journal, at alpha equals .05.

Conclusions:

The null hypothesis was accepted, that there was insufficient evidence to support an upward trend in international coalition activity between 1970 and 1988, as reported in The Wall Street Journal. The finding of no trend in international coalition activity was consistent with the Ghemawat et al. study, which found that evidence did not support an upward trend for the time frame 1970 through 1982.

The finding of no trend in international coalition formation was not consistent with the findings of Morris and Hergert (1987), who found that there was an upward trend in international coalition activity between 1979 through 1985 as reported in The Economist and The Financial Times. However, Morris and Hergert did not statistically test their findings. Simply looking at the data, or relaxing the confidence level to 93.2%, the 1970 through 1988 Wall Street Journal data would also support an upward trend in coalition formation. Further, while the data base which Morris and Hergert used spanned 1975 to 1986, they chose to look only at the period 1979 through 1985 for the trend. This may indicate that the total data base showed a different pattern.

Hypothesis A2: There has been no change in the level of international coalition formation activity from 1983 to 1988.

Findings: Using a one-sided Spearman's test for positive correlation, results indicate that there was insufficient evidence in the data to support a trend. Thus, the null hypothesis of no trend in international coalition formation was supported.

Conclusions:

The findings from this test do not support the results of the Morris and Hergert study on international coalition formation, which covered the time period from 1975 through 1986. However, the Morris and Hergert research did not statistically test the strength of the trend. Examining the 1983-1988 data graphically, as in Figure 2 of Chapter IV, there appeared to be an upward trend. The results are skewed by the relatively high level of coalition activity in 1984, and the relatively low level of coalition activity in 1986. The relationship must be very strong to support statistically significant results with a small number of data points, such as the six used in this test. The trend here appeared to be too gradual to provide a significant level of correlation with such a small number of data points.

Further analysis of the pattern of number of single purpose coalitions formed by purpose by year also supported the hypothesis that there was no trend in coalition formation over time by coalition purpose. The lack of a trend was supported whether coalition purposes by year were analyzed in terms of the absolute number of coalitions

formed in each purpose category, or by the relative frequency of coalitions formed in each purpose category by year.

Nature of International Coalition Activity

The remaining hypothesis related to the total Wall Street Journal data base dealt with the nature of the international coalitions formed. All hypotheses tested here were tested using the data base formed for this research, spanning the time period from 1983 through 1988.

Hypothesis A3: There is no difference in the incidence of international coalition formation by purpose of coalition.

Findings: Testing the null hypothesis of no difference in the incidence of coalition formation by purpose was rejected using a chi-square test. Simultaneous confidence intervals supported the alternative hypothesis, which revealed that coalitions formed for operations purposes clearly dominated all of the other purposes, accounting for 51% of the single purpose coalitions.

Conclusions:

This finding was consistent with the study performed by Ghemawat et al. (1986), which found operations as the dominant single reason for coalition formation. Of the 1827 single purpose coalitions in the Ghemawat data base, 929, or 50.8%, were formed for operations and logistics reasons.

In order to be comparable with Ghemawat's category of operations and logistics, the categories of operations,

logistics and purchasing were combined in this data base. The combined category of operations, purchasing and logistics accounted for approximately 65% of the single purpose coalitions in the 1983 through 1988 data base. Thus, it appeared that single purpose international coalitions reported for operations related reasons have grown over time.

Hypothesis A4: There is no difference in the incidence of international coalition formation between single purpose and multiple purpose coalitions.

Findings: Both the null hypothesis and the alternative hypothesis that multiple purpose coalitions dominate, were tested and rejected using a one-sided chi-square test. Simultaneous confidence intervals revealed that single purpose coalitions dominated.

Conclusions:

Multiple purpose coalitions accounted for 34% of the coalitions, while single purpose coalitions accounted for 66% of the coalitions. Thus, single purpose coalitions were dominant in the data.

This finding supported the previous work of Ghemawat et al. (1986) and Morris and Hergert (1987). Ghemawat et al. found that 16% of the coalitions in their data base were formed for multiple reasons. Morris and Hergert found that 31.1% of the international coalitions in their data base were formed for multiple reasons. Thus, while multiple reasons for coalition formation do not dominate at

this time, the more recent data, such as this research and the Morris and Hergert study revealed that multiple purpose coalitions comprise a larger share of coalitions formed than was indicated in older data, such as the Ghemawat et al. study. Thus, this may imply that international coalitions are being viewed more broadly today than in the past, encompassing several purposes rather than focusing on only one purpose.

Hypothesis A5: There is no difference in the incidence of international coalition formation by country.

Findings: Use of a chi-square statistic resulted in the rejection of the null hypothesis of no difference in coalition incidence by coalition location country, in favor of the alternative hypothesis that more coalitions were located in industrial market economy countries.

Conclusions:

These findings were consistent with the literature (Ghemawat et al. 1986), in that the vast majority of international coalitions reported in The Wall Street Journal were located in what are considered developed, or industrial market economies. Given the prevalence of industrial market economies in world trade, these results were expected.

Hypothesis A6: There is no difference in the incidence of international coalition formation by industry.

Findings: There were significantly different levels of coalition formation reported by industry, with energy, chemical/pharmaceutical, other machinery, auto,

aerospace, computers, telecommunications and other electric industries clearly dominating.

Conclusions:

The data supported previous research (Ghemawat et al. 1986, Morris and Hergert 1987, Harrigan 1985) which indicated a wide disparity exists in coalition formation by industry. Ghemawat et al. found the greatest level of international coalition activity among coalition partners between 1980 and 1982 representing the following industries: energy, chemical/pharmaceutical, other machinery, and computers and semi-conductors, each accounting for 10 to 19% of the total coalitions in their data base. Morris and Hergert found that five industries accounted for most of the international coalition formation in their data base, with each of these industries accounting for a range of approximately 13 to 24% of the total data base. Those industries were: motor vehicles, aerospace, telecommunications, computers and other electric.

It is interesting to note that there is only an overlap of one predominant industry in the Ghemawat et al. and the Morris and Hergert studies, while the 1983 through 1988 Wall Street Journal data included both predominant industry sets. Thus, the current research has a lower concentration of coalitions by industry, with the eight predominant industries reported here each accounting for between 6% and 15% of the total data base.

These results may imply that international coalition formation is dispersed among more industries, less concentrated in recent time than in the past. On the other hand, these findings may indicate that the Ghemawat et al. and Morris and Hergert studies used different classifications in grouping industries. There is insufficient data to determine whether that is the case.

Hypothesis A7: There is no difference in the incidence of international coalition formation by legal form of the coalition.

Findings: Testing with a chi-square statistic and simultaneous confidence intervals clearly supported the alternative hypothesis that most international coalitions were joint ventures.

Conclusions:

This conclusion is consistent with the previous work of Ghemawat et al. (1986) which found that joint ventures were the most common legal form of coalition agreement in their 1970 through 1982 Wall Street Journal data base, accounting for 41% of the coalitions. In the 1983 through 1988 data base, the joint venture/equity legal form of coalition agreement accounted for 65% of the international coalitions. Thus, taking a financial interest in the coalition venture appears to be common practice.

There was insufficient detail available in the Ghemawat study to determine whether there was any trend in the legal form of coalitions over time, from 1970 through 1982. However, analysis of the 1983 through 1988 data by legal form did not indicate any trend in the pattern of

legal form of agreements for international coalition formation.

Hypotheses Related to International Coalitions in
Purchasing

Incidence of International Purchasing Coalitions

The incidence of international purchasing coalitions was tested in hypothesis B1, which examined the formation of purchasing coalitions from 1983 through 1988.

Hypothesis B1: There has been no change in the level of international coalition formation in purchasing activity from 1983 to 1988.

Findings: Results based on the use of Spearman's test for correlation supported the null hypothesis that there was no trend in international purchasing coalition formation based on international purchasing coalitions reported in The Wall Street Journal data base from 1983 through 1988.

Conclusions:

While there are no previous data specifically related to international coalition formation in purchasing, it was anticipated that purchasing coalition activity would follow the patterns of international coalition activity in general. Further, it was expected that since this hypothesis concentrates on recent time periods, and the more recent research (Morris and Hergert 1987, Harrigan 1988) showed an upward trend in international coalition formation, the data specific to purchasing coalitions would also show an upward trend. However, the presence of an

upward trend in international purchasing coalition formation was not supported here. The lack of trend found in the data could be due to the small number of data points, six years.

Hypothesis B2: There is no difference in the nature of international purchasing coalition formed by country.

Findings: Testing with the method of difference between proportions supported the alternative hypothesis that industrial market economy countries have a significantly greater probability of being on the receiving end of supply agreements than do developing countries.

Conclusions:

In terms of the number of coalitions formed, the data supported that industrial market countries were relying more heavily on coalition partners in less developed countries as a source of supply than as a market for raw materials, components and finished goods. This result was anticipated given the relative cost advantages of less developed versus industrial market economies in terms of labor, and in some cases raw materials, during the time period covered in this data base.

Hypothesis B3: There is no difference in the incidence of international purchasing coalition formation by industry.

Findings: Testing using a chi-square statistic and simultaneous confidence intervals supported the notion of significant differences in coalition activity by industry. International purchasing coalitions reported in The Wall Street Journal data base between 1983 and 1983 were concentrated in the auto, other electric, machinery and computer industries.

Conclusions:

There were no previous studies available which looked specifically at the incidence of international purchasing coalitions by the industries of the coalition partners. Thus, the previous studies (Morris and Hergert 1987, Ghemawat et al. 1986) which looked at the overall coalition activity by industries of the coalition partners were used as a basis for predicting the results of this hypothesis test.

The industries which were represented as prevalent in international purchasing coalitions were actually a subset of the eight industries which were prevalent in the total data base. Thus, the concentration of coalitions among the dominant purchasing coalition industries was higher than the concentration of coalitions in the total data base. The four industries which dominated in the area of international purchasing coalitions, motor vehicle, other electric, other machinery and computers, each accounted for between 15% and 23% of the total number of international purchasing coalitions formed in the data base.

Hypothesis B4: There is no difference in the incidence of international purchasing coalition formation by legal form of the coalition.

Findings: A chi-square test with simultaneous confidence intervals supported that the most common legal form of international purchasing coalition was a contract.

Conclusions:

In formulating the alternative hypothesis, that supply agreements would be the dominant legal form taken by an international purchasing coalition, it was believed that supply agreements would be the logical legal form for purchasing coalitions, which deal with supply. To understand why the data did not support this hypothesis, further analysis indicated that only 51% of purchasing coalitions were formed for the singular purpose of purchasing. The remainder also included other reasons, such as technology and operations. Given that information, it stands to reason that supply agreements were not the dominant form of legal agreement. A supply agreement tends to have a narrower scope than would these multiple purpose international purchasing coalitions.

Conclusions Related to Case Study Propositions

This section examines the research propositions presented in chapter III in light of the analysis of the case study findings. Due to the limited number of case studies used, the conclusions drawn based on the case studies are tentative in nature.

As in the presentation of results related to the propositions in Chapter IV, the conclusions in this section relate to the results of analysis of case study firms A through E.

Findings from propositions A1a and A1b are presented based on the inputs of each individual case study participant. Propositions A1a and A1b examine the perceived responsibility and skill requirements of the purchasing function, which may vary among buyers. For the remaining propositions, responses are aggregated for all the individual case study participants within a firm to achieve a firm wide response.

Research Propositions

Proposition A: Impact of International Coalition Activity on the Purchasing Function

A1. Role of Purchasing Activities/Responsibility

Proposition A1a: Purchasing functions involved in the coalitional type of international supplier relationship will be responsible for a broad range of function spanning activities.

Findings: Most of the purchasing personnel included in this study reported at least some responsibility for all of the activities surveyed. In most cases, purchasing had total responsibility or responsibility shared with a team for all of the activities surveyed in this study.

Conclusions:

The relatively high level of involvement in team activities, and involvement in areas which require vendor interaction found in this research concurred with previous case studies. Previous case studies have found functional interaction to be important when purchasing is involved in coalitional relationships, because the purchasing function tends to be more integrated into the firm and involved

early in projects (Leenders and Blenkhorn 1988, Shapiro 1985).

In addition, as Spekman (1988) and Bevan (1985) suggest, coalitional supplier relationships focus on the buyer-supplier relationship, requiring a broad perspective, coordination of work, and planning out into the future. This research supported the need for a broad perspective and coordination of work as shown by the high degree of buyer involvement in a wide variety of tasks, particularly communicating and sharing of information with suppliers. In addition, the findings of this study supported the role of purchasing in planning in to the future, as shown by the involvement of the purchasing function in sourcing strategy, communicating changes to the vendor, developing new product specifications, and working on productivity and cost improvements.

Skill Requirements

Proposition Alb. Purchasing functions involved in coalitional types of international supplier relationships require a high level of communication, teamwork and cooperation skills.

Findings: All of the purchasing personnel included in this study rated written and verbal communication, teamwork skills, effective task force participation, and networking within and outside the firm as important to very important to effective job performance in purchasing.

Conclusions:

As suggested by Spekman (1988), purchasing functions involved in coalitional types of internal purchasing relationships interact with their vendors as allies, cooperating, sharing and balancing power. Effectiveness in such relationships requires an emphasis on communication, teamwork and cooperation skills, as supported by the results of this research.

A2. Strategic Positioning of the Purchasing Function**Strategic Input**

Proposition A2a: Purchasing functions involved in coalitional types of international purchasing relationships will have involvement and input into the strategic planning process of the firm.

Findings: All of the purchasing functions in this study reported involvement and input into the strategic planning process of their firms.

Conclusions:

All of the purchasing functions in this study were involved in the strategic planning process of their firm through development of a purchasing strategy to support the overall goals of the corporation. The participation of the purchasing function in the strategic planning process found in this study supports previous research which suggests that the involvement of the purchasing function in purchasing coalitions is a strategic issue for the firm, and gives the purchasing function a means of supporting the corporation's strategy (Landeros and Monczka 1989). The

participation of purchasing in strategic planning found in this study supports Freeman and Cavinato's findings (1989, 1990) that the purchasing function's involvement and input as a key player into corporate strategy goes together with managing and establishing close buyer-supplier relationships.

Organization

Proposition A2b: The organizational structure of purchasing functions involved in coalitional international supplier relationships will likely be a mix of centralized and decentralized organizations.

Findings: All of the purchasing organizations included in this research involved both centralized and decentralized purchasing functions.

Conclusions:

The results of this research support Shapiro's (1985) findings from his case studies which suggest that when the purchasing function becomes involved in coalitional relationships, activities tend to be divided between a centralized and a decentralized purchasing function. As in Shapiro's study, the role of the central purchasing function, whether at the headquarters or divisional level, tended to be one of establishing and maintaining important coalitional relationships. In contrast, the role of the decentralized, or plant level purchasing function tended to be one of releasing orders and dealing with routine issues.

Attitudes

Proposition A2c: Purchasing functions which are involved in coalitional types of international supplier relationships will perceive their status in the firm as high, on an equal level with other strategic functional areas.

Findings: In three of the five firms studied, the purchasing function of the firm felt that purchasing had a high level of status within their organization. In two of the five firms, the status of the purchasing function as perceived by purchasing personnel was mixed; felt to be seen as high by some within the firm and low by others within the firm.

Conclusions:

The findings relative to this proposition indicate that the majority of purchasing functions involved in this study perceived purchasing as a high status, well recognized and respected function within the firm. The three purchasing functions which perceived the status of the purchasing function as one of the highest status and most widely recognized functions in the firm, a Vice-President was the highest level purchasing executive. This supported previous research which noted that there was a positive relationship between the involvement of the purchasing function in coalitional relationships and the recognition of the strategic importance of the purchasing function (Landeros and Monczka 1989, Freeman and Cavinato 1989, 1990).

In the remaining two firms, where it was felt by the purchasing function that the status of purchasing was mixed, purchasing also had a lower reporting relationship

within the firm. In one case the top purchasing position was a Director, and in one case a Manager. In four of the five organizations, the highest level purchasing executive reported in to a Vice-President. Thus, while data from five case studies is not enough to draw definitive conclusions, it appears from these case studies that the level of reporting relationship of the purchasing function may be positively related to the status of the purchasing function within the firm.

Proposition B: The Nature of the Purchasing Function's Involvement in International Coalitional Relationships

Proposition B1: The nature of the purchasing function's involvement in coalitional relationships changes over time.

Findings: In all of the firms studied, the involvement of the purchasing function in coalitional relationships was dynamic, rather than static. Further, the level and nature of the involvement of the purchasing function in the relationship was contingent on how established the relationship with the supplier was, and the supplier's performance.

Conclusions:

The results from this study supported the previous research and conceptual work which suggested that the role of the purchasing function in supplier relationships changed over time (Burt 1989, Spekman 1988, Shapiro 1985). As in previous conceptual work, this study found that the initial role of purchasing was to assist in identifying potential suppliers, to assess the supplier's technological, financial and managerial capabilities, and

provide input into supplier selection (Burt 1989, Spekman 1988). All of the purchasing functions studied had intense contact with potential suppliers during the screening and selection of international coalitional suppliers.

As further suggested by previous literature, the research found that after the buyer-seller relationship was established, monitoring the ongoing relationship, and providing continuing communication became the key issues (Spekman 1988, Burt 1989). The purchasing functions in this research all viewed purchasing as the key liaison between their firm and the supplier. If new products were introduced or changes made, purchasing also became involved in those activities. Thus, one important conclusion based on the analysis of this proposition was that the purchasing function played an active, changing role in coalitional relationships from the initial selection of coalition partners, throughout the life of the coalitional relationship.

Proposition B2: Purchasing becomes involved in international coalitions rather than domestic coalitions due to the inability of domestic firms to meet their needs.

Findings: In four of the five firms studied, purchasing functions chose foreign rather than domestic sources because a foreign source can better meet the firm's supply needs in terms of the quality/cost trade off, technology or product availability. In one firm, local content laws and tariff barriers imposed on foreign subsidiaries had a major influence in the use of foreign sources, creating lower costs for foreign versus domestic sources.

Conclusions:

The findings from this study supported the previous work which suggests that firms go through the efforts associated with establishing foreign sources because they perceive that a foreign source can provide a greater overall value than a domestic source (Leenders et al. 1989). Four of the five firms studied indicated a strong preference for domestic purchases due to distance issues, time lags, language problems and other related issues. Three of the five firms studied were actively seeking to increase the use of domestic, as opposed to foreign sources. Thus, given the overall preference for domestic sources among the firms studied, it was consistent that foreign sources were sought only if the foreign source appeared to have advantages over domestic sources.

Section III - Implications of the Research for Theory and Practice

This research provides a number of contributions to better understanding evolving international competitive relationships, and the implications of those relationships on the purchasing function. The contributions that this research makes to theory are discussed first, followed by a discussion of the implications of this research for managers in general, then the implications specifically for

purchasing managers, and finally the implications for suppliers.

Implications for Theory and the Literature

This research contributes to the body of current literature and the theory supporting coalitional relationships in two ways. First, findings from this study make a contribution to the literature base by supporting and extending previous studies. Second, the research results contribute to theory regarding coalitional relationships as a form of competition.

Contributions to the Literature

The results of this research contribute to current literature and studies in international coalition relationships in several ways. First, the findings from phase one of this research, the formation and analysis of an international coalition data base, provide further support for previous research. Unlike most of the previous research into international coalition activity, this research provided for statistical testing of the research findings. In addition, this research contributes to a greater depth of understanding of internal coalitions formed for operations purposes. In particular, this research focuses on coalitions formed for purchasing reasons.

First, findings from this research provide support for the previous research of Ghemawat et al. (1986) and Morris and Hergert (1987). Specifically, this study adds to the literature by supporting the findings of Ghemawat et al. (1986) and Morris and Hergert (1987) that the most common reason for forming a coalition is operations, and that multiple purpose coalitions are significant, though less frequent than single purpose coalitions.

Further, findings from this study support findings that international coalitions are concentrated in the joint venture/equity legal form (Ghemawat et al. 1986), and by industry (Ghemawat et al. 1986, Morris and Hergert 1987). This research found that the same industries were prevalent in international coalitions as did these previous studies.

Second, this research contributes to the base of international coalition literature by statistically testing data base findings. The previous studies most closely related to this research (Ghemawat et al. 1986, Morris and Hergert 1987) did not provide statistical testing. Statistical testing helps provide further credibility to the results of this research and the associated results of previous research into international coalition activity.

Third, findings from this study extend the current knowledge of the purpose or purposes of international coalition activity by examining operations coalitions in greater depth. Better understanding of the nature of operations coalitions is provided by a finer breakdown of

the purposes of operations coalitions into logistics, purchasing and operations. A finer breakdown of operations purposes provides a greater insight into the rationale for coalition formation than provided by the previous literature.

Further, this research expands the body of knowledge and literature regarding international purchasing coalitions by examining the magnitude of international purchasing coalitions, their legal form, and the countries and industries involved. Information regarding the specifics of international purchasing coalitions was previously unavailable.

Contributions to Theory

The findings from this research have implications for economic and industrial organization theory regarding international coalitions as an alternative form of competition. As discussed in the literature review of industrial organization theory provided in Chapter II, supply chain management/coalitional relationships can be viewed as an alternative way of organizing for competitive reasons. Thus, this research adds to the literature related to industrial organization theory.

Williamson (1985) notes that, "The study of organizational innovation has never been more than a poor second cousin to the study of technological innovation." This study contributes to theory by linking the concepts of

transaction cost economics (Williamson 1975, 1985, Coase 1937) to organizational innovation in the examination of international coalition relationships. As suggested by transaction cost theory, this study focused on, "...the details of recurrent contracting under alternative modes of organization," (Williamson 1975 p. 253), specifically looking at the organizational form of international coalitions, using the coalition structure to capture the idea of a recurrent relationship.

The formation of The Wall Street Journal data base to document and classify a large number of international coalitions according to purpose, legal form, country, and so on helps to develop an understanding of where this innovative form of economic organization, the international coalition, is occurring. The relatively widespread occurrence of international coalitions lends support to, "The proposition that economic organization has the purpose of promoting the continuity of relationships by devising specialized governance structures rather than permitting relationships to fracture under the hammer of unassisted market contracting," (Williamson 1985 p. 3). Thus, the findings from this research support the preceding proposition: international coalitions are a specialized form of economic organization that has developed to promote ongoing, efficient market transactions to the benefit of all parties involved. This means of cooperating to better

compete in the market place has received limited attention in the industrial organization literature.

Like contracts and vertical integration, coalition relationships remove the affected transaction from the open market. The findings from the case study portion of this research support the precept of economic organization theory which recognizes that social arrangements and informal relationships are important in understanding the way in which firms organize (Williamson 1985, Harrigan 1985). Case study results supported the importance of good informal relationships and trust in establishing and maintaining effective international coalitional relationships. Findings from the case studies also imply that coalitional relationships were often a type of relationship which develops over time, based on the firm's recognition of mutual dependency, and the ability of trading partners to meet the firm's needs effectively. This supported the work of Jacquemin (1987), who noted that the key to success in strong interfirm relations (coalitions) is contingent upon recognition of mutual dependence between partners.

Implications for Management

The results of this research provide a number of implications for practicing business managers. First, the findings from this research contribute to an understanding of trends and patterns in international coalition activity in recent times. This has important strategic implications for managers in terms of the competitive strategy of rivals and opportunities and threats potentially facing their firm on global scale. In addition, the normative model developed from this research may well have implications beyond the purchasing function, to any firm or function considering coalitional involvement.

Recent international coalition activity

First, this research indicated that over the long-term, 1970 through 1988, there was no statistically supported linear trend in international coalition formation, as reported in The Wall Street Journal. Information regarding international coalition activity is important to practicing managers in understanding new competitive threats, in the form of international coalitions involving competitors. Understanding international coalition activity is also important to practicing managers in formulating competitive strategy, in terms of developing an understanding of the opportunities which may be available to their firm as they look for new ways to compete on an international and domestic scale.

To help managers better understand international coalition activity, this research looked at the nature of international coalitions formed in recent periods, from 1983 to 1988. Results from the data analysis indicated that coalitions in operations were the most common, and that coalitions formed for multiple purposes were also very common. The information provided in this research could help managers to focus and set strategy regarding areas in which to form coalitions. In addition, the break down of international coalitions by industry, country and legal form provides managers with a better understanding of the strategy of competitors in forming international coalitions. This information could be useful to firms whether they wanted to follow a strategy of entering an already successful area, or creating a niche.

Normative development and implementation model

The normative model provided in section IV of this chapter has implications for all firms considering entering into international coalitional relationships. In examining international coalitional relationships as a series of related steps, the model highlights the key success factors and issues at each step in the development of international coalition relationships. This framework should help managers understand the key steps required to form international coalitions. In addition, the information incorporated in the model from both the case study analysis

and the review of the literature should provide managers with the direction to help them to focus on critical issues at each stage of international coalition development.

Implications for Purchasing Practice

This research has five major implications for practicing purchasing personnel. This research contributes to understanding the magnitude and characteristics of international coalition formation, in general and in purchasing specifically. The research findings also have implications for the purchasing function in exploring the role of purchasing and the skills required when purchasing becomes involved in coalitional international purchasing relationships. Third, the research contributes to understanding the strategic positioning of the purchasing function within the firm, when purchasing is involved in international coalitional relationships. In addition, the findings of this research have implications for the role of purchasing in establishing and maintaining international purchasing relationships over time. Finally, this study contributes to purchasing practice by developing a normative model, prescribing an approach to development and implementation of international coalitional purchasing relationships within the purchasing function of a firm.

Nature of coalitions in purchasing and in general

First, this research contributes to understanding the true magnitude and nature of international coalition formation, based on international coalition activity reported in The Wall Street Journal from 1983 through 1988. Results from this research provided information summarizing the key industries, legal forms, countries and purposes of international coalition formation. Findings from this study indicated that the majority of international coalitions were formed for operations reasons, involving partners in industrial market economies and locating the coalition in industrial market economies, taking the form of a joint venture/equity agreement. In addition, about a third of the coalitions formed were formed for multiple reasons.

This knowledge provides top purchasing managers with a broad understanding of the nature of coalition activity today. This information may be useful in formulating the firm's strategy for seeking opportunities for international coalitions, and developing an awareness of industry and country coalition patterns.

In addition, prior to this study, data on international coalition formation was not available classified in such a way as to isolate purchasing coalitions. This research specifically isolated and analyzed international purchasing coalitions reported in The Wall Street Journal from 1983 to 1988. The data

reported in this research regarding the industries, countries and legal forms of international purchasing coalitions may help purchasing managers better understand potential issues in international purchasing relationships, which may have a direct impact on their jobs.

While understanding international coalition activity is important to business in general, it is particularly important to the purchasing manager, because the purchasing function has traditionally been a key interface in the international arena. Purchasing manager's with a firm grasp of major changes in international trade activity and relationships will likely be able to make major contributions to the firm's international purchasing strategy, increasing the visibility and strategic impact of the purchasing function of firm.

The implications from this study for purchasing managers are that international purchasing coalitions follow certain patterns. Findings indicate that there are differences in the characteristics of international purchasing coalitions and the coalitions formed for other purposes in the total Wall Street Journal data base. In particular, there was a greater concentration of international purchasing coalitions among fewer industries. In addition, there was a high probability that coalitions formed for purchasing purposes were formed for multiple reasons. The high level of multiple purpose purchasing

coalitions was true in an absolute sense as well as relative to the total data base.

Thus, in order to stay in tune with competitive issues which may affect their firm, purchasing managers in high coalition incidence industries should be aware of what the competition is doing in terms of forming international purchasing coalitions, and should be aware of potential strategic opportunities for their own firm. In addition, purchasing managers should be aware that when their firm does become involved in an international purchasing coalition, there is a high probability that the relationship will be complicated by a focus on reasons in addition to purchasing. The multiplicity of purposes may have an affect on the number and functional area of parties involved in the coalition relationship, the nature of the interaction, and the knowledge required by the purchasing function in managing that relationship.

Purchasing Role and Skill Requirements

The second area in which this study has implications for purchasing practice is through an exploration of the role of the purchasing function of the firm for purchasing functions involved in international purchasing coalitions. This research looked at the range of activities performed and skill requirements of purchasing functions which were involved in coalitional international purchasing relationships.

Findings from this research indicated that purchasing functions which were involved in international coalitional relationships were involved in a wide variety of activities, from reviewing materials requirements, to developing sourcing strategy. Along with involvement in a wide variety of functions, purchasing was involved in team decision making in many of these functional areas. These findings imply that purchasing managers who are involved in international purchasing coalitions need a broad perspective and a team orientation. Given the multiplicity of reasons found in The Wall Street Journal data base for forming international coalitions, it is consistent that a high degree of team involvement occurred when purchasing functions were involved in international coalition activity. Team involvement presents a tremendous opportunity for purchasing to be exposed to other functions and gain visibility in the firm. Team involvement by the purchasing function represents a potentially important way for the purchasing function to contribute to the overall effective operations and strategy of the firm.

To support this broad range of duties and team interaction associated with international coalition involvement, the purchasing function requires complementary skills. This research found that purchasing functions involved in international purchasing coalitions felt that written and verbal communication skills, teamwork skills and networking both within the firm and with outside

suppliers as very important to the success of the purchasing function within the firm. These are the types of skills that appear to be necessary to support a broad range of activities, and involvement in team decision making.

These findings may help purchasing managers anticipate the nature of responsibility and skill requirements which may develop if their firm moves toward a coalitional approach to international purchasing relationships. This knowledge may help the purchasing manager to be better prepared for the changes that may occur, potentially increasing their probability of success in the important areas of international coalition involvement and participation in decision making teams within the firm.

Strategic Positioning of the Purchasing Function

A third implication of this study for practice comes from exploring the strategic positioning of the purchasing function. The impact on the strategic positioning of the purchasing function was reviewed in terms of the purchasing function's input into strategic planning, organizational structure, and the perceived status of the purchasing function.

Findings from this research implied that purchasing function's which are involved in coalitional international purchasing relationships play an important role in supporting the strategic planning of the firm. The

involvement of the purchasing function in strategic planning was found to be one of supporting top management goals, and developing specific one year plans and goals to measure performance against. As a result, purchasing functions involved in international purchasing coalitions required an awareness and understanding of corporate strategy, in order to help support that strategy. Thus, participation in international purchasing coalitions represents a potentially important way for the purchasing function to participate in supporting the competitive strategy of the firm.

Findings from this study suggest that in firms where the purchasing function was involved in international purchasing coalitions, purchasing responsibility was both centralized and decentralized. In addition, the purchasing function had a relatively high reporting relationship within the firm, often represented by a Vice-President of Purchasing. Thus, the implications for purchasing managers are that there may be a relationship between organizational structure and involvement in international coalitional relationships. Perhaps the centralization and relatively high positioning of purchasing within the firm is required to gain the visibility and commitment required to make international purchasing coalitions a success. This reinforces the idea that international coalition involvement and strategic involvement of the purchasing function in planning are positively related.

As further evidenced by this study, purchasing functions involved in international purchasing coalitions generally felt that purchasing enjoyed a relatively high status within the firm. While it is not clear whether that high status was an antecedent or a result of involvement in international purchasing coalitions, the implication for purchasing management is that involvement in international purchasing coalitions appeared to be associated with a relatively high status for the purchasing function within the firm.

Thus, purchasing managers should be aware that involvement in international purchasing coalitions appears to have very positive implications for the purchasing function, presenting a tremendous opportunity for the purchasing function to contribute to corporate strategy and gain visibility. International coalition involvement by the purchasing function is associated with input into corporate strategy, a mix of centralized and decentralized purchasing duties, a relatively high reporting relationship and high status for the purchasing function within the organization. Thus, the involvement of the purchasing function in international coalitions appears to represent an opening for purchasing to contribute to the strategy of the firm, while strategically elevating the status and visibility of the purchasing function of the firm.

Role of Purchasing in Coalition Relationships

Just as the nature of a relationship may change from arms-length to coalitional, the role of the purchasing function within international coalitions may change over time. The fourth contribution of this research to purchasing practice is a result of examining the role of purchasing in coalitions over time. The role of purchasing in international coalition relationships from pre-inception to maturity or dissolution was explored in the case study portion of the research. Findings from this research suggested that the role which purchasing played in establishing and maintaining international purchasing coalitions changed over time, following recognizable patterns.

This finding has two important implications for purchasing practice. First, purchasing managers who become involved in international purchasing coalitions should anticipate that the role which they play and the nature of their interaction in the relationship will change over time, based on how established the relationship is, performance of coalition partners, needs of the firm, and a variety of other factors. Thus, the international purchasing coalition relationships tend to be dynamic in nature.

In addition, it is important for purchasing managers to be aware that purchasing does play an important role in international purchasing relationships throughout the

relationship. While the nature and focus of the relationship may shift, purchasing will continue to act as a key liaison between the firm and their coalition partner. Thus, the purchasing function is in a position to have a major impact on the international coalition relationship, supporting the firm's strategy while gaining visibility.

International Purchasing Coalition Development Model

The fifth major contribution that this study makes to purchasing practice is through the development of a normative model for successfully developing coalitional international supply chain relationships from the perspective of the purchasing function. As presented in section IV of this chapter, the normative model develops a step-by-step approach that should be useful to firms which are currently developing, or planning to develop international purchasing coalitional relationships.

The findings from this research create an awareness of the nature and magnitude of international coalition activity. Further, the research results suggest that awareness of and involvement in international coalitions may present important strategic opportunities for the firm, and for the purchasing function as a notable contributor within the firm. The presentation of a normative model for implementing international purchasing coalitions brings closure to this research effort, providing purchasing

managers with a road map for developing and implementing international purchasing coalitions.

The development model provides a focus on the managerial issues at each step of the implementation process, based on inputs of purchasing managers who have established and maintained coalitional relationships, and based on a review of the literature. The implication for purchasing management from this normative model is that there appears to be an approach to implementing international purchasing relationships that can be effective.

Implications for Suppliers

This research also has strategic implications for suppliers or suppliers who are considering international purchasing coalition involvement. These implications are directly related to the implications for purchasing managers. Two findings from this research appear to be particularly relevant to suppliers. First, the research provides suppliers with an understanding of the nature and magnitude of international coalition activity, which could be beneficial to suppliers in determining strategy. Second, findings from the research indicate that the nature of purchasing coalitions may be such that suppliers may expect to be involved in a broad relationship, extending beyond the purchasing function.

Understanding the nature and magnitude of international coalition activity

As discussed above in the implications for managers and the purchasing function, this research has implications for suppliers in terms of developing an understanding of the nature and magnitude of recent international coalition activity. The knowledge provided by this research in terms of the nature and magnitude of international coalition activity in general, and in purchasing specifically can help suppliers in formulating their firm's strategy for seeking opportunities in purchasing coalitions. Further, knowledge of international coalition patterns can help suppliers understand international competitive threats by developing an awareness of industry and country coalition patterns.

Further, in industries which experience a high level of international coalition activity, suppliers should be acutely aware of what the competition is doing in terms of forming international purchasing coalitions, and should be aware of potential strategic opportunities and implications for their own firm.

Character of purchasing coalitions

This research also makes a contribution to suppliers interested in international coalition involvement by helping suppliers better understand the character of purchasing coalitions. Results from this research indicate

that nearly half of the purchasing coalitions were formed for reasons in addition to purchasing. Thus, in terms of approaching a customer with the idea of forming a purchasing coalitional relationship, suppliers may be more successful if they strategically position the coalition concept by offering the buying firm additional added value beyond the purchased item. For example, this could include technical or manufacturing expertise.

Further, the existence of multiple reasons for forming a purchasing coalition is likely to complicate the relationship, and the interactions between firms. Understanding the need to provide added value to a purchasing coalitional relationship, and the complex nature of these relationships may help the supplier increase their probability of successfully forming and maintaining purchasing coalitions.

Section IV - Normative Development Model

Introduction

The normative development model was created by integrating findings from the literature review with findings from phase one of the study, actual coalition activity, and phase two of the study, what has actually been done by firms which participate in international supply chain management directly involving the purchasing function of the firm. Specifically, the model draws on the

Chapter II literature review sections II and III, and case study data from questions four and five in the advance questionnaire, and questions 13 through 23 and 27 through 35 of the personal interview. Thus, the model developed here ties the two stages of the research together.

The normative model presents the prescriptive perspective of this research. The model sets forth five phases in the evolution of international purchasing coalitions, as diagrammed in Figure 9. These phases are not meant to be mutually exclusive, but represent a potentially iterative process which is dynamic in nature.

Development Guide

1. Phase One - Preliminary Phase

This phase precedes the actual development of an international purchasing coalition, and the choice of a partner. The preliminary phase involves three steps. First, a need for establishing an international purchasing coalition must be identified, generally as part of the strategic planning process of the firm. Second, a team representing key functional areas of the firm should be formed to work on the development of the international purchasing coalition and identification of issues. Third, top management support of the international purchasing coalition must be confirmed.

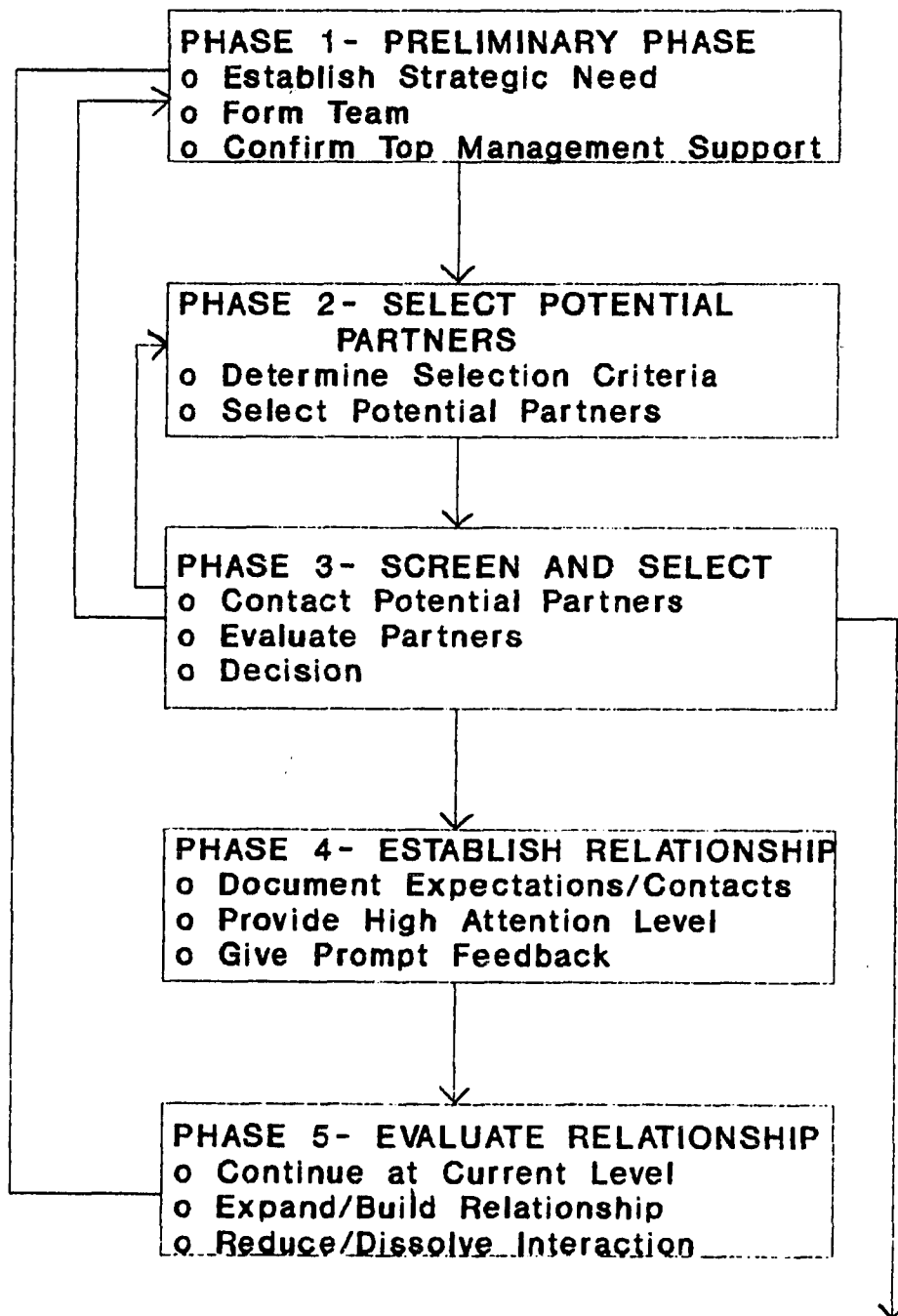


FIGURE 9 - FIVE PHASES IN THE EVOLUTION OF
INTERNATIONAL PURCHASING COALITIONS.

Establishing a need for international coalition formation is a critical first step. The need to form an international purchasing coalition is generally identified by top management and incorporated into the strategic plan of the firm. The need may be identified by top management based on competitive strategy and an environmental assessment, or it may come from the purchasing function or another area and be filtered up through the organization to top management. Experience indicates that establishing the strategic need and top management support before seeking to form an international coalition is critical to the success of the coalition.

Given the need to seek out international purchasing coalition(s), a team should be formed with representation from each major functional area which may be directly affected. The team should include engineering, quality, production, finance or accounting to help with analysis, and purchasing. Purchasing is often the champion or team leader, based on the experience which purchasing has in dealing with outside suppliers, and the key role of purchasing in maintaining the relationship once it has been established.

The first task of the team is to further substantiate why a coalitional relationship is desirable, rather than a routine contractual relationship, or an arms-length relationship for the specific purchased item or items in question. Are there additional benefits which a coalition

could provide, in terms of stability, joint development, and so on? Next, the team should evaluate whether an international partnership is necessary rather than a domestic partnership. At this point, the team should develop an understanding of what an international partnership can offer that a domestic one cannot, in terms of cost, quality, reliability, and other priorities which the firm has identified as supplier selection criteria. This evaluation may change when the firm enters phase two of the relationship development process.

Once the purchasing function or team is comfortable with the need for a coalition relationship, the team should present its findings to top management to confirm the support of top management to form an international coalition on the specific items in question. Top management support has been evidenced as very critical at this point, because coalitional relationships involve a high level of commitment and sharing. The relationship may differ from other purchasing relationships, requiring more sharing of information which could be proprietary or competitive in nature. Top management support is required to release sensitive information, and to give the coalitional relationship the visibility and support which it needs to succeed in the organization.

Top management should be sold on the international coalition relationship based on the firm's strategy and the needs established in the first part of this phase. If top

management will not support the concept of an international coalition, the coalition should be seriously reconsidered. Experience shows that without top management support, the risk of failure, both of the coalition and from a career perspective, is very high.

2. Phase Two - Select Potential Coalition Partners

Selection of potential partners for international coalitions involves two steps. Coalition partner selection begins by determining partner selection criteria. The next step is to identify potential partners.

The criteria for coalition partner selection should be determined in advance. These criteria include traditional supplier selection criteria such as cost, quality, availability, and so on. However, the criteria used in selecting potential partners goes beyond the traditional bidding process, to include an assessment of such issues as:

- A. Cultural compatibility of the firms.
- B. Long-term plans of the supplier for expansion, contraction or change in business focus.
- C. Financial stability of the firm.
- D. Technology/design capability. Does the supplier just build to specification, or do they build for functionality? Are they willing to mutually share technology, if desired?
- E. Top management compatibility.
- F. Location of production facilities, and willingness to relocate and expand.

G. Local content laws, tariffs and other trade issues.

H. Plant visitation, to verify that the facilities meet expectations.

These issues are not necessarily listed in order of importance. Further, there may be additional factors, and all of the above factors may not be considerations in all cases. In addition, some of the factors may come into play very early in the screening process, such as quality and reliability, whereas other factors, such as top management compatibility, may be addressed later, or simultaneously. Criteria regarding the long-term positioning of the coalition partner and management and cultural compatibility, while highly judgmental, are important in establishing the long-term viability of the relationship.

With the criteria for selection clearly established, a list of potential international coalition partners should be developed based on those capable of meeting the firms' supply needs. This list may include suppliers with whom the firm has had previous experience, as well as firms with whom they have not dealt directly. This list of potential suppliers may come from purchasing, engineering, quality assurance, and other functions knowledgeable in the area. Obviously unsuitable candidates should be eliminated early, as the exploration of each potential supplier is a time consuming process. Obviously unsuitable candidates may include those with whom the firm has had unsatisfactory experience in the past. If the firm does not want to

commit to substantial capital investment, firms with inadequate capacity and technology may also be ruled out. This phase may progress very rapidly, if the firm has extensive experience in the area, and knowledge of the suppliers. This phase may also be a slow, iterative process.

3. Screen Potential Partners

After a reasonable list of potential partners and selection criteria have been developed, the potential partners must be evaluated. The team plays a strong role here, drawing on the relative expertise of each functional area involved.

At this point, the team involved in supplier selection should meet to rate the potential suppliers to determine which ones to contact. Again, these ratings should be based on previously established criteria, as determined in the second phase of this process. The team may choose not to eliminate suppliers about whom they know very little in order to assess the potential of these suppliers. The number of potential suppliers chosen will vary depending on the importance of the item under consideration, number of suppliers capable of supplying the item, time available for screening suppliers, amount of time the suppliers may need to develop the item, and so on.

Once this screening process has occurred, each potential supplier firm should be approached to assess their interest in the business. Purchasing generally performs the initial contact. Only those suppliers expressing a sincere interest in establishing a long-term commitment of a coalitional nature in supplying the needed item should be pursued.

Once a supplier which is being screened has determined their capabilities and cost structure for supplying the item, and developed a prototype if possible, the team should decide whether further evaluation of the supplier is warranted. This decision is made based on many issues, such as those listed in phase two. What it really boils down to is the perceived availability, quality and overall "fit" of this supplier versus other suppliers. Further consideration of a supplier involves a detailed financial and operating analysis, visits to plant locations, and development of a deep understanding of the supplier's operations.

In the actual selection of a supplier, the team must take care not to focus too much on any one particularly attractive attribute. For example, while low cost or outstanding quality may be very attractive, the firm may have an unstable labor or management base, or be financially unstable. Thus, a systematic, integrated approach to evaluating each supplier is needed. Top management should generally have input, or at least an

awareness of the final supplier's under consideration, again, to maintain their support and commitment to the international coalition.

Each supplier should be evaluated using the same criteria so that the evaluations are directly comparable. In addition, involving team members from the key functional areas in the evaluation process should help insure that critical factors are not overlooked. The supplier to be chosen for an international coalition relationship should be the one that best meets the firm's needs overall, and meets or appears to have the ability to meet all of the firm's needs at some minimum acceptable level. If there are no acceptable partners available at this point, the firm may wish to return to the previous phase, and evaluate additional partners. Alternatively, the firm may choose not to seek a coalitional relationship, but use competitive bidding, produce in-house, or use some other means of procuring the needed item(s).

4. Phase Four - Establish the Relationship

This phase of coalition implementation is an art as much as it is a science. The goal here is to establish the foundation to build a strong, on-going relationship based upon mutual trust, sharing and commitment. A coalition will work only if it is beneficial to both parties. Thus, the actual interactions with the coalition partner are critical in determining the future of the relationship.

To prevent misunderstanding, especially when firms have different languages and customs, early clarification of expectations is critical. It may be a good idea to establish expectations in writing, not to be used as a coercive enforcement tool, but to clarify needs and expectations. The written document could include items such as key contacts at each firm, any technology to be shared or mutually developed, handling of proprietary information, frequency of forecast updates, basis for price changes, and so on. The more commonality there is in the initial understanding, the less opportunity there is for problems later. This is true when communicating within the firm regarding the coalitional relationship, as well as when dealing with the coalition partner.

While there may be many people at both firms interacting, central coordination is required to keep the relationship operating smoothly and consistently. As team leader, this role is generally filled by the purchasing function. Thus, purchasing must be kept informed of any major issues which affect the coalition relationship. Regular team meetings are required at the early stages of relationship development to evaluate coalition performance, and resolve issues.

Establishing a critical relationship such as an international purchasing coalition requires a high initial attention level. The physical distance should not prevent frequent interaction. Interaction is important in

establishing a good rapport with the coalition partner early in the relationship. Meetings between the top management of both firms are desirable to confirm and make visible the high level commitment of both firms to the success of the relationship. Supplier visitation by key personnel early in the relationship is important, in understanding supplier facilities and capabilities, and establishing face-to-face contact between parties that will have frequent interaction. Despite long distances and time differences, it is important to interact regularly in the early relationship phase, to establish a line of communication.

Further, if problems occur, the issues should be addressed quickly, to prevent further misunderstanding, and keep the relationship on track. Again, purchasing plays the role of the liaison in resolving issues.

5. Phase Five - Evaluate Relationship

By this point, the purchasing function and the team have interacted with the coalition partner long enough to evaluate the future viability of the relationship. The supplier evaluation is an ongoing process which should be undertaken by the team. This may be the same team as the supplier selection team. The team should consist of key personnel who interact with the supplier and are in a position to evaluate supplier performance. Purchasing plays a key role in balancing the different performance

criteria from each functional perspective, such as quality, reliability, and cost, to develop a broad picture of overall supplier performance. There are several alternative courses of action which may be pursued, based on the experience with the supplier to this point.

- A. Continue to monitor the relationship, while maintaining it at its current level.

The firm may want to pursue this course of action if the relationship has been shaky, but improving, or if the relationship is going well, but the firm has no need for additional items from the supplier at this time.

- B. Further build or expand the relationship.

The firm may want to further develop the relationship with the supplier if the supplier has been performing well, and there are other areas that the firm believes the supplier could perform well in based on the supplier's technology and capability. Alternatively, the firm may choose to expand the supplier relationship if other, non-coalition partners are currently getting part of the business in this area, and the firm now feels comfortable shifting more of its business to the coalition partner.

- C. Dissolve or reduce the scope of the relationship with this supplier.

The firm may decide to either reduce its volume with this supplier, or eliminate business with this supplier completely if the supplier is not performing well, or there are many problems in the relationship. The relationship should only be dissolved if the parties have made a sincere effort to reconcile any problems which they have. Additionally, an international purchasing coalition may be dissolved or reduced in scope, even if functioning well, because the business need no longer exists. For example, the firm may discontinue making a product, the technology may become obsolete, or something similar. If the firms have been communicating well over time, this type of dissolution or reduction should come as no surprise.

The third alternative is an alternative of last resort. If the purchasing team did their homework properly, problems of non-performance or culture clash should be relatively rare. Moreover, company goals and key players do change, so major problems cannot be entirely prevented. However, a company which abandons coalition partners without a sincere effort to resolve problems will soon develop a reputation, so that other potential coalition partners will have reduced willingness and increased suspicion of forming coalitions with the firm.

While the steps above are presented as a discrete sequence of events, in actual practice there may be some overlap between phases. In addition, there may be iteration back and forth between phases, particularly during phases two and three, and if the firm dissolves an unsatisfactory relationship.

It should be further noted that the above normative guide specifically examines the situation where a firm is consciously seeking out international coalition partners. In practice, international purchasing coalitional relationships may just naturally develop in the course of business. In the case where a coalition develops without prior planning, only phases four and five of this model apply.

Sections III and IV presented the implications of this research for theory, literature and practice. The final section of Chapter V presents some suggestions for future research based upon the findings of this study.

Section V - Suggestions for Future Research

International coalition relationships appear to be an important competitive form. While international coalitions and supply chain management receive much attention in the popular press, there is still much opportunity for further research in the area, particularly as related to the purchasing function. The following research ideas are suggested as potential topics for further investigation.

1. The data base created in this research, which extended the work of Ghemawat et al. (1986) should continue to be updated and analyzed. Very recent events and trends, such as the political upheaval in Eastern Europe, the approach of many of the target dates identified by the Europe 1992 accord, and the potential reunification of East and West Germany will likely all have a profound affect on the nature and magnitude of international coalition formation. In order to keep abreast of the most current trends and issues, timely updates of international coalition patterns in The Wall Street Journal data base would be helpful.

2. The data base created in this research could be expanded, to incorporate broader coverage. The two broad international coalition data bases identified by this research have a regional bias. Ghemawat et al.'s Wall Street Journal data base uses a United States-based and published journal as its only data base. The INSEAD data base used by Morris and Hergert focused on two primarily European publications, The Economist and the Financial Times. To eliminate the regional bias of this and future research, it would be beneficial to include a publication representative of each member of the triad: the United States, Europe and Japan.

3. Future studies of coalition formation should look at both domestic and international coalition patterns. It would be instructive, from a competitive and a theoretical standpoint to understand whether coalition patterns and trends vary domestically versus internationally in understanding the true impetus for and nature of coalition activity. In addition, the results of a study on international and domestic coalitions would be more representative if the data were gathered from a number of key business journals representing the triad, as suggested in number two above.

4. Future studies of the impact of coalitional relationships on a given functional area should include both adversarial and coalitional relationships, rather than just one side of the relationship. This would allow for a direct comparison of the impact of coalitional versus adversarial relationships on a given functional area.

5. As international purchasing coalitions become more commonplace, a broad-based survey, rather than case studies, would be beneficial for two reasons. First, a survey would reach a broader audience, decreasing the chance of a biased sample. Second, a larger sample size would allow statistical testing of results. It would be valuable for such a survey to test the tentative conclusions from the case study stage of this research on a broader scale. Given the relative rarity and lack of research into international purchasing coalitions today, in depth analysis of a small sample of firms was appropriate for this research.

6. Another interesting research stream from this study could involve a test of the normative development model for effectiveness in actual practice. This could involve a case study of several firms, using the model as a guide to develop effective international purchasing coalitions.

7. Findings from this research suggest that informal agreements may be relatively common practice in international purchasing coalitions. Future research in this area is suggested to understand the relative magnitude of formal versus informal agreements in international purchasing coalitions. Given that some of the informality in international purchasing coalitions appeared to be due to the unenforceability of international contracts, it is also suggested that future research compare the form of agreement between international and domestic coalitions, to see whether differences exist.

8. This research explores how the role of the purchasing function changes in international purchasing coalitions over time by asking purchasing people to recall how the relationships have changed. To confirm the case study results, or supplement the normative development guide, a longitudinal study of the role of purchasing in international coalitions over time is suggested. By tracking a series of relationships in different firms, from pre-inception to maturity or dissolution, a better understanding of the stages in the relationship and the issues at each stage could be developed.

9. The results from this research suggest that involvement in international purchasing coalitions is associated with input and involvement of the purchasing function into the firm's strategic planning process, and high status and high positioning of the purchasing function within the firm. To verify the association between international coalitional involvement and purchasing's strategic involvement and positioning within the firm, a longitudinal study of firms' entering their first international purchasing coalition would be beneficial.

A longitudinal study of the way in which the strategic role and input of the purchasing function evolves as international coalitions involving the purchasing function are developed could help isolate the variable international purchasing coalition involvement, to isolate the effects that this variable has on the purchasing function. Examining the development of international purchasing coalitions over time, from conception of the idea to a mature relationship would allow the affects on the purchasing function to be explored more fully. Such a study could be undertaken using a cross section of firm's from various industries, as was done in this research. Alternatively, to eliminate the impact of different industry involvement on the purchasing function, a study of the relationship between international coalition involvement and the role, positioning and strategic input of the purchasing

function could be undertaken by examining a specific industry.

Summary

Chapter V presented conclusions based upon the findings from the two stages of this study. Conclusions from this research, as well as the implications of the research presented in this chapter suggest that international coalition involvement presents a tremendous strategic opportunity which exists at two levels.

First, involvement in international coalitions presents an opportunity for the firm to competitively position itself to gain strategic advantage. Second, involvement in international purchasing coalitions presents an unusual opportunity for the purchasing function of the firm to contribute to corporate strategy and strategically position itself within the firm, gaining status, visibility and increased strategic involvement.

To help the firm and the purchasing function within the firm take advantage of the strategic opportunity presented by international coalition involvement, this research formulated a normative model for developing and implementing international purchasing coalitional relationships. The development model can help provide

managers with guidelines for successfully developing and implementing this important form of competitive relationship: international purchasing coalitions. The normative model for implementing international coalitional relationships in purchasing was developed based on the findings of this study, and the literature reviewed. Finally, this chapter concluded with a series of suggestions for future research in the areas of international coalition activity and the implications of international coalition involvement on the purchasing function.

Following this chapter is a Glossary of terms and a series of Appendices designed to help the reader better understand the methodology of the research. These appendices include a copy of the data input format used in creating the data base, detailed definitions of international coalitions and each purpose category, copies of protocol used to screen companies and gather data, a profile of each case study firm, and classification of coalitions by country and standard industrial classification code.

GLOSSARY OF TERMS

GLOSSARY OF TERMS

- COALITION-** Formal, long-term relationship between two or more firms which link some aspect of their businesses to work toward a common end, sharing information, and the risks and rewards of the relationship (adapted from Porter and Fuller 1986). Multiple coalitions at different levels in the distribution channel form a supply chain.
- CO-MAKERSHIP-** A term used by Bevan (1989) to describe purchasing coalitions, or "...Buyers and suppliers working together toward a common goal."
- INDUSTRIAL MARKET ECONOMY COUNTRY-** Members of the Organization for Economic Cooperation and Development, excluding Greece, Portugal and Turkey, which are included in the developing economies due to their low per capita income (adapted from World Development Report 1986 1986).
- MICROMANAGE-** A term used to describe a situation or relationship which is managed by details rather than focusing on the big picture, potentially suboptimizing the total system performance.
- NORMATIVE MODEL-** A guideline designed to serve as a framework or suggested method for implementing a proposed system or set of relationships.
- OPPORTUNISM-** Taking unfair advantage of the dependency of a trading partner on the firm by exploiting them, generally by charging an excessive price for goods or services. This dependency may be come from expertise, specialized assets, exclusive access to key information, and other sources, so that the party trading with the firm has no or very limited alternatives. Thus, the trading party accepts the terms of the firm, however exploitative, at least until alternative sources can be developed.
- REVERSE MARKETING-** A purchasing philosophy in which the buying firm takes the initiative in forming coalitional relationships with suppliers (Leenders and Blenkhorn 1988).

SUPPLY AGREEMENT- Term used to refer specifically to a contract designed to meet the supply needs of a firm in terms of raw materials, finished goods, or components.

SUPPLY CHAIN MANAGEMENT- While the term supply chain management is used interchangeably with coalitions here, supply chain management is technically a broader concept. Theoretically, supply chain management is a philosophy which encompasses the flow of goods throughout the distribution channel, from supplier to the ultimate consumer. This philosophy views the supply chain as a whole, rather than focusing on individual parties and relationships. The goal of supply chain management is to have each member of the supply chain perform the functions which they can perform most efficiently, and hold inventory only where it has the greatest benefit to the system as a whole. Thus, supply chain management attempts to optimize system performance through reducing system redundancy and inefficacy by integrating information, and efficiently dividing responsibility within the channel.

APPENDIX A

**DETAILED GUIDELINES OF WHAT CONSTITUTES AN
INTERNATIONAL SUPPLY CHAIN MANAGEMENT RELATIONSHIP**

DECISION RULES FOR DETERMINING WHETHER A RELATIONSHIP CONSTITUTES
AN INTERNATIONAL COALITION

Basic Rules

1. Parent companies of at least two of the partners are located in different countries.
2. Duration of the agreement is greater than one year.
3. Involves a formal, written understanding between parties.
4. Risks and rewards of the relationship are shared between parties; not just a routine business contract.
5. The relationship has a specific business purpose in mind; it does not involve a complete merger of all of a firm's activities.

Application of the Rules

1. All joint ventures are considered to be coalitions.
2. Coalitions are picked up and reported when the agreement is reported as finalized, even if they later break up or are struck down by the justice department.
3. Cross-licensing and sharing of technology on some type of continuing basis are considered indicative of coalitional activity.

Specific Exclusions

1. Excludes banking, financial services, insurance and real estate ventures.
2. Excludes routine contracts, contracts where there is no evidence of sharing. For example, a supply agreement for a specified item, at a specified price over a certain time would be classified as a routine contract rather than a coalition.
3. Excludes franchising, distributorships and rights if they are a routine way of conducting business, or there is no evidence of partnering.
4. Only includes definitive agreements, not preliminary agreements or memorandums of understanding.

5. Only includes new agreements, not changes to existing agreements. For example, if ownership percentages change, or a slight modification in an agreement is made, this is not shown as a new coalition. However, if an additional substantive agreement is made which differs from the existing agreement, this will be picked up as a new coalition.
6. Agreements were included only when they were reported as being formed or finalized, not when they were reported as receiving a contract, or new business.

APPENDIX B

DATA INPUT FORM FOR THE WALL STREET JOURNAL DATA BASE

DEFINITION OF VARIABLES ON DATA INPUT FORM

Type-	Contained in field [1]. Type of coalition; 1 - International, 2 - Domestic, 3 - International/Government 4 - Domestic/Government. This research deals only with types 1 and 3.
Date	Contained in field [2]. Date the coalition was reported in <u>The Wall Street Journal</u>
NOP	Contained in field [3]. Number of partners participating in the coalition
P_nm	Contained in fields [4, 7, 10 and 13]. Name of the parent company_ participating in the coalition; up to four parent company names were tracked this way
HQ_nm	Contained in fields [5, 8 11 and 14]. Name of subsidiary of parent company_ which was participating in this coalition, if a subsidiary was involved
HQ_cy	Contained in fields [6, 9, 12 and 15]. Country in which P_nm is located
Cocy	Contained in field [16]. Country in which the coalition itself is located
Form	Contained in field [17]. Legal form of the coalition agreement; 10 - Joint Venture/Equity Agreement 20 - License 30 - Supply Agreement 40 - Contract 50 - Other
C_pur	Contained in fields [18, 19, 20 and 21]. Reason _ given for forming the coalition, classified as in Appendix C; up to four reasons were tracked for each coalition. There is no significance to the ordering or reasons for forming coalitions.
P_purp	Contained in fields [22 through 37]. Coalition parent company _; reason _ given for forming the coalition, classified as in Appendix C; up to four reasons were tracked for each HQ_nm, with up to four HQ_nms tracked. There is no significance to the ordering or reasons for forming coalitions.
SIC_	Contained in fields [38 through 41]. Standard Industrial Classification Code for HQ_nm.
COMMENTS	Contained in field [42]. Miscellaneous information regarding the nature of the coalition, other parent companies beyond four, if any, country locations if multiple locations.

APPENDIX C

**CLASSIFICATION OF COALITIONS BY PURPOSE
OF COALITION**

CLASSIFICATION OF COALITIONS BY PURPOSE

TECHNOLOGY

Technology-general
Energy Development Tech
R&D
R&D Development
Prod design/Develop
Get Technology
Give Technology
Share Technology
Energy/Mineral Exploration
Telecommunications/Info systems
Info system development/software development

LOGISTICS

Logistics- general
Distribute other's products
Get Distribution for own product
Joint Distribution
Joint Transportation Service Brokerage

OPERATIONS

Assembly
Operations
Build/operate a joint plant
Joint Production
Production
Processing chemical/gas
Recycle
Refine
Operate a joint power plant/pipeline
Provide equip/service to support prod/exploration
Merge Operations in that area, retaining separate identity elsewhere
Joint TV/Movie production
Joint programming
Joint cable TV station
Open movie studio
Provide programming
Build/operate telecommunication systems

MARKETING/SALES/SERVICE

Market other's product
 Get marketing for own product
 Joint Marketing
 Sell own product
 Sell other's product
 Joint Sales
 Service other's product
 Get Service support for own product
 Joint service
 Telecommunication/computer equip/service
 Telecommunications/computer training, educational assistance

PURCHASING

Supply
 Purchase finished goods from partner for use/resale
 Manufacture finished goods to specs for partner
 Purchase raw materials/components joint design/input from partner
 Manufacture raw materials/components for partner
 Supply raw materials

MULTIPLE

A coalition whose purpose overlaps two or more of the major categories above

UNCLASSIFIABLE

A coalition for which no purpose is specified, or the purpose does not fit any of the above categories

NOTE: The Purchasing and Logistics categories may be combined with the Operations category for analysis of Hypothesis A.

APPENDIX D
COMPANY SCREENING PROTOCOL

PROTOCOL USED TO SCREEN POTENTIAL CASE STUDY FIRMS

Good Morning. My name is Lisa Ellram. I am a graduate student at the Ohio State University, working on my dissertation in the area of partnership type relationships in international purchasing. This research is being sponsored and partially funded by the National Association of Purchasing Management.

_____, the President of the _____ area purchasing council gave me your name as a firm that may be involved in close international purchasing relationships. Do you have a few minutes to answer some questions for me ?

1. What is the primary business of your firm?

2. Are you involved in any long-term international purchasing relationships with firms which are unrelated to your firm, and which involve formal agreements?

3. Do you feel that international purchasing is significant to your firm, in terms of volume, strategic importance, or both?

4. How long has your firm been involved in international purchasing?

5. Do any of these long-term purchasing relationships involve a mutual "sharing", so that information, and the risks and rewards of changes are shared between your firm and the vendor? Can you give me any examples of how this sharing occurs? (At this point, if the interviewee is unsure of what "sharing is, I could give some examples... mutually investing in vendor equipment to support the firm's supply needs, working together on specification changes, provide forecasts in advance to facilitate their scheduling/production, sharing financial risks if the vendor must forward buy to meet the buying firm's needs, and so on.)

**If at this point, the firm does not seem to fit, thank them for their time, and ask them if they know of any other firms in the area that fit this criteria. If the firm does seem to fit the criteria....

I am involved in a research project which involves getting a better understanding of the implications of international purchasing partnerships on the purchasing function. I am looking for firms to participate as case studies in this research. Based on the questions I asked, it seems as though your firm would be a good candidate. Do you have a few minutes that I could explain this research project to you?

The benefits of the research is that it will develop a "cutting edge" understanding of how international purchasing partnership type relationships impact the purchasing function, in terms of the role of the purchasing function, and purchasing's strategic positioning within the firm. If you participate in the research, I'll be happy to share the case study results with you.

If your firm would be willing to participate as a case study, I would want to talk to three members of your firm who are involved in international purchasing with partnering types of relationships. The research will involve a questionnaire which will take about 30 minutes to complete, and will be mailed in advance. The research will also involve a personal interview which will take about an hour and a half. The areas that the research will explore include:

- o Organization of the purchasing function
- o The purchasing function's input into strategy
- o The organizational positioning/status of the purchasing function of the firm
- o International purchasing relationships

Does this sound like something which your firm would be interested or willing to participate in?

Would you like me to call you back?

If the interviewee still seems willing to participate, he/she will be asked:

1. Could you give me the names and telephone numbers of at least three people in your firm who have direct involvement in international purchasing relationships that have this "sharing" nature, who you believe would be willing to participate in this study? It can include yourself.
2. Would you like to talk to them before I contact them?
3. If so, how long should I wait before calling them? Is it all right if I use your name when I contact them?
4. If I should have more questions, or need to make further contacts within the firm, may I call you again?

Regardless of whether the interviewee still seems willing to participate, he/she will be asked:

1. Could you give me the names and telephone numbers of any of your associates at other companies who have direct involvement in international purchasing relationships that have this "sharing" nature, whom you believe would be willing to either participate in this study or the pretesting?

2. Would it be all right if I use your name when I contact them?

APPENDIX E

**ADVANCE PACKAGE TO CASE STUDY PARTICIPANTS
INCLUDING WRITTEN QUESTIONNAIRE**

Lisa Ellram
The Ohio State University
146 Hagerty Hall
1775 College Road
Columbus, Ohio 43210
January , 1990

Dear ,

Thank you for agreeing to participate in this National Association of Purchasing Management sponsored research project. A very limited number of firms have been selected, so the input of each participant is very important to the overall results.

As we discussed on the telephone on , I will come to your office to meet with you on , from to . I anticipate that the discussion will last approximately 90 minutes, but have allowed two hours to assure that the interview process can be completed in one meeting. I will be meeting with two other people at your company that day, so if your schedule changes for any reason to conflict with our planned meeting time, please contact as soon as possible at (614) 487-0168 so that we can reschedule.

I have enclosed a questionnaire which I will use to help focus our discussion of your firm's purchasing practices. I would appreciate it if you could review it, fill it out briefly and return it to me by , in the enclosed envelop. That should make the whole interview process go much smoother for both of us. The personal interview will involve more open ended questions regarding the purchasing organization, the purchasing functions involvement in strategic planning, the status of the purchasing function, and factors which contribute to the success and failure of international vendor relationships. Also, as we discussed on the telephone, I would appreciate it if you could sent me a copy of any written purchasing mission statements or strategies which your firm uses, and any policies or guidelines that relate to international purchasing or vendor relationships.

I thank you for your time and your willingness to participate in this research. I look forward to meeting you on . If you should have any questions or issues that arise before that time, please call me at (614) 487-0168. Thank you.

Sincerely,

Lisa M. Ellram

ADVANCE QUESTIONNAIRE

BACKGROUND INFORMATION

Name _____
 Your Position Title _____ Time in position _____ years
 Number of years in purchasing in this firm _____
 Number of years in purchasing positions _____

Company Name _____ Division _____
 Industry _____ Annual sales dollars _____
 Would you classify this business as : ___ Consumer ___ Industrial ___ Both
 Annual Value of Purchased goods/services _____
 Percentage of goods/services purchased from international source _____

ORGANIZATIONAL BACKGROUND

1. What is the position title and department of the person to whom you report?
 Title _____ Department _____
- What is the position title and department of the highest ranking person in the purchasing function?
 Title _____ Department _____
- What is the position title and department of the person to whom he/she reports?
 Title _____ Department _____

PURCHASING FUNCTION

2. These questions relate to your overall purchasing perceptions, not any single relationship or type of relationship.

Listed below are a number of tasks which the purchasing function may perform. Please respond regarding the purchasing function's degree of responsibility for each task. These are defined as follows:

- 1- no responsibility: are not involved in this activity in anyway
- 2- some responsibility: occasional involvement, not ongoing involvement
- 3- routine responsibility: responsible for day-to-day, ongoing issues in this area, but not unusual situations
- 4- total responsibility: responsible for virtually all issues in this area of responsibility, from routine to unusual
- 5- team responsibility: a team, task force or group of people which includes representation from the purchasing function, is responsible for this activity .

	DEGREE OF RESPONSIBILITY				
	no	some	routine	total	team
Reviewing materials requirements	1	2	3	4	5
Generating P.O.'s	1	2	3	4	5
Negotiating price/terms	1	2	3	4	5
<u>Vendor Selection</u>	1	2	3	4	5
Vendor Communications on routine issues	1	2	3	4	5
Problem solving with vendor	1	2	3	4	5
Gathering information from vendor	1	2	3	4	5
Arranging inbound transportation	1	2	3	4	5
Price Forecasting	1	2	3	4	5
Inventory Control	1	2	3	4	5
Communicating specification changes to vendor	1	2	3	4	5
Developing new product specifications	1	2	3	4	5
Productivity/cost improvements	1	2	3	4	5
Sourcing Strategy	1	2	3	4	5

Please identify and rank the degree of responsibility for other significant areas of responsibility which are not included here.

_____	1	2	3	4	5
_____	1	2	3	4	5
_____	1	2	3	4	5
_____	1	2	3	4	5
_____	1	2	3	4	5
_____	1	2	3	4	5

Other comments:

3. Please rate the importance of each of the following areas of knowledge or skills for a buyer in effective job performance.

	Very Unimportant			Very Important	
Negotiation Skills	-2	-1	0	+1	+2
Teamwork Skills	-2	-1	0	+1	+2
Understanding of various transportation modes	-2	-1	0	+1	+2
Understanding corporate strategy	-2	-1	0	+1	+2
Verbal communication skills	-2	-1	0	+1	+2
Written communication skills	-2	-1	0	+1	+2
Networking within the firm	-2	-1	0	+1	+2
Networking with Vendors outside of the firm	-2	-1	0	+1	+2
Effective task force participation	-2	-1	0	+1	+2
Engineering or technical knowledge	-2	-1	0	+1	+2
Foreign Language Skills	-2	-1	0	+1	+2
Understanding of Foreign Culture	-2	-1	0	+1	+2
Knowledge of duties/customs regulations	-2	-1	0	+1	+2
Financial/economic background	-2	-1	0	+1	+2
Knowledge of how purchased items are used	-2	-1	0	+1	+2
Other-please identify and rank other skill or knowledge areas which you feel are important					
_____	-2	-1	0	+1	+2
_____	-2	-1	0	+1	+2
_____	-2	-1	0	+1	+2
_____	-2	-1	0	+1	+2
_____	-2	-1	0	+1	+2
_____	-2	-1	0	+1	+2

Other comments:

KEY SUCCESS FACTORS AND AREAS FOR IMPROVEMENT

4. This part of the questionnaire deals with international vendor relationships which you believe are important to your firm, and with whom you believe your firm has a "partnering relationship".

Partnering is defined here as a firm with whom your company has an ongoing relationship, involving a commitment over an extended time period, and a sharing of information and the risks and rewards of the relationship.

Please base your responses on your experience with all similar types of relationships.

What factors have been important in establishing and maintaining these types of international supplier relationships?

	Very Unimportant			Very Important	
Top Management support	-2	-1	0	+1	+2
Establishing a task force	-2	-1	0	+1	+2
Training of buyers in international issues	-2	-1	0	+1	+2
Sharing examples of successes with others	-2	-1	0	+1	+2
Expanding knowledge through intermediaries, or local expertise	-2	-1	0	+1	+2
Developing local, foreign-based offices/subsidiaries	-2	-1	0	+1	+2
Two-way information sharing	-2	-1	0	+1	+2
Viewing purchasing from a global perspective	-2	-1	0	+1	+2
Flexibility in agreement	-2	-1	0	+1	+2
Shared goals	-2	-1	0	+1	+2
Vendor value-added	-2	-1	0	+1	+2
Multiple relationships/ points of contact between the firm and vendor	-2	-1	0	+1	+2
Early communication to vendor of specification changes, new products	-2	-1	0	+1	+2
Vendor visitation	-2	-1	0	+1	+2
Personal relationships	-2	-1	0	+1	+2
Please identify and rate other important factors	-2	-1	0	+1	+2
_____	-2	-1	0	+1	+2
_____	-2	-1	0	+1	+2
_____	-2	-1	0	+1	+2

Briefly, which factor do you see as most important, and why? (I would like to discuss this question more fully in person.)

5. What factors have been important barriers to establishing and maintaining these types of international supplier relationships?

	Very Unimportant			Very Important	
Lack of Top Management support/interest	-2	-1	0	+1	+2
Low status of purchasing function	-2	-1	0	+1	+2
Lack of strategic direction	-2	-1	0	+1	+2
Lack of working knowledge of foreign practices/sources	-2	-1	0	+1	+2
Currency exchange rate differences	-2	-1	0	+1	+2
Lack of knowledge of customs/duty regulations	-2	-1	0	+1	+2
Distance barriers	-2	-1	0	+1	+2
Nationalism (buy American)	-2	-1	0	+1	+2
Lack of central coordination of international purchasing	-2	-1	0	+1	+2
Lack of shared goals	-2	-1	0	+1	+2
Lack of trust	-2	-1	0	+1	+2
Poor communication	-2	-1	0	+1	+2
Cultural differences	-2	-1	0	+1	+2
Lack of benefit/risk sharing	-2	-1	0	+1	+2
Too many suppliers to deal with effectively	-2	-1	0	+1	+2
Lack of supplier value-added	-2	-1	0	+1	+2
Please identify and rate other important factors					
_____	-2	-1	0	+1	+2
_____	-2	-1	0	+1	+2
_____	-2	-1	0	+1	+2

Briefly, which factor do you see as most important, and why? (I would like to discuss this question more fully in person.)

APPENDIX F

PERSONAL INTERVIEW PROTOCOL USED IN CASE STUDIES

PART 3: PERCEPTIONS OF THE PURCHASING FUNCTION

7. How do you feel about the status and recognition that the purchasing function receives within the firm, in terms of utilization, communications received, and integration into issues which affect purchasing? Can you give examples?

8. How does your perception of purchasing's status compare with your perceived status of other functions, and what events or factors support that perception?

9. Are there any special awards or recognition given to outstanding suppliers? Please identify.

PART 4: KEY INTERNATIONAL RELATIONSHIPS

When answering the following questions, think of important international vendor relationships which involve partnering. (show definition again)

10. When did your firm first become involved in any type of international purchasing relationship?
11. To the best of your knowledge, why did your firm choose a foreign vendor rather than a domestic one at that time?

12. Under what circumstances will your firm choose foreign vendors over domestic vendors today?

13. To the best of your knowledge, when did an international purchasing relationship with your firm first begin to resemble a "partnering" type of relationship? (a mutual sharing of information, risks, and rewards)
14. What were the events and factors which, in your mind, led to that change in relationship, or the seeking out of this different type of relationship?
Can you give me examples of these factors?

15. If the relationship changed overtime (rather than being initiated as a partnering relationship), were there stages the relationship evolved through which you can identify/give examples of?
16. What is the role of the purchasing function in identifying partners for this type of mutual relationship, and establishing the relationships? Can you give me examples?
17. What is the role of the purchasing function in maintaining these relationships? Can you give specific examples?
18. Does purchasing's relationship with these suppliers change over time, in terms of nature of contact, frequency of contact, parties contacted at vendor firm, and so on? Please describe these changes, if any.
19. Do other functional areas of the firm have direct involvement with these suppliers? If so, please describe- nature of contacts, frequency, whom they would be in contact with, and so on. How do you feel this contact impacts the overall relationship?
20. What are the primary criteria used to select vendors to establish this type of partnering relationship over others to supply your firm's needs? Could you rank these by importance?

21. Do you generally use contracts within these mutual vendor relationships? __
If yes, what is the average contract duration? ____ months
22. If your firm uses multiple suppliers for items from these vendors, what is the primary reason? Are there other reasons?
23. When developing a new product or implementing a major product change that would use materials supplied by these vendors, when is the vendor brought in to the process?
24. Does your firm or the vendor firm ever suggest cost saving or quality improvements to the other? If so, how is that information communicated in the organization? Please give examples.
25. If cost saving projects are suggested, are the savings shared? How is the share determined?
26. If new investments are required by the vendor to meet your specifications, how are those investments financed?

PART 5: KEY SUCCESS FACTORS AND AREAS FOR IMPROVEMENT

This part of the interview deals with international vendor relationships which are important and involve partnering. I would like you to base your responses on your experience with all similar types of relationships. This section expands upon the written questionnaire that looked at why these important international vendor relationships succeed or fail.

(A copy of their written responses will be available to both the interviewee and interviewer for reference.)

27. Please expand on why you feel _____ is the most important factor to success in this type of mutual sharing international vendor relationship. Do you have any specific examples ?

28. Based on your experience with this type of "mutual sharing" vendor relationship, what types of things would you do differently in the future in establishing and maintaining this type of relationship?

29. Has the incidence of international partnering relationships with the purchasing function increased over time? Could you estimate how much?

30. Do you see an increase in international partnering relationships in the future? Why or why not?

31. What role do you think purchasing will play in future partnership relationships?

32. If there are "barriers" preventing the increase of this type of relationship, please give examples of what they are and how these barriers prevent further development of international partnership relationships in purchasing.

33. From your written survey responses, please expand on why you feel _____ is the most important barrier to success in this type of mutual sharing international vendor relationship. Do you have any specific examples ?

34. Have you ever had a relationship of this nature that was discontinued or failed?
Please tell me about that relationship, and why you believe it failed?

35. If you could start that relationship over again, what would you do differently?

APPENDIX G

PROFILE OF CASE STUDY FIRMS

Listed below is a profile of each organization which was part of the case study portion of the research. Each firm is cross-referenced by letter so that the reader can follow patterns of firm behavior within the research in Chapters IV and V.

A. Organization A is the wholly-owned subsidiary of a foreign-based manufacturer of automobiles, and a wide variety of other products which utilize internal combustion engines. This subsidiary has an annual value of purchased goods between \$1.75 and \$2.0 billion. Approximately 25% to 35% of purchased items are imported.

B. Organization B is a wholly-owned subsidiary of a foreign-based firm whose major business is to engage in the research and development, manufacture and sale of ethical drugs for human use. This subsidiary, based in the United States, was originally formed as a joint venture between the parent company and a United States based firm. It is now wholly owned by the foreign-based firm. This subsidiary has an annual value of purchased goods of approximately \$80 million. About 80% of purchased items are foreign sourced.

- C. Organization C is a wholly-owned subsidiary of a United States-based firm who is a major supplier of equipment, products and services for industries involved in petroleum and natural gas exploration and development, energy processing, conversion and marketing. This subsidiary has an annual value of purchased goods of \$80 million, of which approximately 30% to 35% are foreign sourced.
- D. Organization D is a manufacturer/marketer of high technology products which utilize proprietary precision coating, bonding and related technology to produce a wide variety of products for both consumer and industrial markets. This company was analyzed from the perspective of the corporate headquarters as it relates to divisional operations, rather than from the perspective of one of its many subsidiary companies. The company has annual sales in excess of \$11.0 billion.
- E. Organization E is a diversified United States based manufacturer of components for residential, commercial and industrial buildings, manufactured homes, recreational vehicles, and the transportation industry. It is also a producer of integrated materials handling systems. The company was analyzed from the perspective of corporate headquarters as it relates to divisional operations. The company has annual sales of approximately \$1.2 billion, with a cost of purchased goods of around \$500 million. Approximately 5% of purchased goods come from a foreign source.

F. Organization F is the wholly-owned subsidiary of a United States based firm which is engaged in the design, development, production and support of selected defense systems, industrial and commercial building products and services, and engineered industrial products. This division is engaged exclusively in work to support a five-year government contract at this time. This division has annual sales of around \$250 million, with approximately 9% received from an international source.

APPENDIX H
CLASSIFICATION OF COUNTRIES INTO CATEGORIES BY
ECONOMIC DEVELOPMENT

CLASSIFICATION OF COALITION LOCATIONS BY COUNTRY
AND INTO COUNTRY GROUPS

INDUSTRIAL MARKET ECONOMY COUNTRIES	TOTAL REPORTED*	PURCHASING ONLY*
North America		
No America	1	0
United States	141	18
Canada	22	1
Subtotal	164	19
Western Europe		
Austria	1	0
Belgium	2	0
Denmark	2	0
Europe	19	2
France	14	1
Italy	12	2
Netherlands	4	1
Norway	1	0
Spain	7	0
Sweden	3	1
Switzerland	1	0
UK	20	2
Western Europe	7	0
West Germany	10	1
	103	10
Japan	77	14
Misc.		
Australia	10	0
New Zealand	4	0
	14	0
TOTAL INDUSTRIAL MARKET ECONOMY	358	43

DEVELOPING COUNTRIES	TOTAL REPORTED	PURCHASING ONLY
Latin America		
Mexico	4	2
Bahamas	2	0
Brazil	6	1
Caribbean	1	0
Chile	2	1
Colombia	1	0
South America	1	0
Tobago	1	0
Venezuela	2	0
	<hr/>	<hr/>
	20	4
Far East		
China	74	11
Hong Kong	3	0
India	9	2
Indonesia	5	2
Korea	1	1
Malaysia	4	0
North Korea	1	0
Pakistan	2	0
Phillipines	2	0
Singapore	2	0
South Korea	26	6
Taiwan	5	1
Thailand	4	0
Viet Nam	1	1
	<hr/>	<hr/>
	139	24
Africa		
Morocco	1	0
Sudan	1	0
Suriname	1	1
Tanzania	1	0
Tunisia	1	0
	<hr/>	<hr/>
	5	1
Miscellaneous Developing Countries		
Yugoslavia	2	0
Egypt	4	0
Iraq	1	0
Turkey	4	2
	<hr/>	<hr/>
	11	2
TOTAL DEVELOPING COUNTRIES	<hr/>	<hr/>
	175	31

<u>EASTERN EUROPE NONMARKET ECONOMIES</u>	<u>TOTAL REPORTED</u>	<u>PURCHASING ONLY</u>
Czechoslovakia	1	0
East Germany	1	1
Hungary	1	0
Poland	1	1
Soviet Union	14	1
<u>TOTAL</u>	<u>18</u>	<u>3</u>
<u>HIGH-INCOME OIL EXPORTERS</u>		
Saudi Arabia	1	0
Qatar	1	0
<u>TOTAL</u>	<u>2</u>	<u>0</u>
Multiple		
Worldwide	5	0
Misc Multiple	112	11
	<u>117</u>	<u>11</u>
Unclassified	59	3
<u>TOTAL</u>	<u>729</u>	<u>91</u>

* Totals represent the total reported in the 1983-1988 Wall Street Data Base, for total data base and purchasing coalitions only

APPENDIX I

**CLASSIFICATION OF COALITIONS BY STANDARD INDUSTRIAL
CLASSIFICATION CODE INTO INDUSTRY GROUPS**

CLASSIFICATION OF COALITIONS BY SIC CODE INTO INDUSTRY GROUPS

INDUSTRY	Coalitions Reported in Total Data Base	Coalitions Reported in Purchasing Only Data Base
Agri/Food/Tobacco		
01,05 Agri-products	3	0
20 Food	40	1
21 Tobacco	2	0
Subtotal	45	1
Metals & Minerals Mining		
10/11 Metal Mining	20	1
14 Non-metallic mining	3	0
Subtotal	23	1
Energy		
12 Coal Mining	2	0
13 Oil/Gas Extract	85	3
29 Petro Refining	31	1
46 Pipelines	0	0
Subtotal	118	4
Construction		
15 General	13	1
16 Heavy	5	0
17 Special	0	0
Subtotal	18	1
Textiles, Clothing & Leather		
22 Textiles	5	0
23 Apparel	2	0
31 Leather	0	0
Subtotal	7	0
Paper & Wood Products		
24 Lumber	4	0
25 Furniture	2	0
26 Paper	15	0
Subtotal	21	0
Printing & Publishing		
27	18	0
Chemicals/Pharmaceuticals		
28 other	84	5
Pharmaceuticals		
2830's	81	0

INDUSTRY	Coalitions Reported in Total Data Base	Coalitions Reported in Purchasing Only Data Base
Computers/Semicondctr		
3571 Elect. Computers	41	13
3572 Computer Storage	0	0
3573/5 Terminals	15	6
3577 Peripherals	19	4
3672 Circuit Boards	3	1
3674 Semiconductors	22	2
Subtotal	100	26
Other Electronics/ Electrical		
36	223	36
Automobiles		
2396 Auto Trim	0	0
3465 Auto Stampings	0	0
3711/10 Auto Bodies	143	38
3714/13 Parts & Accessories	11	1
Subtotal	154	39
Aerospace/Other Transport		
3720 Aircraft	14	0
3721 Aircraft	16	0
3724 Engines/Parts	3	0
3728 Other Parts	0	0
37 Other Transportation	31	5
Subtotal	64	5
Other Machinery		
35 Industrial Machinery	76	16
38 Measuring Devices	44	11
Subtotal	120	27
Non-metal Mfg		
30 Rubber/Misc. Plastics	23	7
32 Stone, Glass, Clay	33	2
Subtotal	56	9
Metal/Misc Mfg.		
33 Primary Metal	59	7
34 Fabricated Metal	26	0
39 Misc. Manufacturing	6	0
Subtotal	91	7

INDUSTRY	Coalitions Reported in Total Data Base	Coalitions Reported in Purchasing Only Data Base
Transportation Service		
40 Rail	1	0
41 Passenger	0	0
42 Motor	4	0
43 Post Office	0	0
44 Water	3	0
45 Air	20	0
46 Pipelines, except gas	0	0
47 Transport Service	4	0
Subtotal	32	0
Commun. Publishing & Recreation		
48 Communications	82	1
78 Motion Pictures	10	0
79 Amusement/Recreation	2	1
84 Museums, Zoos	0	0
Subtotal	94	2
Distribution		
50 Durables	44	3
51 Nondurables	10	0
Subtotal	54	3
Finance		
60 Depository	12	0
61 Nondepository	3	0
62 Brokers	3	0
63 Insurance Carriers	1	0
64 Insurance Brokers	0	0
65 Real Estate	3	0
67 Holding/Investment	12	0
Subtotal	34	0

INDUSTRY	Coalitions Reported in Total Data Base	Coalitions Reported in Purchasing Only Data Base
Services		
49 Electric, Gas & Sanit	15	1
57 Furniture Retailers	6	2
58 Eating/Drinking Place	1	0
59 Misc. Retail	1	0
70 Hotel/Lodging	2	0
72 Personal Services	1	0
73 Business Services	17	2
75 Auto Service	0	0
76 Misc. Repair	0	0
82 Education	1	0
85 Other	3	0
87 Consulting	10	1
89 Misc	5	0
Subtotal	62	6
Nonclassifiable		
99	22	1
-45/-99	49	7
Subtotal	71	8
Countries		
00's	42	8
Total	1612	179

APPENDIX J

COALITION TO GROSS DOMESTIC PRODUCT RATIOS BY COUNTRY

Location of Coalition Country for Total Wall Street Journal Data Base

DEVELOPED COUNTRIES	TOTAL COALITIONS REPORTED	GDP (Millions of US \$)	Coalition to GDP Ratio
North America			
United States	141	3634600.0	3.88
Canada	22	334110.0	6.58
North America	1		
Western Europe			
Austria	1	64460.0	1.55
Belgium	2	77630.0	2.58
Denmark	2	54640.0	3.66
Europe	19		
France	14	489380.0	2.86
Italy	12	348380.0	3.44
Netherlands	4	132600.0	3.02
Norway	1	54720.0	1.83
Spain	7	160930.0	4.35
Sweden	3	91880.0	3.27
Switzerland	1	91110.0	1.10
UK	20	425370.0	4.70
Western Europe	7		
West Germany	10	613160.0	1.63
Japan	77	1255006.0	6.14
Misc.			
Australia	10	182170.0	5.49
New Zealand	4	23340.0	17.14
Developing Countries			
Latin America			
Mexico	4	171300.0	2.34
Brazil	6	187130.0	3.21
Chile	2	19760.0	10.12
Columbia	1	34400.0	2.91
South America	1		
Tobago	1	8620.0	11.60
Venezuela	2	47500.0	4.21
Mideast			
Egypt	4	30060.0	13.31
Yugoslavia	2	38990.0	5.13
Turkey	4	47460.0	8.43

DEVELOPED COUNTRIES	TOTAL COALITIONS REPORTED	GDP (Millions of US \$)	Coalition to GDP Ratio
Far East			
China	74	281250.0	26.31
Hong Kong	3	30620	9.80
India	9	162280.0	5.55
Indonesia	5	80590.0	6.20
Korea	28	83220.0	33.65
Malaysia	4	29280.0	13.66
Pakistan	2	27730.0	7.21
Phillipines	2	32840.0	6.09
Singapore	2	18220.0	10.98
Thailand	4	41960.0	9.53
Eastern Europe			
Hungary	1	20150.0	4.96
Poland	1	75410.0	1.33
Africa			
Morocco	1	13300.0	7.52
Sudan	1	6730.0	14.86
Tanzania	1	4410.0	22.68
Tunisia	1	6940.0	14.41
		<u>Standard Deviation</u>	<u>Mean</u>
Developed (US, W. Europe, Japan, Australia, NZ)		3.67	4.31
Developing (Excludes E. Europe)		7.74	10.86

Source: World Development Report 1986

Note: Coalition Counts were excluded for those Countries where GDP data was not available. Europe Western Europe, and North America were included in the total for Developing Countries

Location of Parent Country for Total Wall Street Journal Data Base

DEVELOPED COUNTRIES	Total Coalitions Reported	GDP (Millions of U.S. \$)	Coalition to GDP Ratio
North America			
No America			
United States	578	3634600.0	15.90
Canada	49	334110.0	14.67
Western Europe			
Austria	1	64460.0	1.55
Belgium	8	77630.0	10.31
Denmark	8	54640.0	14.64
Finland	7	51230.0	13.66
France	64	489380.0	13.08
Italy	50	348380.0	14.35
Netherlands	42	132600.0	31.67
Norway	8	54720.0	14.62
Spain	12	160930.0	7.46
Sweden	18	91880.0	19.59
Switzerland	24	91100.0	26.34
UK	108	425370.0	25.39
West Germany	74	613160.0	12.07
Europe	19		
Western Europe	7		
Japan	293	1255006.0	23.35
Misc.			
Australia	11	182170.0	6.04
New Zealand	2	23340.0	8.57
Developing Countries			
Latin America			
Mexico	5	171300.0	2.92
Brazil	7	187130.0	3.74
Chile	1	19760.0	5.06
Trinidad/Tobago	1	8620.0	11.60
Venezuela	4	47500.0	8.42
Mideast			
Egypt	3	30060.0	9.98
Israel	2	22350.0	8.95
Yugoslavia	2	38990.0	5.13
Turkey	4	47460.0	8.43

DEVELOPED COUNTRIES	Total Coalitions Reported	GDP (Millions of U.S. \$)	Coalition to GDP Ratio
Far East			
China	93	281250.0	33.07
India	10	162280.0	6.16
Indonesia	7	80590.0	8.69
Korea	35	83220.0	42.06
Malaysia	4	29280.0	13.66
Pakistan	2	27730.0	7.21
Phillipines	3	32840.0	9.14
Singapore	5	18220.0	27.44
Thailand	5	41960.0	11.92
Eastern Europe			
Hungary	1	20150.0	4.96
Poland	1	75410.0	1.33
Africa			
Morocco	1	13300.0	7.52
Tanzania	1	4410.0	22.68
Tunisia	1	6940.0	14.41
		Standard Deviation	Mean
Developed (US, W. Europe, Japan, Australia, NZ)		7.68	15.18
Developing (Excludes E. Europe)		10.2	12.77

Source: World Development Report 1986

Note: Coalition Counts were excluded for those Countries where GDP data was not available. Europe and Western Europe were included in the total for Developing Countries.

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