

FORMATION PROCESSES FOR INDUSTRY LEVEL  
CO-OPERATION: AN EMPIRICAL ANALYSIS OF  
CO-OPERATION IN IRISH INDUSTRIES.

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## Declaration

I declare that this thesis 'Formation Processes for Industry Level Co-operation: An Empirical Analysis of Co-operation in Irish Industries' is based solely on my own work except where duly noted and acknowledged and I declare that this work has not been submitted for the award of a diploma or a degree at any academic institution.

The research was carried out under the supervision of Professor Brian Leavy, Dublin Business School, Dublin City University.

Signed

A handwritten signature in blue ink, appearing to read 'Lloyd Callan', is written over a horizontal line.

Lloyd Callan

1/10/96

## **Dedication**

To my parents, Sean and Bridget, whose support and help made this work possible, to Jack - 'They learned me enough', and to Katharina, thanks for all your support.

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## **Abstract**

The current co-operative strategy literature places heavy emphasis on bilateral co-operation: to take just three examples, joint ventures, partnerships and strategic alliances. Industry wide co-operation however has received less attention. In addition, there has been little research devoted to the formation of such alliances. Therefore this research attempts to discover more about this type of co-operation and how it is encapsulated into formal structures.

Empirical research was conducted on industry wide co-operation among Irish companies. The methodology chosen was inductive and exploratory. In total, three major and a number of minor case studies were completed.

Comparative analysis indicates that there are a number of precisely definable stages through which such industry-wide co-operation will proceed before it formalises or crystallises. It also highlights a number of factors that drive co-operation from one stage to the next. The most important of these are non-economic. It further suggests that the reason for initial industry wide co-operation may differ from the reasons which sustains the co-operation. The implications of these and other findings are discussed.

## Table of Contents

List of Figures	(i)
List of Tables	(ii)
List of Appendices	(iii)
 Chapter 1 Introduction	 1
 Chapter 2 Literature Review and Methodology	 5
Introduction	6
2.1    What is a Co-operative strategy ?	8
2.2    Firm Level Co-operation	11
2.2.1    Linkages Between Firms	11
2.2.2    Strategic Alliances and Partnering	13
2.2.3    Benefits of Strategic Alliances and Partnering	18
2.2.4    Strategic Risks of Firm Level Co-operation	28
2.2.5    Maximising the Benefits of Partnering and Alliances	32
2.3    Industry Wide Co-operation	36
2.3.1    Industry Associations	37
2.3.2    Collusion and Industry Price Leadership	39
2.3.3    Risks of Industry Wide Co-operation	40
2.4    How are Co-operative Agreements Formed ?	43
2.4.1    Firm Level Co-operation	44
2.4.2    Industry Wide Co-operation	47
2.5    Theoretical Framework	55
2.5.1    Research Objectives	56

2.5.2	The Pettigrew Context Process Outcome Framework	57
2.6	The Research Methodology	62
2.7	The Research Process	64
2.7.1	Selecting the Cases	64
2.7.2	Gaining and Maintaining Site Access	66
2.7.3	Collecting Data	67
2.7.4	Data Analysis	68
2.7.5	Confidentiality	70
2.7.6	Case Writing	70
2.8	Conclusions	72
Chapter 3	The Data	73
	Introduction	74
3.1	The 'Major' Cases	75
3.1.1	The Potato Merchants' and Potato Growers' Industry	75
3.1.2	The Contract Mouldmakers' Industry	91
3.1.3	A Homogenous Products Producers' Industry	108
3.2	The 'Minor' Cases	117
	Introduction	117
3.2.1	The Dublin Newspaper Industry	118
3.2.2	The Advertising Industry	119
3.2.3	The Grain and Seed Merchants' Industry	121
3.2.4	The Bandon Clothing Industry	122

3.2.5	Miscellaneous	123
3.3	Conclusions	125
Chapter 4 Analysis		126
	Introduction	127
4.1	Key Debates in the Co-operative Strategy Process Literature	128
4.2	Overall Patterns of Formation: A Phase Model	135
4.2.1	The Emergent Phase	137
4.2.2	The Transitional Phase	141
4.2.3	The Maturity Phase	144
4.3	Summary of the Phase Model	148
4.4	Do the other Data Contradict the Phase Model ?	155
4.4.1	The Potato Merchants' Industry	155
4.4.2	The Homogenous Products Producers' Industry	156
4.5	Informal Co-operation	159
4.6	Conclusions	165
Chapter 5 Conclusions		166
5.1	Implications for Management and for Future Research	167
Bibliography		173
Appendices		190

## List of Figures

1.	The Value Chain	12
2.	Context Process Outcome Meta Framework	58
3.	The Phase Model	149

## List of Tables

1.	The Emergence Phase	136
2.	The Transitional Phase	141
3.	The Mature Phase	144

## List of Appendices

A.	Interviews	191
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## CHAPTER ONE

### INTRODUCTION

As trade barriers continue to fall, and as the economies of the world converge towards a global economy, companies are being confronted with a whole host of new strategic issues. In the past, with protected domestic markets, a firm's primary concern was to develop its competitive strategy vis a vis other firms in the market. However, in more recent years, many firms are viewing these competitors as allies in the global economy.

The growth of alliances, joint ventures, consortia and other co-operative forms has been a major trend in many industries around the world including automotive, computer, semiconductor, aerospace and financial services for instance. By 1994, for instance, IBM had entered an estimated 4000 alliances, NEC had entered 130 and the number of strategic alliances worldwide was growing at an estimated 30% per year, (Rigby and Buchanan, 1994).

In the light of these developments, there has been an increasing interest in the study of co-operation and co-operative strategies from a strategic management perspective. Initially, management scholars were primarily concerned with the reasons for co-operation and the different types of co-operation that existed. However, more recently there has been an increasing interest the process by which this co-operation forms between companies in an effort to understand how a successful alliance works.

Existing process studies concentrate on formation processes for co-operation that occurs between small numbers of companies, typically two or three. However, co-operation can also be evident in an entire industry where most if not all of the companies in the business cooperate with each other to some extent. Examples of this include industry associations and collusion. This co-operation can radically transform the basic structural characteristics of entire industries. This can have both positive and negative effects on the firms within those industries. However, little research has been conducted on how this type of co-operation is structured within industries.

The purpose of this thesis is to investigate how co-operation at the overall level of the industry forms. Such research is of interest to academics. However it is of particular potential benefit to practitioners: those individuals or government agencies who seek to promote or establish co-operation at the overall level of the industry.

Chapter two contains a literature review on co-operative strategy. It is designed to give the reader an understanding of the various types of co-operative strategies, why co-operation is used and how co-operation emerges in industries. It introduces the research methodology and highlights some issues and problems in collecting qualitative data. This research is primarily inductive and exploratory, using a case based approach.

Chapter three contains three major and a number of minor case studies. The major case studies are concerned with process issues. These feature how industry wide co-operative strategies formed in three Irish industries; a homogenous products industry, contract mouldmaking industry and the potato industry. A pilot study during the earlier phases of this research revealed an important form of industry wide co-operation, informal co-operation. For completeness, a number of minor cases featuring informal co-operation are included to examine this phenomenon.

Chapter four is a detailed analysis of the data in conjunction with the relevant literature. The analysis contains a number of findings. It suggests that industry wide co-operation can go through a number of phases, emergence, transition and maturity. The reason for which companies in an industry can change over time, and there are a number of important drivers of this process. Informal co-operation is also discussed. Its prevalence in a wide variety of industries is highlighted, and a number of possible explanations for its existence are suggested.

Finally, chapter five contains a number of conclusions and recommendations for practitioners and also future research on this topic. One of the key considerations for practitioners is to understand the true nature of industry wide co-operation among competitors.

## **CHAPTER TWO**

### **LITERATURE REVIEW AND METHODOLOGY**

## Introduction

This literature review is designed to provide the reader with a broad appreciation of the strategic management literature on co-operative strategy. In particular, it illustrates the need for additional research to be completed on industry wide co-operation and its formation processes.

This chapter is divided into a number of sections. The first briefly describes co-operative strategy in general terms, and it draws the distinction between firm and industry level co-operation.

The second section shows that much of the literature deals with firm level co-operation. It reviews how much of this, if any, can be extended to industry level co-operation. Two main types of industry wide co-operation are highlighted that are based on the nature of linkages between firms. The benefits and risks of firm level co-operation are examined, and finally there is a discussion on how these risks can be limited.

The third section outlines a number of prevalent forms of industry wide co-operation. Benefits and risks are discussed, and some ways of limiting these risks are reviewed.

Section four reviews the current literature on co-operative strategy formation processes for both firm level and industry level co-operation. The majority of this work concerns firm level co-operation. Only three studies in the literature concern formation processes for industry level co-operation.

The Pettigrew (1985) contextualist framework is suggested in section five as suitable for investigating some of the questions raised by this review on industry level co-operation and its formation processes. Finally, a number of aspects of the research process are briefly discussed.

## 2.1 What is a Co-operative Strategy ?

Traditionally, the task for management was to devise a competitive strategy for the company, (Porter, 1980). All firms in the marketplace, for example buyers, suppliers, and competitors competed for profit. One firm gained at the expense of the other, and the market place was conceptualised as a battlefield, where there were winners and losers.

However, " business policy's ...' [b]attlefield analogy' must be de-emphasised. Exaggerated somewhat, the field seems obsessed with competitive survival", (Astley, 1984, p. 533). This statement suggests that there is another strategic alternative available to managers, this is co-operative strategy. With a co-operative strategy there can be winners and winners, one firm need not necessarily gain at the expense of the other. Both can gain.

A co-operative strategy can be defined as, "[t]he joint mobilisation of resources and the formulation of action within collectives of organisations", (Astley and Fombrun, 1983, p. 578). It is "the joint actions by organisations on matters of strategic importance", (Astley, 1984, p. 527). Co-operative strategies are long term relationships between firms that link aspects of their businesses but fall short of a merger on the one hand, and a reliance on market transactions on the other, (Porter and Fuller, 1986;

Thorelli, 1986). The emphasis of a co-operative strategy is for firms to cooperate as opposed to compete to maximise profits. Firms cooperate to achieve a strategic purpose which one firm, if it were acting alone, could not optimally achieve.

Many terms have been used to describe firm level co-operative relations between companies, for instance, joint ventures (Contractor and Lorange, 1988; Harrigan, 1983, 1988); alliances (Bleeke and Ernst, 1995; Devlin and Bleakley, 1988; James, 1985; Lorange et al, 1992; Ohmae, 1994); coalitions (Porter and Fuller, 1986); partnerships, (Lewis, 1990; Pelmutter and Heenan, 1986), consortia, (Browning et al, 1995); strategic out-sourcing, (Quinn and Hilmer, 1994); spider's web strategies (Gullander, 1976), trade associations, (Pfeffer and Salancik, 1978; Porter, 1990; Staber and Aldrich, 1983); federations, (Oliver, 1990; D'Aunno and Zuckerman, 1987) and co-operatives, (Roy, 1981)

Within these broad categories there are also sub-categories of co-operation between companies. These are usually based on the legal and organisational arrangement of the co-operative strategy, (Contractor and Lorange, 1988). Some researchers, for instance, have developed typologies of joint ventures based on the purpose for which they were created, (Harrigan, 1983; Contractor and Lorange, 1988). Two prominent forms or sub-groups of joint ventures include

licensing and franchising, for example.

However, co-operative strategies can be divided into two basic categories, firm level co-operation and industry level co-operation. Firm level co-operation concerns co-operation between small numbers of firms within an industry, typically two or three. Industry level co-operation, on the other hand, concerns co-operation between all or most firms in an industry. Both of these types have different structural characteristics, and the current literature places heavy emphasis on firm level co-operation.

## 2.2 Firm Level Co-operation

The first major group of co-operative strategies that are examined in this literature review are those that occur between small numbers of firms, typically two or three. Firm level co-operation can occur in two basic forms, strategic alliances and partnering. An understanding of the distinction between these two types of co-operative strategies requires an analysis of the linkages that occur between firms when they cooperate.

### 2.2.1 Linkages Between Firms

An appreciation of the nature of inter-firm co-operation requires an understanding of how certain aspects of businesses are linked. The value chain (Porter, 1985) is a useful analytical tool with which these linkages can be investigated.

The value chain desegregates a firm into its strategically relevant activities. These activities are the building blocks of competitive advantage. Firms gain competitive advantage by performing these strategically relevant activities cheaper, or better, than their competitors. The value chain is not a collection of independent activities, it is a system of interdependent activities which form linkages to create value.

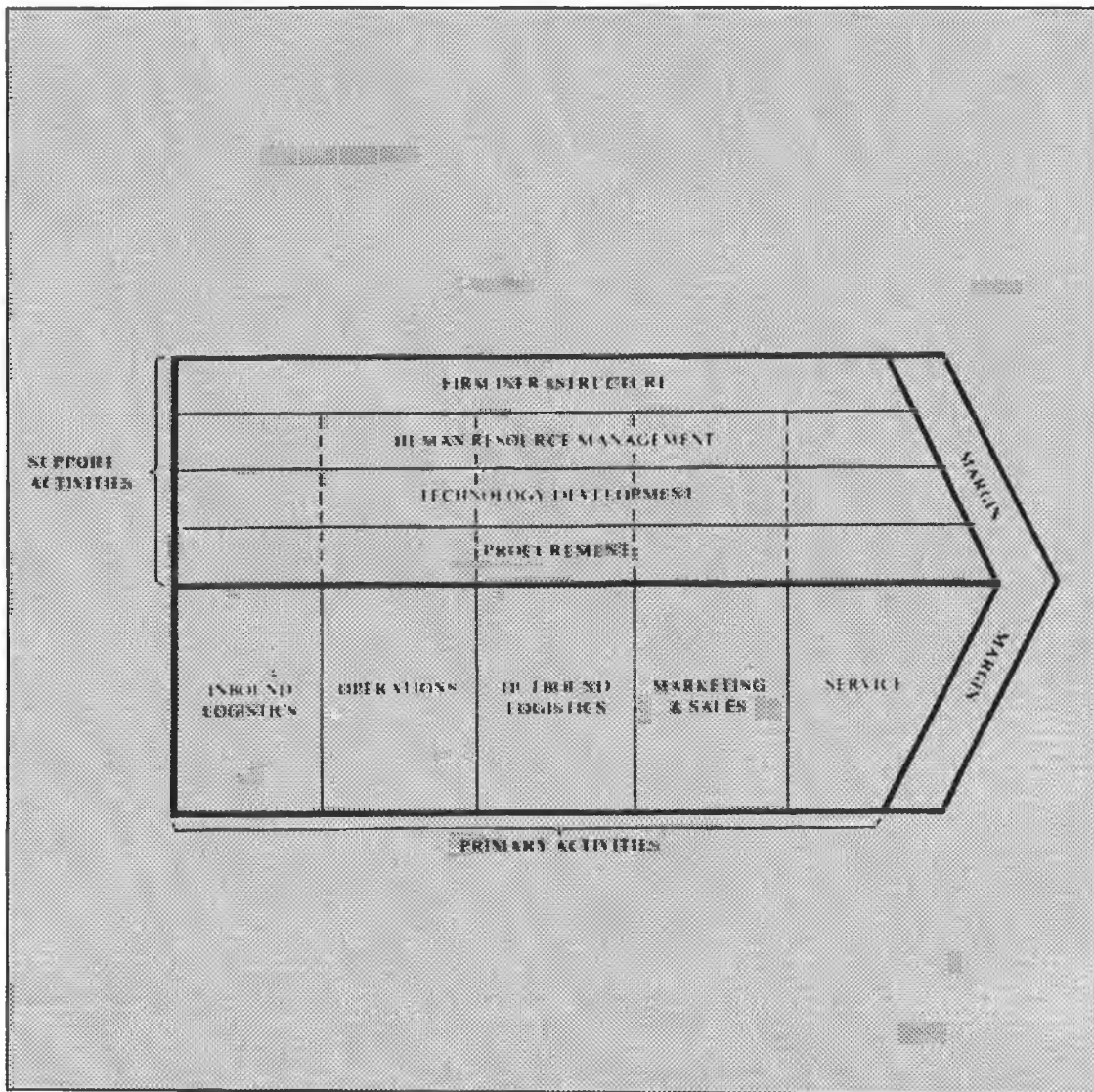


Figure 1: The Value Chain (Porter, 1985, p. 37)

Linkages can occur within the firm and between the value chains of the focal company and its buyers, suppliers and competitors, (Porter, 1985; Porter and Fuller, 1986). These linkages can be a valuable source of competitive advantage. Examples of these include closer coordination of schedules, co-operation on process and product improvements, and joint action on cost reductions to help reduce inventory investment and improve profit margins. These higher levels of coordination can result in delivering increased levels of quality and service to

upstream customers and end users. Linkages have allowed companies such as Marks and Spencer to achieve closer coordination. This gives higher levels of responsiveness, quality, and delivery at unrivalled prices, while also allowing the supplier to make a reasonable margin, (Montgomery, 1991).

#### 2.2.2 Strategic Alliances and Partnering

The value chain suggests that there are two basic types of linkages that exist between companies in inter-firm co-operative agreements. The first type are linkages across activities in the value chains of companies, ie linkages between buyers and suppliers, (non-competitors). These provide a tighter coordinating mechanism than an arms length transaction, but they do not go as far as a vertical merger, (Porter and Fuller, 1986). The second type are linkages within activities in the value chains of companies, for example, between competitors. This type of co-operation involves similar inputs from competing organisations, however, it falls short of a horizontal merger. For example, in the strategic alliance between JVC and Thompson, who both make VCRs, Thompson learns about product technology and manufacturing prowess. JVC learns how to succeed in the fragmented European market, (Hamel et al, 1989).

(i) Co-operation Between Non-Competitors: Partnering.

A partnership is a long term co-operative relationship between non-competitors. Typical examples of this include buyer-supplier relationships (Dwyer et al, 1987). In partnerships, each firm contributes distinctive but complementary resources to the relationship, (Contractor and Lorange, 1988). This type of co-operation involves the identification of the activities in which the firm is well positioned and the acquisition, through co-operation, those activities that the firm cannot perform effectively and efficiently 'in house', (Porter and Fuller, 1986; Jarillo, 1988).

The Ford Motor Company has improved the aerodynamic look of its cars by developing partnerships with its suppliers. A good example of this is the partnership between Ford and Excel Industries, a leading glass fabricator in the US. In recent years the window area in cars has grown dramatically. This trend, coupled with new aerodynamic designs requires novel approaches to the combination of glass and body designs so that a smooth integrated appearance is achieved. Traditionally, auto makers specified window designs to fit car designs. These new trends in styling and aerodynamics call for greater coordination between window shaping possibilities and advanced body concepts at the early clay model stage of auto design.

This requires a long term close relationship between the window supplier and the car maker. It commences with design. It continues for several years through the various design and engineering stages to the stage at which the vehicles are finally manufactured and ready for sale. The firms must be confident of their mutual commitments and abilities over this period. To build these tight links, Ford and Excel Industries have created an alliance that enables their respective engineers to operate as a single team over the period of auto design. Excel Industries pays its own costs. However, it has a long term supply arrangement and it is assured of 70% of Ford's business, (Lewis, 1990).

This type of relationship has also been called strategic out-sourcing of non-core activities, (Quinn and Hilmer, 1994). This allows firms to concentrate on a smaller number of what can be termed core competencies, (Prahalad and Hamel, 1990). Core competencies are not core products, they are skills and knowledge based. They are difficult to replicate. They are limited in number and embedded in the company's organisational systems. Core competencies may be termed the glue that binds a company together. They are the collective learning in the organisation. They coordinate the diverse production skills and integrate multiple streams of technologies. Examples of companies which have cooperated to develop strong core competencies are: Honda (power trains), Sony (miniaturisation) and 3M

(bonding technologies), (Quinn and Hilmer, 1994; Prahalad and Hamel, 1990; Quinn et al, 1990).

Ideally, partnering will occur when performing an activity with a partner is superior to performing the activity internally on the one hand, and relying on arms length transactions with other firms on the other. This will depend on the types of activities involved. Some are inherently more expensive than others, for example, technology development may be more expensive than marketing in some organisations.

(ii) Co-operation Between Competitors: Strategic Alliances

James (1984, p. 115) defines strategic alliances as "...common combat strategies which are formed to serve common interests such as preserving the balance of marketing power, controlling spheres of influence and protecting the corporate interests of the firm". According to Pelmutter and Heenan, (1986, p. 317) "...[t]heir relationship is organised along horizontal not vertical lines, technology exchanges, resource pooling and other 'soft' forms or combination are the rule." Therefore, strategic alliances are therefore long term co-operative relationships between firms who are often, although not always, competitors. The relationship is horizontal. However it falls short of a merger. Firms co-operating

through strategic alliances contribute similar resources to the relationship, (Contractor and Lorange, 1988; Porter and Fuller, 1986).

A good example of a long term strategic alliance is the 13 year old alliance between Ford and Mazda. Mazda teaches Ford about manufacturing and engineering, for example, just in time manufacturing. Ford teaches Mazda about design, finance and international marketing. Ford's Hermosillo plant in Mexico which manufactures the top selling Mercury Tracer, is modelled on Mazda's super-efficient factory in Hofu, Japan. One of every four Ford cars sold in the US in 1992 benefitted to some degree from Mazda's involvement, while two out of every five Mazda's showed the Ford stamp, (Hensler, 1993).

The New United Motors Manufacturing (NUMMI) co-operative venture between General Motors (GM) and Toyota is another example of a strategic alliance between two competitors. Toyota's objectives in NUMMI was to learn how to work with American employees and suppliers. GM wanted to understand and adapt Toyota's skills for improved quality and lower costs. This was seen to be a fair trade. Alliances in the pharmaceutical and chemical industries are also common due to the large costs associated with research and development, (Farrands, 1989).

Like partnering, firms form strategic alliances to improve certain aspects of their respective value chains and core competencies. Ideally, in a strategic alliance, this is achieved by each firm learning and adapting the best practices and principles of the other in a series of exchanges over the life of the alliance. Alternatively, it is achieved by each firm contributing similar resources to the alliance for a common purpose.

### 2.2.3 Benefits of Strategic Alliances and Partnering

The underlying benefits of co-operation are that it can reduce costs and risks and improve corporate strategies. A co-operative strategy's potential for reducing costs and risks for companies has been well documented (Aldrich, 1979; Bresser, 1988; Bresser and Harl, 1986; Oliver, 1990; Pennings, 1981; Pfeffer and Salancik, 1978). However a co-operative strategy must be formulated in conjunction with a firm's overall strategy for competing in an industry, (Porter and Fuller, 1986; Jarillo, 1988). Ideally, firms become more competitive by using co-operation to strengthen key aspects of their value chains and core competencies. Strategic out-sourcing may allow a firm to concentrate internal effort on a few key processes. Alternatively, a strategic alliance may allow access to new technologies for the development of superior products.

While these represent the underlying rationale for co-operation, the literature suggests that there are a number of more specific reasons for inter-firm co-operation:

(i) Market/Resource Access.

One of the most important reasons for firms co-operating is their need to access certain markets or resources, (Pfeffer and Salancik, 1978). Developing markets can be a time consuming, costly, and risky process for companies. Alliances and partnerships are used to reduce costs, risks and the time taken to develop new markets.

A good example of how co-operation can improve market access is the case of Tagamet versus Zantac in the pharmaceutical industry. Smithkline's Tagamet was the first ulcer 'wonder drug' and for several years it had the market to itself. Annual sales of this product approached a billion dollars, generating half of Smithkline's profits.

The British company, Glaxo, then created Zantac, which had similar properties. To build Zantac sales, Glaxo teamed up with Switzerland's Hoffman La Roche. These two companies assembled a marketing force of five thousand sales people, which simply 'out gunned' SmithKline's sales force of one thousand five hundred people. Despite the fact that the drugs were basically alike, Tagamet sales fell and Zantac

became the market leader, (Lewis, 1990).

The importance of using co-operation to access markets and resources is becoming more apparent due to the continuing trend towards the globalisation of world markets, (Badaracco, 1991; Ohmae, 1994). "...[g]lobalisation refers to a rethinking of traditional perspectives that reveals the world economy as a single market, unimpeded by national boundaries." (Badaracco, 1991, p. 18). More specifically, this means that consumer preferences in many countries are converging. Ohmae (1991, p. 37) refers to this as the "[c]aliforniazation of need". Consumers world wide are less concerned with the country of origin of a product and are more concerned with the quality, price and image of these products.

Firms may also need to cooperate to gain access to markets which are strictly controlled by governments, (Porter and Fuller, 1986). In this case a firm may ally itself with a local firm to gain access to markets with lower labour costs perhaps. Co-operating with local companies can also be a successful market penetration strategy for customising products for those local markets, (Roberts, 1980).

An example of this is in South Korea where import restrictions on personal computers have resulted in IBM negotiating with Hyundai on a co-operative venture to produce the IBM 5550 personal computer. Mexican government

value added requirements have influenced Ford's decision to enter into an alliance with a Mexican company to build 400,000 unit engine plant in Mexico to serve its US and Canadian operations, (Contractor and Lorange, 1988).

Companies may also wish to cooperate to produce better advertising, open new marketing channels, gain better channel control and also ensure improved supply. For instance, the Pilkington group in the UK uses alliances to secure strong supply relations in Japan. Pilkington provides glass for two thirds of all Japanese made sunglasses. To ensure its ties to firms that cut, edge, harden and polish the glass, Pilkington gives them the necessary technical and other help. It has also won their allegiance by buying and exporting sizeable quantities of finished lenses from them, (Lewis, 1990).

(ii) Technology Acquisition.

The pace of change in many technology based markets is now so fast that it can be more valuable to have the right technology when needed regardless of the origins of that technology, (Lewis, 1990). Today's products rely on so many different critical technologies that most companies can no longer maintain cutting edge sophistication in all of them, (Ohmae, 1994).

In addition, shorter product life cycles add momentum to the need to develop new and innovative products and to exploit them widely, (Devlin and Bleakley, 1988). To cover gaps in product lines and to supplement internal innovation, companies in many industries are increasing their search for new technology by developing alliances with other companies, (James, 1985).

The fixed cost of technological development has also risen dramatically in recent years, (Ohmae, 1994; Porter and Fuller, 1986). For instance, in the automotive industry it is not uncommon for development costs to exceed one billion dollars, as in the case of Ford's 'Mondeo' motor car. Therefore, firms need to maximise revenue from these technological developments (Contractor and Lorange, 1988; Ohmae, 1994) and they also need to share the costs of this development with other firms, (Ohmae, 1994). IBM spends more than £ 5 billion dollars per year on R & D, and makes most of its own chips. Despite this, it has turned to GE, Intel, Rockwell, Texas Instruments and other firms for needed chip technologies which it could not develop alone, (Lewis, 1990).

Acquiring technology not only shortens development time and reduces cost, it can also add value, thus creating superior products, (Contractor and Lorange, 1988; Lewis, 1990). Alliances can assist companies in providing more value whilst the product is in use, they can offer a stronger

product line and they can create new or improved performance. For example, Baxter Travenol, the US medical products company, solved hospitals' costly problem of having to mix unstable drugs with intravenous solutions just before use. Baxter combined what it knew about fluid stability and plastics formulation with the knowledge of drug makers Merck and Smithkline to produce stable premixed solutions, (Lewis, 1990).

(iii) Improve Operations.

Co-operation has frequently been used by companies to increase the efficiency of operations by sharing production, (Neilsen, 1990; Porter and Fuller, 1986). This strategy has been used in many businesses which have excess capacity and high production costs, thus using production facilities more efficiently. In 1989, due to capacity shortages in producing the 747-400 aircraft, Boeing turned to its rival, Lockheed, for a loan of six hundred workers. This provided Boeing with experienced technicians, and it also allowed Lockheed to retain a skilled workforce until new business could be developed, (Lewis, 1990).

General Motors uses co-operative arrangements with Isuzu and Suzuki to produce trans-axles in Japan for assembly in the US. Brazil serves as a source of small engines for Ford's US and European markets due to comparatively lower

production costs. (Contractor and Lorange, 1988). Co-operation can also be used to improve processes within companies, for instance, Xerox has shared cost saving plant design concepts with Kodak, (Lewis, 1990).

(iv) Changing the Competitive Structure of Industries.

Co-operation can shape the competitive structure of an industry. It can fundamentally alter the power dependence relations in an industry, for example by creating alliances to attack leaders, (Porter, 1985; Porter and Fuller, 1986). For example, Airbus Industries, is a coalition of a number of smaller, weaker, European aircraft producers which have combined to become a world class competitor, (Porter, 1985).

Caterpillar formed an alliance with Mitsubishi in Japan in order to put pressure on the profits and market of their common competitor, Komatsu. Japan is Komatsu's main market, where it generates 80% of its global cash flow. Even if the venture was not a success in the Japanese market it may have had an impact on Komatsu's ability to compete worldwide, (Hout, Porter and Rudden, 1982)

Co-operation can successfully penetrate markets when entry barriers are high, due to scale economies such as high capital costs, (Porter, 1980). Firms may need to reach a

larger scale to compete in certain markets effectively, this can be a time consuming process. However by co-operating with other firms such scale economies could be reached in a shorter time frame.

Co-operation has also been used by many firms in an industry to block new competition, or to limit existing competition. Firms in oligopolies, where there are a few large players may collude to fix prices, (Cohen and Cyert, 1965). Industry price leadership is a tacit form of collusion based on imitation where one company is the acknowledged leader in setting prices, (Bresser, 1988; Porter, 1980).

(v) Organisational Learning.

One of the most important reasons for forming alliances and partnerships is to develop and enhance a company's pool of knowledge, for example, its core competencies, (Prahalad and Hamel, 1990). Organisational learning can be developed by organisations working closely with one another and adopting each others' practices and principles. It is closely associated with technology acquisition, however, it has a broader focus, it also extends to management practices and cultures.

Ford's alliance with Mazda has facilitated cultural changes

at Ford. Driven by serious competitive problems in the early 1980s, Ford began to reorient its culture to focus more on people, customers, and quality. The new culture developed at Ford, focused on building and reinforcing those processes needed to ensure the growth of relevant strengths in Ford's management, decision making and manufacturing. (Lewis, 1990).

Hamel et al, (1989), suggest that in the 1980s Japanese companies formed alliances with Western companies to learn about Western companies' skills and technologies. for example, in the joint venture between Honda and Rover, Honda cultivated skills in European styling and marketing, whilst Rover cooperated only to avoid investments in engine design, (Hamel et al, 1989). As a result, Honda emerged the dominant partner.

Co-operation can also develop a company's core competencies in other important ways. By sharing non-core activities with others, alliances can focus internal efforts on the core competencies of the company, (Lewis, 1990; Prahalad and Hamel, 1990; Quinn and Hilmer, 1994). The Japanese Semiconductor company, NEC, by 1987 had used over 100 alliances which were aimed at building competencies rapidly and at low cost. (Prahalad and Hamel, 1990).

(vi) Speculative Reasons.

There are also speculative reasons for firms co-operating. Here, co-operation may occur for vague reasons as opposed to specific technological development and market access reasons. For example, firms may not always know the best course of action to take when developing a market and therefore they may wish to cooperate to spread the risk. Wendy's International, the hamburger chain, and the US ice cream maker Baskin Robins used an alliance to explore the drawing power of their combined product lines. To do this they added an ice cream parlour to some of the Wendy's outlets, (Lewis, 1990).

Some companies enter co-operative agreements for fashion and fear reasons, (Devlin and Bleakley, 1988). As companies witness more of their competitors forming alliances they follow suit. One of the motives for the alliance between Mitsubishi Motors of Japan, and Hyundai of South Korea for the design and manufacture of low price cars was to pre-empt any potential alliance between Hyundai and one of Mitsubishi's Japanese competitors.

(vii) Multiple contingencies.

As the previous analysis suggests, there are a wide variety of reasons for firms in industries to cooperate. An important point in this regard is that the decision to cooperate is usually based on multiple contingencies, (Oliver, 1990). Porter and Fuller, (1986), refer to these as multiple activity coalitions. They arise because certain activities are inexorably linked and there is a need for coordination between activities for example marketing and technological development. It may also be easier to reach an overall agreement for several activities rather than negotiating several separate agreements. Honda, for example, cooperated with Rover to gain a foothold in the European car market (market access) as well as developing its design skills (learning).

2.2.4 Strategic Risks of Firm Level Co-operation.

(i) Strategic Risks of Partnering

Quinn and Hilmer (1994) outline three possible risks of partnering through strategically out-sourcing non-core activities, these are; the loss of critical skills or developing the wrong skills, loss of cross functional skills and the loss of control over a supplier.

Many companies have out-sourced what was believed to be only small items such as semiconductor chips and taught suppliers how to build them. These suppliers later supplied competing firms with these items or perhaps stopped supplying the firms who originally out-sourced the components. By this time, it was often too late for the companies who originally out-sourced the components to try to develop these competencies once more, (Gugler, 1992). Strategic out-sourcing can lead to loss of strategic flexibility for the company, (Ansoff, 1984), examples of this would be not being able to introduce new product designs, or perhaps not being able to respond to competition effectively due to underdeveloped competencies.

Interactions between skilled people in different functional activities in organisations can often produce innovative solutions to problems. Strategically out-sourcing certain activities can damage these synergies. The 3M 'Post It' note was as a result of a mistake made by a chemist whilst trying to produce a very strong adhesive. In reality, a very weak adhesive was produced and as a result of telling colleagues of the error the 'Post It' note was conceived (Peters and Waterman, 1982). Out-sourcing can place this synergy at risk by removing critical elements.

Partnering requires ongoing coordination between the partners which involves considerable management time and money. Coordination may prove difficult to achieve as

partners have divergent interests and each partner may want to play a bigger role than the other. Therefore, getting partner support is not always easy. Co-operation requires that each partner perform their activities to the optimum standard and this implies increased cost. For example, a firm may not be able to persuade its partner in a manufacturing coalition to perform enough inspection, because after sales service costs fall outside the coalition, (Porter and Fuller, 1986). To maintain control some companies in partnerships even go to the extreme of owning the piece of equipment that their partner uses to produce the out-sourced components, (Quinn and Hilmer, 1994).

(ii) Strategic Risks of Alliances

Hamel et al, (1989) Hamel and Prahalad, (1989) and Prahalad and Hamel, (1990), suggest that strategic alliances are actually competition in a different guise. Firms compete for knowledge and alliances can become learning races between organisations. Japanese companies, for instance, were intent on learning from Western companies when they entered a number of alliances in the 1980s. They digested the skills of their Western counterparts and this enabled them to become better competitors in the longer term. This learning came in the form of every day, small discrete steps, asking questions and requesting designs. Strategic

alliance between Japanese companies and Taiwanese or Korean companies on the other hand are uncommon as each company "does not want to open the Kimono.", (Hamel et al 1989, p. 135).

Conflicts of interest can arise between organisations due to the need to conceal and share strategic information between competitors, (Bresser, 1988). The advantage of co-operative strategies is stability through predictability as it establishes linkages or channels through which information may be shared, (Fombrun and Astley, 1983). However, this is a disadvantage where competitive strategy is concerned as it can lead to unintended information disclosure, (Bresser, 1988), which may have undesired consequences for competitive strategies. Therefore the greatest risks of co-operation are that it can create a competitor or make an existing competitors more formidable, through the transfer of expertise and market access.

For example, in the NUMMI alliance between Toyota and GM, outlined previously, Toyota needed to apply what it had learned to just one US plant. Transferring its NUMMI experience was a matter of hiring employees who met Toyota's criteria and adapting human resource and supplier lessons from the venture. Toyota's management style was already aligned with its human resource based production methods.

GM, by contrast, had to introduce its lessons into scores of existing plants. The numbers alone made GM's task much harder. An even greater barrier came from GM's culture. Effective worker involvement required basic changes reaching to the highest levels of management levels. GM also faced deep-seated employee resistance which was derived from decades of mistrust.

Therefore, Toyota was better prepared to reap the benefits from co-operation due to its organisational structure and also the structure of the agreement. It gained these benefits quickly and proceeded to increase its market share and capacity. GM, on the other hand, needed many years to absorb the lessons it sought and it continued to lose market share. The balance in the alliance appeared to have favoured Toyota, (Lewis, 1990).

#### 2.2.5 Maximising the Benefits of Partnering and Alliances.

Management can guard against the risks of co-operation in two basic ways which are inextricably linked. The first concerns the basic structure of the relationship between the parties and the second concerns the actual management of the co-operative agreement. Bresser (1988) provides an interesting typology of the feasibility of various types of strategy combinations. This can be used by managers to match co-operative and competitive strategies. Assessments

are made of both the risks of unintended information disclosure and also the possible gains as a result of co-operation. Bresser, (1988), suggests that strategic alliances represent the greatest threat for unintended information disclosure whilst trade associations hold the least threat.

Ring and Van De Ven (1992) examine the structuring of co-operative relations between competitors. Such relations between competitors require "...internal mechanisms designed to preserve the relationship and ensure that both the efficiency and the outcomes sought in the long term relationship are realised.", (Ring and Van De Ven, 1992, p. 487). These mechanisms can be the formal or legal agreements between the parties for example, and therefore it is this agreement that determines what exactly the parties intend co-operating on and what they intend competing on. This provides a 'dividing line' between co-operation and competition.

Internal mechanisms require safeguards and the object of these safeguards is to immunise the parties from the adverse consequences that could flow from unanticipated commercial or technological risks. Of critical importance in designing safeguards is an assessment of a number of criteria, these are risk and trust. Risk occurs due to uncertainty in time, information and control whilst trust refers to confidence in predictability, the elaborateness

of safeguards is a function of the perceived risk and the reliance on trust by the parties, (Ring and Van De Ven, 1992).

Partner selection is also a vital structural concern for establishing co-operative relations (Quinn and Hilmer, 1994; Porter and Fuller, 1986, Lewis, 1990; Devlin and Bleakley, 1988; Lorange et al, 1992). The basic criteria for partner selection is to determine how the competitive position of the firm will be affected in the long term by co-operation.

Management must assess their ability to work with partners, for example, is there any personal chemistry between top management in the firms? Are their cultures and philosophies similar or divergent? As Kanter, (1994) notes "...what starts out as personal rapport, philosophical and strategic compatibility, and shared vision between two companies' top executives eventually must be institutionalised and made public.", (Kanter, 1994, p. 102)

Hamel and Prahalad (1989, p. 138) note "...most learning takes place at the lower levels of an alliance...they must be well briefed in the partner's strengths and weaknesses and understand how acquiring particular skills will bolster their company's particular skills". Therefore, employees as well as management need to be aware of the nature of co-operation with competitors. This is important when firms wish to guard against the possible risks associated with

the day to day running of an alliance and the risks associated with unintended information disclosure.

'Gatekeepers' have an important role in maintaining the balance between the benefits of co-operation on the one hand and the possible risks of unintended information disclosure on the other. 'Gatekeepers' are the people who control what information goes to a partner and they ensure that only essential knowledge is transferred, (Hamel et al, 1989). 'Gatekeepers' may occupy a separate collaboration section in the facility within which the alliance operates. The nature of the information is of course important. For example it is more difficult to assimilate knowledge on manufacturing excellence than it is to acquire technical information.

## 2.3 Industry wide co-operation.

### Introduction

As the forgoing review suggests co-operative strategies are receiving growing attention in the literature, though many issues remain to be resolved. However the subject of industry wide co-operation has received much less attention.

The current literature suggests that the main types of industry wide co-operation are industry associations, (Bresser, 1988; Bresser and Harl, 1986; Oliver, 1990) and collusion (Bresser, 1988). These forms are examined in detail in this section. For completeness, risks of industry wide co-operation and methods of reducing these risks are also discussed.

### 2.3.1 Industry Associations

An industry association is a "... [c]oalition of firms or business-persons who come together in a formal organisation to cope with forces and demands to which they are similarly exposed." (Staber and Aldrich, 1983, p. 163).

Industry associations provide member organisations with special services at low costs. For instance they may distribute trade statistics, analyze industry trends, provide credit references on customers, offer legal and technical advice, or help collect bills, (Bresser, 1988; Olson, 1965). Industry associations can also negotiate discounts for members through group purchasing (Oliver, 1990). For example, the Service Stations Operators Association (SSOA), which represents Texaco franchisees in Ireland, has negotiated better terms for its members with wholesalers, credit card companies and banks, (Callan, 1993).

Industry associations can be used to create a common marketing infrastructure, organise trade shows and fairs and conduct market research. Associations can also facilitate inter-member communication by publishing journals, newsletters and magazines (Oliver, 1990). Co-operatives have been integral to the export success of Danish agricultural based industries, (Porter, 1990). In the Italian apparel, shoe, ceramic tile and furniture

industries, industry associations played a role in improving communications and logistical facilities, investigating process technology, and holding trade fairs, (Porter, 1990).

In Japan, industry associations support and help develop linkages between buyers and suppliers by collecting and disseminating information and sponsoring research. Keiretsu in Japan are large groups of related companies, usually with a bank at the centre. They facilitate interchange among related companies who look to each other for guidance and input on new products, new processes and new businesses, (Porter, 1990).

Industry associations are also formed to conduct research, (Pfeffer and Salancik, 1978). Research on consortia for instance suggests that organisations in an industry cooperate to pool and share the costs of research, (Browning et al, 1995), and to share technology, (Gibson and Rogers, 1994). For example, Sematech is a consortium of US semiconductor manufacturers which was formed to improve the industry infrastructure, the supplier base, the manufacturing processes and the management of the factories, (Browning et al, 1995)

By producing codes of ethics for members, industry associations promote a positive and legitimate industry image (Gupta and Lad, 1983; Oliver, 1990). Associations

may also provide members with standard product definitions and quality guidelines. For example, the Irish Grain and Feed Association regularly conducts checks on the quality of members' seeds and grains. Without certification this produce cannot be sold.

Membership of an industry association can offer a more regular supply of finance to organisations and improve members relative bargaining power, (Litway and Hylton, 1962; Oliver, 1990; Provan, 1983). For example, hospitals in the US have used industry associations such as the United Way to raise funds more effectively and efficiently, (D'Aunno and Zuckerman, 1987).

Finally, industry associations lobby government and public policy makers, (Gupta and Lad, 1983; Oliver, 1990; Porter, 1990; Staber and Aldrich, 1983). Industry associations promote the interests of their members, make members' viewpoints known to government, and lobby public policy makers to achieve favourable legislation.

#### 2.3.2 Collusion and Industry Price Leadership.

The term "collusion" denotes express agreements open or secret that have the purpose of restricting competition in an industry, (Bresser, 1988). Most collusive agreements are outlawed however because they encourage monopolistic

pricing behaviour. Nevertheless, collusive agreements do exist and are often effective forms of co-operation among organisations. Their attraction is associated with a high degree of informality which makes it difficult for outsiders to detect conspiratorial agreements, (Khandwalla, 1981).

Industry price leadership is a tacit version of collusion based on imitation. It describes a situation where a specific firm is the acknowledged leader in setting prices, and other firms follow. Unlike collusive agreements, industry leadership has the advantage of not being contrary to antitrust laws. It is considered legal as long as it is grounded on voluntary imitation rather than explicit communication, (White, 1981).

### 2.3.3 Risks of Industry Wide Co-operation

Industry wide co-operation can provide a number of benefits for firms. However, it can also contain a number of adverse consequences. When firms in an industry cooperate they abstain from competition in certain areas (Pennings, 1981; Bresser and Harl, 1986; Lewis, 1990). Co-operation can effect the structure of industries, (Porter, 1980; Porter and Fuller, 1986). Industry structure refers to the rules of the game that firms play by. Rules of the game provide a degree of certainty and stability for companies

competing in an industry. However, co-operation may provide the industry with too much stability, for example price fixing, which can have serious legal consequences, (Phillips, 1962; Scherer, 1980).

Excessive stability may also attract new entrants into the industry, (Caves, 1982). Existing firms may not be able to mount a challenge to these new firms, and thus could go out of business.

One example of the risks associated with industry wide co-operation comes from the banking industry in the US. In the 1970s US banks succeeded in using existing regulation to forestall competition by keeping regulated ceilings for interest rates on deposits artificially low to boost profits. However, these low rates attracted new entrants into the industry in the form of brokerage houses, like Merrill Lynch, offering money market funds at higher rates.

The banking industry could only respond to the challenge posed by these money market funds after federal restraints and regulations on short term deposit rates were removed. By the time this had occurred Merrill Lynch had become a significant market player, (Bresser and Harl, 1986).

Therefore, it is important to manage the balance between the benefits of co-operation and the possible dysfunctions (disadvantages). Bresser and Harl (1986) suggest that this

process can be effectively managed in two ways. Managers can abandon the co-operative strategy altogether, thereby resuming competition. Any disadvantages resulting from co-operation are therefore removed. Alternatively managers can 'mute' any of the unintended consequences of co-operation by renegotiating, or improving, dysfunctional agreements.

## 2.4            How are Co-operative Agreements Formed ?.

### Introduction

This literature review has suggested that there are two basic forms of co-operation, firm level co-operation and industry level co-operation. Examples of these include strategic alliances, partnerships, trade associations and consortia. The benefits, risks and means of limiting these risks have also been discussed. The majority of studies on co-operative strategies to date have been primarily concerned with two issues, why do firms cooperate and what forms of co-operation exist.

This section reviews the current literature on formation processes for firm and industry level co-operation. In general, formation processes for co-operative strategies have received little attention in the literature to date. More specifically, there are only three studies which consider industry level co-operative formation processes. Of these, only one is an empirical study.

#### 2.4.1 Firm Level Co-operation.

The study of how co-operative relations between organisations form has only begun to receive any attention in the literature, (Smith et al, 1995). Research to date has focused on the conditions necessary for co-operation to occur, and the forms that this co-operation subsequently takes.

Studies have identified a number of elements that are important to the formation process for co-operative agreements between organisations. Trust must be fostered in a relationship (Browning et al, 1995; D'Aunno and Zuckerman, 1987; Ring and Van De Ven, 1992, 1994; Sherman, 1992; Sheth and Paravatiyer, 1992; Tallman and Shenkar, 1994). Trust decreases risk, (Ring and Van De Ven, 1992), however trust is not assumed, and it must be built up over time, (Axelrod, 1984), for example by making unilateral commitments, (Gulati et al, 1994).

Other studies emphasize the important role of non-economic criteria when considering co-operative formation processes. Leadership has a key role to play, (Kanter, 1994; Ring and Van De Ven, 1994). This can come in the form of key strategic actors, (Leavy, 1991), venture champions and role models, (Shortell and Zajac, 1988), leaders, (Browning et al, 1995) and champions, (Tallman and Shenkar, 1994). Leadership can foster trust and innovation, (Browning et

al, 1995). It may also overcome many of the resistances to change that occur in organisations, (Kanter, 1984).

Another important feature of the co-operative strategy literature is that these processes are often complex, messy and unintended. The literature also suggests that informal processes are important, (D'Aunno and Zuckerman, 1987; Kanter, 1994; Ring and Van De Ven, 1994). For example, Haigh (1992) noted that the joint Ford and Mazda facility in Mexico was producing cars months before the formal agreement was signed by the parties. Other critical elements include the ability to resolve internal disputes, (Ring and Van De Ven, 1994).

A number of studies provide process models for the formation of alliances between companies. Bluestein (1994) describes four stages through which an alliance is formed: strategy development, partner assessment, contract negotiations and implementation. Lorange et al (1992) propose that the alliance formation process comprises two stages, an initial phase and an intensive phase. The initial phase deals with assessing the match between the partners and the broad benefits to each from co-operating. The second more intensive phase is concerned with such issues as the strategic position of the venture vis a vis competitors and the drafting of a strategic plan. These studies however concentrate on stages and they fall short of providing an insight as to how the venture might proceed

from one stage to another.

Some studies in the literature provide a comprehensive insight into how co-operation forms between organisations which feature both the critical elements and the stages or the phases highlighted above. These studies are concerned with the developmental processes associated with the formation of alliances, (Lorange et al, 1992; Ring and Van De Ven, 1994; Shortell and Zajac, 1988), and buyer-supplier relationships, (Dwyer, Schurr and Sejo (1987)).

These studies suggest that joint ventures go through a number of stages of development and that the progression from one stage to the next is guided by a number of heuristics. Ring and Van De Ven (1994) suggest that co-operative inter-organisational relations emerge, develop and dissolve over time and that the progression from one stage is facilitated by "...[t]he repetitive sequence of negotiation, commitment and execution each one of which is assessed in terms of efficiency and equity, (Ring and Van De Ven, 1994, pp. 96-97). Social process such as prior social ties, institutionalisation and attachment are also important.

Similarly, Dwyer, Schurr and Sejo (1987) in examining buyer-supplier relations list five relationship development processes or stages. These are: awareness, exploration, expansion, commitment and dissolution. These are also

guided by what the authors term "sub-processes" such as attraction, communication and bargaining, power and justice, and norm development.

Shortell and Zajac (1988) consider the development of Internal Corporate Joint Ventures (ICJV's) and propose a three stage iterative model of formulation, implementation and reformulation. Unlike the previous two studies the authors do not examine decision making processes that guide the model but consider the effects of the environment, organisational context, and process factors that affect the performance of ICJV's. Environmental factors examine how supportive the environment is, for example, the level of competition. Organisational context factors examine the level of internal supportiveness, for example, the amount of prior experience of co-operating and the level of resistance. Finally, process factors are concerned with strategic integration, processual concerns, operational autonomy and performance related reward systems.

#### 2.4.2 Industry Wide Co-operation.

Fewer studies have concentrated on the developmental processes associated with co-operation developing in an industry as a whole. The literature reveals three such studies: Dollinger (1990) in a fragmented industry setting, Browning, Beyer and Shetler (1995) in the more concentrated

semiconductor industry in the US, and D'Aunno and Zuckerman, (1987) for hospital federations. The Browning, Beyer and Shetler (1995) study is the only empirical work.

(i) Browning, Beyer and Shetler, (1995).

This study examines how co-operation can emerge in a competitive setting. To achieve this the US semiconductor industry was empirically examined. Sematech is a research consortium that eventually represented 75% of the industry. Sematech was established to improve the industry infrastructure, the supplier base, the manufacturing processes and the management of the factories. It was also concerned with improving the quality of the semiconductors and in particular the size of the circuits on the chips. All this was done in the face of intensifying competition from Japanese companies. The project received full US Government support.

The study proposes that the process by which co-operation forms in a competitive industry can be explained by *complexity theory*. Complexity theory posits that "the self organising of complex ordered systems from apparent chaos does happen, all the time, all around, even when it is misunderstood, unappreciated or unwanted", (Browning et al, 1995, pp. 139).

Firstly, for co-operation to emerge a *bifurcation point* must be reached. This is a period of disequilibrium that ushers a break with the past. Participants "de-commit" themselves from existing processes and values. It is at this point that some may consider radical new ideas, for example co-operation, as viable strategic alternatives, Axelrod (1984) refers to this as the shadow of the future.

Co-operation spreads as a result of the milieu of micro level social interactions that occur between individuals as constituents of organisations as they search for the best practices inside and outside the industry. They are not necessarily as the result of the underlying economic logic to cooperate. They involve a certain degree of bounded rationality, learning, imitation and a willingness to contribute this to a co-operative effort. This culminates in what is called a *moral community*. Non-directive leadership style is important for these self organising processes and leaders are not advised to get involved with practical affairs as it can "tarnish their charisma", (Browning et al , 1995, pp. 141).

Resulting from these self-organising processes a new order can emerge which is more complex than the previous situation of chaos. To achieve this, the system must remain open to change and this new order may have a number of unintended consequences. For this new order to gain acceptance inputs of new energy are required, particularly

in the form of leadership, these are called 'cultural leaders'. Complexity theory does not account for the sources of these.

Therefore, complexity theory helps to explain how small discrete events can have large consequences. Individual contributions can become self amplifying because they can give birth to a 'moral community' and can subsequently create structures that in turn create other structures (new order). It also highlights the importance of an initial crisis or chaos that makes a break with the past and stimulates an openness to radical new ideas.

(ii) D'Aunno and Zuckerman, (1987).

This study develops a life-cycle model for hospital federations which is based on life-cycle models for individual firms. This model has four stages and progress through each of these stages is guided by management completing one or more key tasks during each stage. These four stages are:

(a) Emergence of a Coalition.

A coalition of hospitals emerges prior to the formation of a federation. This coalition can be formed usually because hospitals are facing some sort of threat to their

existence. A typical example of this would be a government proposal to reduce health care funding to hospitals. Hospital management form a coalition with the broad aim of lobbying politicians to influence voting on this proposal.

Key tasks for hospital management at this phase are to define the exact purpose of the coalition and also to develop a membership criteria. Membership is usually based on similar ideologies, or type of community they serve. For instance, a coalition of 40 university hospitals has been formed in the US.

(b) Transition to a Federation

In this stage the key issues include sustaining and increasing member commitment to achieving the goals of the federation and increasing members' dependence on the federation for valued resources. Management can experience problems in sustaining member's commitment to the federation and detractors can emerge. This lack of commitment usually results from individual hospitals' reluctance to grant authority to executive committees and management groups. Achieving financial support from members can also be a problem.

One of the key tasks for management at this stage is to hire or form a management group. One of the principal reasons for this is that managing a federation is a time

consuming process and many hospital managers do not have the time to do this along with managing their own hospitals. The other task for management is to establish formal mechanisms for coordination and control. This provides effective management of fund raising, budgetary control and it helps to build trust between members.

(c) Maturity of a Federation.

This stage is dependent on a number of factors. There is a need for continued and increased investment of resources by members and a willingness of members to put the interests of the federation first. During this phase the federation cannot meet all of the requirements of the members simultaneously hence the need for members to put others' needs first.

The key tasks for management at this stage are to meet the stated objectives of the federation and to assure members that their concerns will be addressed as equitably as possible in the long run.

(d) Critical Crossroads.

In this final stage, there is increased centralisation and dependence on the federation which motivates members to either withdraw from the federation or move towards merger or common ownership. Members may wish to withdraw because

membership may have reduced their autonomy and heightened their dependence on a single actor. On the other hand, members may believe that the benefits outweigh the costs and they may wish to amalgamate further.

A central factor influencing movement in either direction is likely to be the ability of the management group to identify and resolve issues concerning control in the federation and the autonomy of the individual members. This is difficult because the influence of the management group itself may be in question.

(iii) Dollinger, (1990).

The final study on how co-operation emerges in an industry concerns fragmented industries. Fragmented industries are industries in which no firm has an overall dominant position (Porter, 1980). Mutual interdependence is a necessary prerequisite for co-operation. However firms in fragmented industries have a problem recognising this mutual interdependence due to their relative size and the number of other firms in the industry. Dollinger (1990) argues that co-operative strategies are no less salient in fragmented industries. These strategies are emergent strategies, i.e. they manifest themselves as patterns or consistencies in firm behaviour (strategies) in the absence of intentions. Therefore, according to the study,

overarching co-operative strategies in fragmented industries emerge unintendedly over time.

Dollinger (1990) draws heavily on the earlier work of Axelrod (1984) in explaining the evolution of these 'emergent collective strategies'. There are early stages of development and this comes in the form of earlier pairwise co-operative behaviour between smaller numbers of firms. Co-operation spreads throughout the whole industry unintendedly, until all or most of the companies in the industry appear to be co-operating. The mechanisms by which this collective strategy can spread through the industry are; imitation, learning, direct contact between firms in the industry, and firms acting in a similar manner due to the effects of competition. The process focuses on the micro level changes that aggregate into macro level phenomenon.

If a sufficient number of companies in an industry adopt the same strategy, a critical mass is reached when the strategy becomes recognised as a discernable feature of the industry. At this point the emergent collective can become self conscious and develop into a full blown collective strategy, it can decay, or it can remain emergent strategy. Therefore, in fragmented industries co-operation does not emerge as a full blown, recognisable, co-operative strategy. It has earlier more subtle stages of development.

## 2.5 Theoretical Framework

### Introduction.

The co-operative strategy literature is extensive. However, it is underdeveloped in a number of respects as the literature review has illustrated. Little research has been done on the processes by which co-operative strategies form, especially in the case of industry wide co-operation. Furthermore, little if any attention has been given to the process of informal co-operation to date. Both of these areas are addressed in the current study.

Because relatively little is known about the processes of interest, the research in this dissertation is exploratory and descriptive in nature. The overall approach is case based, and the research design is built around three major and a number of minor cases.

A suitable conceptual framework was required to provide guidelines for conducting research on industry level co-operation and in particular its formation processes. Prior to choosing a suitable framework, research objectives and a number of research questions were determined.

### 2.5.1 Research Objectives.

The objective of this research is to discover more about industry level co-operation and in particular the processes by which it forms in a variety of settings. The type of questions that this research hopes to answer are:-

- Are there different types of processes or are there similarities across formation processes ?, for example, are there phases of co-operation as the literature suggests ?
- What are the driving forces of formation processes, are they social, economic or behavioral ?
- Do the rationale for of industry level co-operation change over time for any reason ?
- Are there any other different types of industry level co-operation other than those mentioned in the literature review ?
- Is the overall formation process deliberate or emergent ?

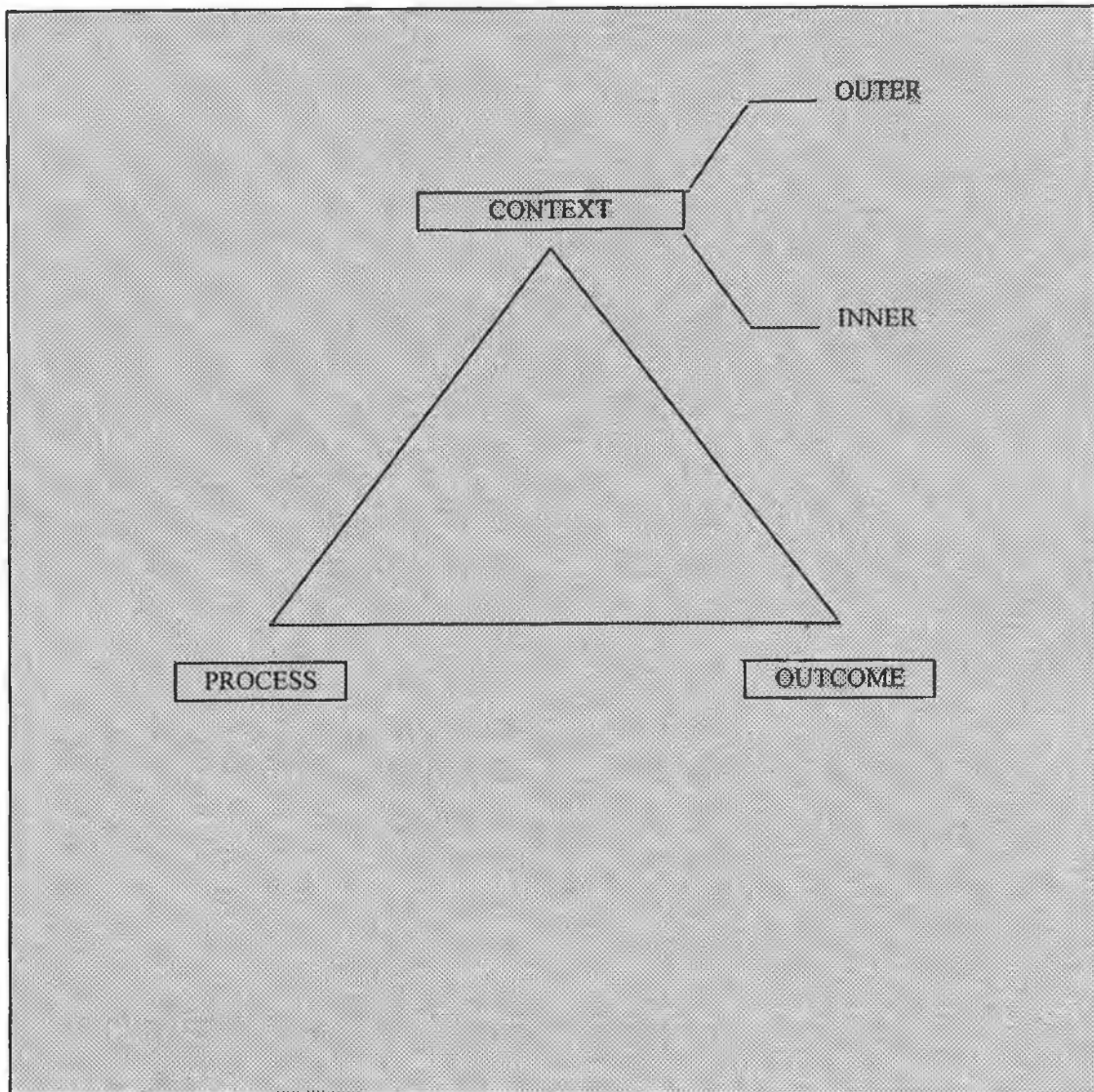
The research needed a theoretical framework which could answer these and similar questions. More specifically, the

research required a theoretical framework:-

- That considers the context within which co-operation emerges. The current literature suggests that environmental context is a key determinant of co-operation.
- Allows for patterns of continuity and change to be observed over time.
- That can take account of social as well as economic factors. For instance, the role of leadership is a re-occurring theme in the literature.
- Finally, the framework needed to be theoretically sound whilst allowing for flexibility in research design on the part of the researcher.

#### 2.5.2 The Pettigrew Context Process Outcome Framework.

The Pettigrew (1985) contextualist framework is a conceptually sound, and empirically useful framework for the study of industry level co-operation and in particular its formation processes. This framework considers the content of a chosen strategy, the management of the process of change and the contexts in which it occurs.



**Figure 2:** The Context, Process, Outcome Meta Framework (Pettigrew, 1987, p. 5)

Two aspects of context are considered: the inner and outer contexts of the firm. Inner context refers to the to the structure , corporate culture and the political contexts within the firm through which ideas for change have to proceed. Outer context refers to the economic, business and political and societal formations in which firms must operate. The process of change refers to the actions,

reactions and interactions form the various interested parties as they seek to move the firm from its present to its future state. Process are both constrained by contexts and shape contexts. Therefore the 'what' of change is encapsulated under the label content, much of the 'why' of change is derived from an analysis of inner and outer context, and the 'how' of change can be understood from an analysis of process, (Pettigrew, 1987).

The framework is flexible because it relies on broad organising principals rather than a tightly specified research method. It provides direction for research on the strategy process whilst allowing originality on the part of the researcher on the specifics of research design, (Leavy, 1992). The framework offers analytical structure at a broad level but no over restrictive theoretical web. There is plenty of space to adjust research designs and study questions as one moves to one content area of change to another, (Pettigrew, 1987).

Theoretical and practically useful research on strategic change should involve the continuous interplay among ideas about the context, process, and content of change (Pettigrew, 1990). By using longitudinal case based research strategies, the Pettigrew meta-framework allows for patterns of continuity and change in industries to be observed over time.

Other researchers have successfully used contextualist research. Whipp et al (1989a) have used this framework to empirically examine the link between corporate culture and competitiveness in two mature UK businesses, automobiles and merchant banking. Arthur and Hendry (1990) have used a similar process model to link human resource management and the emergent strategy of small to medium sized business units. Dofour (1990) has used the framework to empirically examine the strategy implementation process through his comparative study of the closure of maternity units across a number of regions of the British Health Service. Leavy (1991) has used this framework to empirically examine the amalgamation episode of the Irish dairy sector between 1958 and 1974. Finally, Hardy (1990) has applied this framework to the empirical examination of retrenchment processes in Canadian universities.

In summary, this approach is based along a number of broad organising principles rather than a tightly specified research method. These principles can be summarised as follows:-

- (i) Multiple levels of analysis are involved in connecting context, process and outcome using economic, political and cultural modes of analysis.
- (ii) An underlying theory of social action is posited

which is neither over-voluntarist or over-determinist in world view.

- (iii) It is based on longitudinal case based research strategies that allow patterns of continuity and change to be observed over time.

(Leavy, 1992, p. 23)

These principles make this framework suitable for investigating formation processes for industry level co-operation. It considers the wider context with which co-operation may form in an industry, through social, political and cultural modes of analysis. Contexts can change over time and are subject to interpretation and this framework allows for the interaction between contexts and outcomes in a non-linear way, (Leavy, 1994).

## 2.6 The Research Methodology.

The preferred research methodology is primarily inductive and case based. This methodology is particularly suited to the examination of processes, and seemed most appropriate in exploring the question of how co-operative strategies form and change in a variety of industries.

Many researchers have used induction to research process issues in strategic management in the recent years, (Browning et al, 1995; Leavy, 1991; Minzberg, 1978, 1979; Pettigrew, 1985). Researchers have found that inductive methodologies have been successful for uncovering the processes that drive strategic change in organisations, (Burglemen, 1983; Kanter, 1983; Pettigrew, 1985; Quinn, 1980).

A case study method best suits the research topic, the contextualist mode of analysis and the broad research objectives. The case study approach has become a "[r]esearch strategy", (Yin, 1981, p. 59), that allows the researcher to compare data across cases and to present the "[c]hain of evidence", (Yin, 1981, p. 63).

Inductive case based research has been criticised as unscientific due to the absence of elegant procedures, (Miles, 1979). More recently, however, it has become a legitimate research tool. Researchers have used this

approach in the competitive strategy literature, (Porter, 1980, 1985, 1987, 1990), the strategic change literature , (Pettigrew, 1985; Leavy, 1992; Whipp et al, 1987) and also the co-operative strategy literature, (Browning et al, 1995; Hamel and Prahalad, 1989).

Inductive research was also the personal preference of the researcher. Personal preferences have influenced others' decisions to adopt case based research. As Henry Minzberg comments, "it is discovery that attracts me to this business..." , (1979, p. 584). Other researchers such as Pettigrew also admit to using this a research strategy out of personal preference.

## 2.7            The Research Process

Case based research can be iterative and untidy, (Glaser and Strauss, 1967; Pettigrew, 1987). It is a craft process and not just a technical task. However the research process for this work can be summarised in a number of sections.

### 2.7.1        Selecting the Cases

Selecting case sites was one of the most demanding episodes during the research process. Industry wide co-operation is ubiquitous and can difficult to detect unlike other forms of co-operation such as partnerships and alliances. Therefore one of the first tasks of the researcher was to identify examples of industry wide co-operation. This was achieved in a number of ways. The Administration Yearbook Diary published annually by the Institute of Public Administration (Dublin) provides a comprehensive directory of trade and industry associations, their functions and also contact names in those organisations. The Annual Report of the Registrar of Friendly Societies published by The Stationery Office (Dublin) contains additional information on trade an industry associations.

However one of the objectives of the research was to identify other possible forms of industry wide co-

operation, ie sources other than industry associations. This was achieved by consulting a wide range of industry and other trade journals, newspaper cuttings, data bases, in an attempt to yield such information. It was through this method that the contract mouldmakers case was identified.

Another very important method of identifying possible case sites was to use an personal business contacts of researcher. This involved building a network of contacts in a variety of businesses in an unplanned, high risk approach. This produced interesting forms of industry co-operation which would have been impossible to identify by other means, the homogenous products producers industry and also the various cases of informal co-operation.

Once possible case sites had been identified it was important to select the most relevant cases to the research objectives. Data was needed to allow for the examination of process. Case sites needed to be accessible and this suggested that they should be located in Ireland. For completeness a starting point and where possible a finishing point also needed to be evident.

### 2.7.2 Gaining and maintaining site access

Case based research requires a high degree of direct access to organisational personnel and archival material. It can be the most intrusive form of data collection requiring a high degree of commitment on the part of organisations. This research had co-operation in industries as its focus. Once initial screening had taken place companies in these industries were approached. Initial approaches were informal and middle management were approached and interviewed to uncover patterns of potential interest.

Following this, more formal approaches were made to top management, usually the managing director. By this time the researcher had some knowledge of the key themes of the research.

However, one notable feature of this research is that it was probably less intrusive than other case based research. This is because multiple organisations were examined in the preparation of case narratives. No one single organisation was examined in great detail. The objective was to gain an understanding of the change processes that happened in the industries as well as the firms under consideration.

The benefits of this were that negotiating access to sites was a more straight forward process and usually, although not always, one interview sufficed. Maintaining access was

not as critical an issue for this research as it would be for other studies that focus on single sites for example.

The first interview was usually the easiest to secure. This may be attributed to a certain level of curiosity on the part of the interviewee. Securing second and subsequent interviews with busy executives was a time-consuming and frustrating process that required diplomacy and often luck. The only advice that this researcher can give on the later point is to impress upon interviewees at the first interview that case based research is an iterative process and that continuing support from the interviewee would be appreciated.

### 2.7.3 Collecting Data

Data collection consisted of an initial phase and a more intensive phase. The initial phase consisted of a pilot study to uncover patterns of potential interest and to identify the variations in industry types most likely to fruitful analysis. The more intensive phase examined those patterns in greater detail.

The principal data collection method was personal interview. The researcher conducted over forty semi-structures personal interviews with middle management and top executives of companies and associations. Some

interviewees asked to see a transcript of possible questions prior to the interview. Other interviewees objected to the use of tape recorders. The interview process was demanding, time consuming and required considerable social skills. One interview, for instance, was held on a factory floor because the researcher detected that the interviewee was becoming bored sitting in an office. This inhibited fruitful discussion. The researcher suggested that the factory floor would be a more relaxed environment within which an interview may be conducted.

Additional data sources included archival material such as press cuttings and internal company reports. In total over 100 additional documents were consulted. The first data sources that were consulted were press cuttings and industry and sectoral reports. Following this personal interviews took place in an attempt to provide further insight into the processes behind events. From this, new lines of enquiry developed, and the whole process resembled detective work, (Mintzberg, 1979).

#### 2.7.4 Data Analysis

Case based research can generate a vast amount of data and it is essential that the researcher knows this data intimately. Data may contain minute details that only

become relevant at some later time and even the most elaborate data organisation techniques may not be sufficient to access data on demand. Research notes, tape recordings etc. needed to be constantly re-examined by the researcher to gain intimacy with the data.

Separate files were opened on each case which contained all the relevant industry data, press cuttings, internal company documents, interview notes and any draft copies of the actual written case study. A journal or notebook for research memoranda was maintained, (Glaser and Strauss, 1967; Mills, 1970) which contained all ideas or suggestions concerning the research and in particular any conclusions that might be further developed. These files were re-read both separately and in conjunction with other files to attempt to build an in depth knowledge of each case.

Internal discussion of this data with my supervisor, colleagues, friends and family provided the so-called "creative leap" from which a complete "in-depth" case study could emerge. Therefore the process of analysis was interactive. Literature review, data collection and analysis were not done in strictly linear sequence. They were interleaved as the project progressed and the researcher interacted with the data.

#### 2.7.5 Confidentiality

An important task of the case based researcher is to preserve the anonymity of data sources when requested to do so, (Pettigrew, 1987). Maintaining the confidentiality of sources was a principal concern in this research. The three principal data sources in the homogenous products producers industry requested that their identity and the identity of the industry remain confidential, for obvious legal reasons. Another key source in the mouldmaking industry also asked to remain anonymous. Disclosing the identity of this source may affect his position within an industry association. The promise of confidentiality was rewarded by unique access to rich data sources.

#### 2.7.6 Case Writing

The data is presented in a number of three major and a number of minor case narratives. Writing case narratives began early in the research. This was done to in an attempt to develop themes. It was only through this process of narrative writing early in the process that central themes eventually began to emerge late in the process.

During the preparation of the narratives care was taken not only to be factually correct, but also to ensure that the

data was presented in a form that would be interesting and easy to read. Initial drafts of the cases were cold, factual and had underdeveloped themes. As additional data were collected, narrative became more embellished and yielded more developed themes.

Through the repetitive process of writing, recording research memoranda, consultation, data collection and the inspirational component or creative leap three major and a number of minor case narratives were completed. The narratives were descriptive in nature in order to allow the reader as much access to the data as possible, unhindered by too much premature interpretation. By presenting the data in major and minor case narratives this research hopes to give adequate attention to both the depth and scope of industry wide co-operation.

## 2.8 Conclusions

The literature on co-operative strategy is extensive. However there are many unresolved issues. Further research is needed to determine if the process to industry wide co-operation is deliberate or emergent. Are there any patterns of formation across different industries, including fragmented industries ? Are there any other formal or even informal types of co-operation ? What effects do social, political and cultural criteria have on formation processes ? What, if any, are the unintended consequences of industry-wide co-operation ?

Future research on these issues should be exploratory in nature. A suitable framework for examining some of these issues is the Pettigrew (1985) contextualist framework. This framework is suitable because it allows for patterns of continuity and change to be observed over time. It uses longitudinal case-based research methodologies. It is flexible as to the research design and it allows for multiple modes of analysis. In chapter three the data is presented in a number of major and minor case narratives which are presented using this contextualist framework.

## CHAPTER THREE

### THE DATA

## Introduction

This chapter is divided into two sections. In the first there are three major case narratives. These are the potato industry, the contract mouldmakers' industry and a homogenous products producers' industry. The case narratives are descriptive. This ensures that the reader has much access to the data as possible, unhindered by too much premature interpretation. The case narratives are organised using the context-process-outcome framework outlined in chapter two. Context examines 'why' co-operation formed in each of the industries. Process examines 'how' co-operation formed. Finally, content considers 'what' was the result or outcome of these processes.

The pilot study, which was discussed in chapter one, illustrated another form of industry-wide co-operation, informal co-operation among individuals. For completeness, although not of primary focus in the final study, a number of minor cases are included in section two in order to provide some examination of this important phenomenon.

### 3.1 The Major Cases.

#### 3.1.1 The Irish Potato Merchants' and Potato Growers' Industries.

##### (i) Industry Background

The potato industry in Ireland has seen a number of changes in the last few years. The industry can be divided into a number of sectors which interact and provide the basis for understanding the reasons for these changes in the industry.

##### Growers

In 1992 the potato industry in Ireland was worth an estimated £ 54 million. It employed approximately 100,000 people both indirectly and directly and 14,000 hectares of land were used in potato production, (An Bord Glas, 1992). In 1970 there were 156,000 producers (Central Statistics Office, 1992). However by 1992 this had decreased to 17,000 producers. Of these, 1756 farmed in excess of two hectares, 700 farmed between two and five hectares and only 400 farmed between five and ten hectares, (An Bord Glas, 1992). These figures are small in comparison to Dutch potato farmers where a total of 15,000 potato farmers 10,200 farmed 10 hectares or more, (Caulfield, 1989).

Traditionally growers sold to their local market. To a certain extent this still occurs. However the dominance of the local market as an outlet is on the decline. The market for potatoes is very unstable. Prices fluctuate considerably from year to year. This is due to a number of reasons. Storage facilities in the industry are poor. This often leads to shortages of supply towards the end of the season, usually the second quarter of the year from April to June. As a result of these shortages prices have historically tended to increase and imports to appear. On the other hand, at harvest time there was typically an oversupply of potatoes onto the market. Growers were unable to keep these for long periods and this forced them to accept lower prices. Poor storage facilities also affected prices by decreasing the quality of potatoes through frost damage, sprouting and also loss of water. Prices are also affected because Irish growers' yields are low by international standards, this increases costs. There are a number of reasons for this bad seed, poor storage, disease, poor soil and handling damage, (Glennon, 1993).

Another reason for the unstable nature of the market was that growers could be enticed into the industry by the lure of the previous years' prices, if high. Such high prices however could have been caused by a number of factors, such as poor weather which diminishes the yield, and results in under-supply. Therefore the nature of the market was

speculative and growers possessed little or no market information.

A large number of suppliers in a fragmented industry with little or no market power, ensured buyers had the balance of power in the business. There was traditionally little evidence of producer groups. These were only officially possible after 1990 following a change in EU regulation (Caulfield, 1989). However, up to ten loosely formed producers groups existed in various growing areas of Ireland the largest being the North Leinster Growers Group, (Caulfield, 1989). These groups only came to life in times of crisis ie poor marketing returns. They varied in nature from being pressure groups to developing common marketing, storage, packaging and grading activities. By 1992 only four officially recognised producer groups existed in the industry representing 56 producers and 1,400 hectares of land.

This situation is in stark contrast to the situation that existed in Holland, for instance, where producers are highly organised. In Holland 80% of production is accounted for by 10,200 growers of ten hectares or more, (Caulfield, 1989). The average Dutch farmer is a member of three or four co-operatives which individually deal with supply of inputs, production credit, marketing etc. These co-operative are themselves nationally organised at the sectoral and general levels.

In Ireland, co-operation was non-existent at national level although at local level growers informally cooperated at harvest times by sharing machinery, for instance. The market was easy to enter and exit and the prices for produce were dictated by dominant buyers. They took advantage of the fluctuations in supply that the growers experienced and their lack of market information.

### Merchants

Merchants have always existed to a certain extent in the business. Traditionally, merchants bought produce from the growers and sold it on to some of the larger customers supermarkets for instance. Merchants did not add value, they neither washed or pre-packed potatoes and they were regarded as 'handlers'.

Traditionally there were less merchants than growers. Some estimates suggested that there were approximately 25 in the country, (Caulfield, 1989). The merchants segment of the industry displayed similar chaos to that of the growers. It was price sensitive and unorganised to any great extent. Some merchants were members of a trade association, the Potato Federation. However, they used their membership to spread false information about the market to other competitors.

Like the growers' segment of the market, the merchants' segment was traditionally easy to enter and exit. This presented some problems for the industry. In 1989 it was estimated that nearly 20% of the output of the industry (80,000 tonnes) was handled by truckers, lorry-men or semi-merchants. They operated from lorries buying and selling potatoes, (Caulfield, 1989). They moved freely within the system loading their lorries as cheaply as possible, after pitting grower against grower. They had no overheads, stores, washing facilities etc. yet their prices for potatoes often became the basis for prices on the wholesale market.

Most merchants did not possess long term storage facilities. By 1989 an estimated 11 of the 25 merchants who supplied the Dublin market had storage facilities, (Caulfield, 1989). The total capacity of these facilities was 4,200 tonnes representing approximately two weeks supply. This also affected the supply, quality and price instability problems in the industry.

### The Market

The quality of the Irish potato was traditionally regarded as being poor. During the months of April and May 1983 An Foras Talúnas (The Agricultural Research Institute) conducted a potato marketing survey. In the course of the

interviews over 900 people were asked if they were satisfied with their purchases of Irish potatoes. Fifty percent claimed that they were satisfied, 37 % were not satisfied and 13 % had mixed views. Therefore 50 % of Irish people were either not satisfied, or did not know if they liked the quality of the Irish potato. The potato had a dirty image compared with the other products according to Mr. Liam Glennon of Sam Dennigan and company (potato merchants). The potato occupied a dirty corner of the Supermarket away from all the other fruit and vegetables.

There have been a number of changes in the tastes of consumers in the last twenty years. This has lead to the introduction of a number of different basic foods onto the Irish market. There has been a growth in the popularity of commodities such as pasta, rice and pizzas. In 1991 for instance, £ 12.1 million was spent on rice and pasta (not including sauces) and a further £ 10 million was spent on pizzas. The average growth rate per capita for consumption of pasta is 9%. By contrast, the consumption of the potato has remained static, (National Food Centre, 1992). Ten years ago the sales levels of the above was negligible. However, the potato is now in the food business and not just the potato business.

Another major development has been the growing dominance of supermarket chains in the country in recent years. It is estimated that supermarkets account for over 50 % of all of

the sales of potatoes in Ireland every year (Checkout, 1993). The dominance of the supermarkets has caused further erosion of market power from the growers. Supermarkets prefer to deal with larger suppliers, such as merchants. Another important feature of the growth of the supermarkets is that there has been a growing emphasis on the supply of high quality potatoes.

Finally, in the last few years there has been an increased threat of new entrants in to the Irish market, in the form of foreign imports. Regulatory change in 1979 made importing potatoes possible. The first imported potatoes appeared in shops in 1982. Since then foreign imports have a major feature of the Irish market. The majority of imports occur during the second quarter of the year from April to June. This situation is exacerbated by limited storage capacity in the industry and the relatively poor condition of the Irish potato.

(ii) How did co-operation arise in the industry ?

#### Industry Change since 1977.

In 1977 the Irish government introduced a national quality standard for ware potatoes under the Food Standards (Potatoes) Regulations. This standard made it illegal for anyone to sell potatoes which did not meet certain

criteria. Under these regulations it became illegal to sell potatoes with more than 5 % damage, 2 % rots, 3 % sizing defects and 3 % mixed varieties. All prepacked should be graded 40 - 60 mm or 60 - 80 mm. These standards were introduced in preparation for the lifting of trade barriers which would allow foreign imports to enter Ireland for the first time.

As has already been noted, in 1979 trade barriers were lifted for potatoes and other agricultural produce as a consequence of Ireland joining the EEC (EU). The lifting of trade barriers had little effect initially. In 1979 2,960 tonnes of potatoes worth £ 441,000 were imported. By 1980 the figure had increased to 19,464 tonnes worth £ 2.7 million, (Central Statistics Office, 1983, p. 13.1). It was not until 1982 that the imports began to have a significant impact on the Irish market. In 1982 Irish producers experienced a bad summer. Subsequently imports of potatoes, mainly from Holland, increased to 84,000 tonnes, worth £ 13.3 million.

By importing potatoes, merchants and supermarkets were guaranteed a more regular supply. However imported potatoes tasted different from the traditional Irish potato. Dutch imports were not as dry as their Irish competitors. They had a higher water content. The An Foras Talunais survey in 1983 suggested that consumers had little loyalty to the Irish potato, and they rapidly

changed to the Dutch imports.

#### Initial Reaction: 1983-1987

Initial reaction to these imports was negative. Growers demanded a boycott of the imports. Some even resorted to high-jacking imported potatoes and pouring diesel over them to render them useless for sale. The mid 1980s saw many events such as these particularly between 1983 and 1987. During this period other imported potatoes began to appear in particular Italian, Spanish, Cypriot and Greek. These were also of a more consistent quality all the year round. The Irish consumer for the first time in centuries did not have to wait for the "new potato".

The other key feature of the imports were that they were cleaner. They were also packaged in smaller more convenient bags. Irish potatoes were still being sold unwashed and in large 25 kilo. bags. Therefore, supermarkets preferred to buy imports. The year round superior quality, and the convenient packaging were decisive factors.

During this period producers began to put pressure on the Irish Farmers Association, in particular the National Potato Committee. The IFA responded by putting political pressure on the government to introduce a number of measures to alleviate the problem for growers. Initial

suggestions included a proposal to introduce quotas in 1987. This was objected to on the basis that it would be too difficult to administer and also it would be in contravention of EU regulations.

The other main suggestions were to provide grant aid to the industry to build of storage facilities. This would help to stabilise supply. At this time it was estimated that of the twenty five large merchants in the Dublin area, only eleven had adequate storage facilities totalling 4,200 tonnes. This represented two weeks supply. In the country as a whole there was an estimated 32,000 tonnes of long term storage facilities representing only 7% of national output, (Caulfield, 1989).

#### An Bord Glas and the National Potato Coordinator

The Irish Government responded by creating An Bord Glas (ABG) in October 1987 as a non-statutory, semi-state body. It did not receive official sanction for the recruitment of staff, acquiring of premises and the establishment of the statutory board until 1990. During the 1987-1990 period an interim board was put into place. The objectives of the interim Bord were vague at the beginning. It was to be a horticultural development board. Its first task was to initiate two development plans for the industry. These were aimed at a combined market share recovery, an export

expansion of £ 60 million and the creation of 1800 full time jobs and 1,500 part time jobs, (An Bord Glas, 1991).

Between 1987 and 1989, during the drafting of the development plans for ABG, executives from ABG and the IFA began to discuss the establishment of a National potato Coordinator (NPC). The role of the NPC would be to provide greater transparency in the market. This could be achieved by monitoring the levels of supply and demand to prevent oversupply, for example. In 1989 the IFA advertised for applicants for this post in the national press. Forty two applications were received and from these Mr. Jim Thornton was appointed in May 1990.

Thornton was an inspector for the department of agriculture for twenty-five years. He was chosen for his in-depth knowledge of the industry and his direct, tough approach to management. The IFA and ABG believed that such an approach would be necessary to organise the potato growers. His salary of £ 20,000 is funded by the IFA and ABG and a voluntary contribution from the growers of £ 3 each per annum. The initial contract was for three years. This has been extended to 1999.

The appointment of Thornton was significant, because it created a new awareness for the potato industry in Ireland. One of the most crucial aspects of the business that needed attention was the issue of poor storage. This had been

highlighted in the ABG development plans and also by Thornton. The industry needed an estimated 80,000 tonnes of extra long term storage space according to these estimates.

### Grant Aid

By the mid 1980s the EU Commission recognised the need for additional storage facilities. Grant assistance first became available through the FEOGA Processing and Marketing Scheme in 1986. FEOGA funds were designed for non-disadvantaged areas and provided 25% grants for long term storage facilities. However by 1988 there were only two storage projects awaiting approval by the commission and these were for larger merchants. Smaller growers were unable to afford the remaining 75% capital costs and there was a general lack of awareness of these grants.

In early 1991 the IFA and ABG announced the Operational Programme for Rural Development scheme (OPRD). This was designed to provide 50% grant assistance for new stores and the improvement of existing stores. The scheme was a huge success. It was 60% over-subscribed by the growers and in 1991 alone £ 2.5 million was allocated. Merchants on the other hand continued to avail of the FEOGA scheme which was for larger projects, those in excess of £ 80,000. Total investment under the schemes has been £ 3.3 million for the

OPRD scheme and £ 5.1 million for the FEOGA scheme. These have created a total of 50,000 tonnes of storage space in the industry. Further efforts to improve the quality of the potato have resulted in the development of new brands of potatoes. The Rooster and Pentland Dell are but two examples.

### The Merchants

The truckers and lorry-men entered other segments of the horticultural market. They were unable to compete in a market which was becoming more consumer and quality focused. They also did not qualify for the grant schemes. One merchant admitted that whilst these developments were desirable they were unintended. As a result, potato federation meetings have begun to improve. This was attributed to better relations between the remaining competitors.

(iii) What have these changes meant for the industry ?

#### Growers

The growers are more organised than before. This has resulted in a shift in market power in the industry. Through the potato coordinator, growers are now better able to capitalise on their storage facilities. They now regulate supply to the market all the year around. This improves prices.

Regular meetings, chaired by Thornton, occur between the growers at local level. These meetings agree on a coordinated approach, so that a specific amount of potatoes are released from storage and placed on the market, thus ensuring prices are maintained. This is a significant example of co-operation.

Co-operation is beginning to spread to other aspects of the industry. For instance, some of the merchants are now willing to discuss quality matters with Thornton. However, some others still view him and his office with suspicion. It is suggested that one of the reasons for this is that some are distrustful of the pricing policy.

Despite this, Thornton is optimistic for the future of the potato industry in Ireland. "It is a nicer place to work now that there are some rules of the game. Previously it

was chaotic...full of cowboys", he noted. Relations between growers and some merchants have become stronger. He encourages more open days between growers, merchants, supermarkets, Teagasc and A.B.G. to discuss strategies, developments, markets new products etc.

### Merchants

Members of the Potato Federation are beginning to discuss issues such as seed, quality standards, growers and prices. In the past, meetings were used to give false market signals. They now are used to exchange bona fide market information. However, they are still relatively poorly attended.

There are also a number of other proposals for co-operation in the industry. In July 1995 Mr. Maurice Keady of A.B.T. in conjunction with the Irish Trade Board proposed a marketing plan for exporting Irish potatoes to the UK. The marketing strategy was targeted at a niche of the UK market. There are those who would be willing to pay for a premium quality Irish potato. These are the first-generation Irish, who live and work in the UK. This joint venture may involve the two largest merchants in the industry Mc Nulty Dolans (owned by Fyffes PLC) and Sam Dennigan and Co. However both are sceptical about the viability of exporting potatoes

There is also a proposal for a marketing alliance between A.B.G. the growers and the merchants, to promote the consumption of the potato in the domestic market. The aim would be to improve the image of the potato and to inform the public of the advances in quality of the potato in recent years. The campaign would be modelled on the National Dairy Council's promotional campaigns for milk products. This appears to be receiving support in the industry

### The Market

Overall, the industry in general and the quality of the potato have improved. However imports are still high. In 1992 75,000 tonnes of potatoes worth £ 11 million were imported into Ireland. Of these approximately 21,000 tonnes were from the Netherlands (Central Statistics Office, 1992, p. 13.4). By June 1994 60,000 tonnes of potatoes were imported into Ireland and of these 24,000 tonnes were from the Netherlands (Central Statistics Office, 1994, p. 13.4). Despite these figures, the industry proposes as a strategic aim that Ireland should produce sufficient potatoes to satisfy the domestic market before the end of the decade.

### 3.1.2 Irish Contract Mouldmakers' Industry

#### (i) Industry Background

##### Industry size and growth levels

Contract mouldmaking companies engineer high precision casts, usually from metal, into which molten plastic, metal or glass are poured. This produces items which can be used in other production processes. Examples of such items are plastic syringes, toy components, plastic car components such as wing mirrors, and computer components such as plastic external casings. Therefore, contract mouldmakers do not produce the components of the final products themselves. They produce the equipment from which these products can be produced.

Although no official figures for the Irish Contract Mouldmakers business exists industry sources estimate that is worth approximately £ 20 million. The industry comprises of 16 small to medium sized companies and it employs approximately 450 people.

Growth levels in the industry in recent years are estimated at 10 % per annum. This is largely attributable to growth in the domestic market. However growth levels in the industry were traditionally low. For example, in the Programme for National Recovery (Dept. of the Taoiseach,

1987) forecasted that the industry would grow from £ 5 million to £ 20 million between 1987 and 1992. However, by 1990 estimates suggested that these growth figures would not be achieved.

Traditionally, Irish contract mouldmakers did not export many of their products. Many companies exclusively supplied the domestic market. This is partly due to the high costs associated with developing foreign markets. In addition, there was intense foreign competition in the domestic market. Many large customers sourced their mouldmaking equipment abroad. For example, in 1992 An Bord Trachtala (ABT) found sixteen large buyers in Ireland that were importing equipment.

Margins in the business were also typically low. This is attributable to high costs and the intense competition in the business. For example, some equipment, such as CNC milling machines, can cost in excess of £ 250,000. Mouldmakers themselves are skilled craft workers. Wage and training costs in the industry are high as a consequence.

#### Sliogo RTC and Industry linkages

Firms in the contract mouldmaking business have a recognised technical excellence. Many companies have ISO 9000 quality certification and the most modern equipment

available. There are a number of reasons for this. The industry has been the focus of Government economic policy since the 1980s. This is because it has a low volume, high value output. It is labour intensive, especially for skilled labour, and it has growth potential, through exporting. During the early 1990s firms in the industry received considerable grant assistance through the IDA.

Another factor that has contributed to the development of technical excellence in the business has been the role of Sligo RTC and one individual in particular, Maurice Doran. Doran has been a leading figure in many of the developments in the industry over the last number of years. As head of engineering, then as head of development, and finally as registrar at Sligo RTC he has pioneered and more importantly driven a number of innovative linkages between the RTC and the industry.

Since the early 1970s Sligo RTC has become a centre for excellence for the mouldmaking business in Ireland. In 1970 the RTC began block release courses for mouldmaking apprentices. This followed consultation with the Department of education and one of the most established companies in the business, Tubbercurry Tool and Gauge. In 1983 Sligo RTC began the National Diploma in Tool Design and later a Tool Design Diploma which is a two year course with a heavy emphasis on work placement. The RTC has also created the National Toolmaking Centre (NTC), CREDCO - the

commercial consultancy arm of the RTC, and TIRAC - a research institute which is also part of the operations of the RTC.

All of these developments have been significantly grant aided by state bodies. The NTC for instance received grant assistance totalling £ 1.66 million for the purchase of capital equipment and the building of an additional facility.

Finally, the emphasis in technical excellence can also be attributed to the founders of many of the companies in the business. The founders of these companies have a strong technical background and many of these originate from the same company, Tubbercurry Tool and Gauge.

#### Buyer-Supplier linkages

Another important feature of the industry are the buyer-supplier linkages. Contract mouldmaking firms and their customers traditionally have long-term relationships. There are a number of reasons for this. The mouldmaking equipment itself is durable, the moulds themselves commonly last 20 years. These moulds require servicing and reworking and the mouldmaking companies usually perform this.

Buying mouldmaking equipment can be risky. If the equipment does not perform to specification it can have serious adverse effects of the entire production system. For example, it can affect lead times and release dates for new products. Finally, margins in the business were traditionally low. Suppliers did not contribute for example to the funding for training new apprentices or the acquisition of new capital equipment.

#### Linkages between mouldmakers

Traditionally there was no or little contact or co-operation between the mouldmaking companies themselves. According to Mr. Andrew Cullen, Managing director of Sligo based Stet Engineering, "...[t]he industry was all very secretive. Nobody really had any contact, even with companies that were nearby, and it was a case of occasionally saying hello to somebody but only if you met them on the street", (Advance Manufacturing Technology, 1993, p. 19).

#### (ii) How did co-operation form ?

#### Doran and Sligo RTC

In the early 1980s the need for greater coordination in the

industry was evident. At this time an organisation called The Toolmaking Association was formed to represent toolmakers in the industry. This association was formed by Mr. Reg Mc Cabe of the Confederation of Irish Industry (CII), which is now part of the Irish Business and Employers Confederation (IBEC). However, the Toolmaking Association did not endure. The reasons for this appear to be that members of the association lacked focus. Membership was diverse and covered a broad spectrum of the industry. Therefore, the member companies did not possess a common purpose. This ultimately contributed to its demise.

Despite this, there was still a recognition in the industry for the need for some degree of coordination between the members. This recognition did not arise from reports on the benefits of co-operation in the business. It was apparent to anyone with close contact with the industry. Maurice Doran, (already referred to), while Head of Engineering at Sligo RTC during the mid 1980s, was keenly aware of the possible benefits of co-operation to the industry as a whole.

Although there were strong linkages between Sligo RTC and the industry, these linkages did not always receive the necessary support from all the government agencies. In particular, the Vocational Educational Committees, or VECs who manage the RTCs. Sligo VEC during the 1980s had an

erratic attitude to the development of these linkages between the RTC and the industry. Sometimes these were supported, and sometimes not. This stems from differences in opinion about the role of the RTC. The RTC was primarily an educational institution. But the strong commercial training and consultancy links with industry were perceived by some as increasingly important.

### Political Impetus

In 1987, at Kilmainham, Dublin, the then minister for enterprise Mrs. Mary O' Rourke made a key-note speech on the importance of industry linkages to the RTC sector. In particular, she advocated the establishment of Industrial Liaison Officers (ILOs) within RTCs, to develop this role. This was the important top level endorsement that Sligo RTC needed to further develop its role in the toolmaking industry. However the RTC and Doran did not adopt the ILO concept because they regarded this as being 'project oriented'. It was believed at the time that a more structured 'long term' approach was needed. Therefore the position of Head of Development was created and Doran was appointed. Doran believed that there should also be linkages between the companies themselves because of the basic nature or structure of the industry, ie high capital costs, small firms and the intense competition and rivalry.

During the period 1987 to 1990 there were a number of

workshops held between competitors in the industry and Sligo RTC. The workshops were used to discuss industry developments. These included technological advances. They were also used to demonstrate certain equipment at the RTC.

In June 1990, for example, the IDA sponsored and organised a workshop for toolmakers in Sligo RTC. Guest speakers from Portugal and the UK were invited. The workshop was organised by Mr. Peter Joyce of the IDA. Joyce told the workshop about an IDA study on the toolmaking business in Ireland and Europe. This study showed that the growth predicted in the business through import substitution and exports did not occur, despite the obvious increase in the technical capabilities of the companies. The problem appeared to be marketing, rather than shortcomings in technology. Export and niche markets needed to be developed.

Joyce proposed a possible solution to this problem. Marketing Irish Toolmakers abroad was problematic due to the cost of establishing a reputation, a costly and time consuming exercise. But he suggested the costs of marketing could be shared among the mouldmakers. He proposed joint trading, joint marketing and shared equipment projects in the business to overcome many of the problems faced by the mouldmakers. He cited the example of a Japanese company, Munekata, which provided customers with about 300 moulds per year. However, only one hundred of

these were produced 'in-house'. Consortia of mouldmakers were also common in Portugal. Portugal is the world leader in mouldmaking.

This development also reflected the change that had occurred in prevailing government policy at the time. Several reports into industrial policy advocated the use of non-grant based assistance, and grants were increasingly been seen as a blunt tool of industrial policy, (Telesis, 1982; White Paper on Industrial Policy, 1986).

#### The Mouldmaking Association of Ireland

Following the IDA workshop, Doran organised a meeting between Andrew Cullen of Stet Engineering Ltd., Phelim Mc Neile of Avenue Engineering Ltd., John O' Donnell of Tool and Gauge Engineering Ltd. and Martin Keaveney of Tool and Die Engineering Ltd. This was called to discuss the formation of an association between the mouldmakers. All of these individuals agreed that this proposal would receive support in the industry. However, it was also suggested that the organisation should only represent contract mouldmaking companies (approx. 16). The remaining 12 were approached shortly after this. A meeting was held in Sligo which was chaired by Doran and representatives from all 16 companies attended. At this meeting the proposal to form an association was discussed. Members

were concerned initially with the name, policy and functions of the association. All agreed that the organisation should have a clear membership criteria.

In October 1990 the Mouldmakers Association of Ireland (MAI) was formed. It comprised fifteen members. Doran was elected Chairman. One company, Lucan Moulds, declined to join. The role of the association was to develop policies and to generate additional work for the members of the industry.

At this time there were a number of issues facing the industry: training, TIRAC assistance and the expansion of the market. The latter issue received the initial attention of the members of the organisation. They were concerned to rectify the poor growth levels in the business. The MAI in association with ABT produced a sales brochure. It featured the member companies and it was designed to show prospective customers that range of skills that the members of the MAI possessed. The costs of the brochure, which was grant aided, were shared among the members.

Twelve thousand of these were produced. For some time they lay in Doran's office in the Business Innovation Centre in Sligo. Gradually, however, the stock was depleted. ABT and the IDA frequently asked for these brochures to sent to customers. Doran was asked on one occasion to send 500 to

the ABT Milan office. The IDA would show the brochures to buyers here, and then would take these customers to the companies advertised in the brochure.

Therefore, as time progressed marketing become the key issue for the members of the MAI. This posed several questions for Doran. What was the role of the MAI ? What was the policy of the MAI ?, what was its structure ? By what process could it administer a large order ?. Not all of the mouldmakers were equivalent. Each had different competencies, and if a large order was received who would do what ?

#### The Role of Experts

The MAI approached the IDA for assistance. With an IDA management development grant and a cash injection from the members, a consultant was employed to investigate this issue further. The consultant appointed was Jim Meehan and Associates of Sligo. This firm had experience of mouldmaking companies, multinational corporations, US competitors and consortia. Meehan prepared a report on the companies in the MAI. The study examined issues such as technical capabilities, management and marketing.

The findings of the report recommended the establishment of a separate marketing company. There were two main reasons

for this. First a legal structure was needed for exporting. Second the MAI had no central staff. Doran was in a full time job as Head of Development at Sligo RTC. Each of the members had their own businesses.

Following this, the MAI was approached by two US businessmen. They wanted to act as exclusive agents for the MAI in the US. The proposal was examined in detail by the MAI, Meehan and ABT and on analysis the proposal was unattractive. Under the agreement the MAI would ultimately pay most of the costs. However, it would have little or no control over the marketing operations. The proposal was eventually turned down. However, it did validate Meehan's recommendations that the members of the MAI should own and control their own marketing company.

Despite this, there were a number of members of the MAI who questioned the need for a separate marketing organisation. Some claimed that they were already export oriented. Companies such as Custom Components, located in Dublin, argued that this would duplicate their activities. Other companies in the MAI argued that an export drive would be at best short term, and that the weakness of the industry would be short lived. In the longer term they believed that Irish companies could not compete against their foreign counterparts in Portugal, for instance. They would be better off producing for the domestic market. In total there were five dissenters.

### The Mouldmaking Corporation

In January 1993 the Irish Mouldmaking Corporation was founded by eight members of the MAI. Each of these paid £ 8,000 in share capital and the organisation was grant aided by the Irish Trade Bord and Forbairt. Two members eventually decided not to subscribe due to the costs of subscription.

The MCI needed to be staffed and it was decided to recruit a general manager. This post was advertised, and Tony Lang was chosen as general manager. Lang was a graduate of the Sligo RTC National Diploma in Tool Design. He had his own business in Shannon which imported and exported tools from the former Soviet Union. This made him an ideal representative for the MCI. Mr. Bob King of the MAI finally offered the position to Lang.

At first Lang did not accept the position. As he was familiar with the secretive and suspicious nature of the industry, he was initially sceptical of the overtures to cooperate. The success of the venture would depend on industry support, this would need to be guaranteed. This guarantee came in the form of a clause in his contract. It guaranteed that the MCI would quote as a group, Lang would make the final decision as to what companies would quote

for, and be awarded with, any contracts that he secures for the MCI. This agreement was reached through negotiations between himself and the members during 1993.

Lang was appointed general manager of the MCI in late 1993, almost a year after it had been incorporated. His job description was manage the company's objectives. These would be determined by Lang and the other members. One of his first tasks was to become familiar with each of the member company's operations and products. This was done by spending a number of days at each member's production facility. He became familiar with the technical and managerial capabilities of each company.

The MCI holds more regular meetings than its counterpart the MAI. Meetings are held every six weeks and they involve all of the members of the MCI. These meetings had a number of functions, but primarily they were designed as a forum for sharing information and ideas for identifying and developing markets. The meetings are well attended and are chaired by Lang. Member companies are responsible for "doing the ground work" for the organisation and then reporting their findings to other members.

It is Lang's strategy to further develop the MCI into a project management organisation as he believes that this is what the market is demanding in the longer term. Such an organisation would manage the entire sub-assembly

requirements for other larger organisations. A project management company, for instance, could be an alliance of mouldmakers, mould companies, assemblers etc. designed to give the customer a 'complete component'. This has begun to happen in the market place with organisations such as Fullertons in Scotland and Orbitech in Ireland. It is Lang's hope that the MCI will compete with companies in the future. However he admits that he is relying on the continuing support of the members.

(iii) What have these changes meant for the Industry ?

The MCI has had a number of successes since its formation. The MCI provides members with a brand image and number of orders have been secured from the US for the member companies. MCI management is optimistic that a number of substantial orders will be placed by some of the larger US manufacturers, for example, OEM producers and toy companies. One toy company currently negotiating with the MCI, Mattel, purchases \$ 1 million of mouldmaking equipment per month. This is large considering the turnover of the Irish mouldmaking market is £ 20 million annually. The member companies have adapted to doing business with US customers. For example they now prepare a quotation within four days whereas previously two weeks would have been the industry norm. The MCI is still evolving and developing legal structures to cope with exporting.

Despite the initial successes of the MCI management still has a number of sceptics. One managing director admitted that he was sceptical as to the long term success of the MCI although he had received assurances that larger orders will eventually be received. He believed that there was no real justification for such an organisation as exporting mouldmaking equipment had proven to be too difficult and expensive. Ironically, the IDA was already successfully marketing the industry to foreign multinationals and the only reason for membership was "in case" a large order came from the US market. This company deliberately tendered uncompetitive quotes for small US orders, and he suspected others were doing the same. It is even rumoured in the business that one un-named company has already gone out of business as a result of costly US orders. The reasons for this are that the company's costs reputedly increased due to the need to repeatedly repair installed toolmaking equipment as a result of sabotage by US competitors !

There appears to other reasons for companies joining the MCI. Many companies have become members because membership of the MCI has a certain status along with for instance ISO 9000 quality certification.

However, the main change in the business is that, in general, relations between the competitors have improved. For example, three members of the MCI who supply the same customer in Belfast with the same moulds even travel

together when meeting the customer in Belfast. If the customer is visiting one company's plant in Sligo the other two competitors usually are invited to meet the customer at the competitor's plant. Competitors now share production to utilise capacity. Such levels of co-operation were previously unheard of in the business prior to the formation of the MAI and the MCI.

It is not uncommon for competitors to contact one another if they suspect that are supplying the same customer with similar equipment. For example, if one company receives an enquiry from a customer it is not uncommon for that company to contact some of its competitors. These are usually members of the MCI or the MAI. Contact is made to investigate if anyone else has received a similar enquiry and what price they intend to quote at. If the supplier has contacted more than one company, which can occur if the order is large, mouldmakers take this opportunity to agree to increase prices.

### 3.1.3 A Homogenous Products Producers' Industry.<sup>1</sup>

#### (i) Industry Background

#### Industry Structure

This manufacturing industry sub-supplies a larger indigenous Irish industry with essential components for the completion of certain finished products. It also supplies a smaller but growing Do It Yourself (DIY) market. The industry it sub supplies is a major employer. It directly and indirectly employs approximately 115,000 people. It is valued at 13 % of Gross National Product (GNP). It is strongly linked to the economic cycle. However, it does not export.

The industry provides small pound value items to its main customer. The total cost of these is only a small proportion of the total cost of the finished product. These products come in a wide range of shapes and sizes to fulfil a variety of purposes. Strength, reliability and aesthetics are important. Despite the diversity of the product range the products are basically derived from the same process. The process is a simple one with only three or four raw materials. The manufacturing technique is simple and it requires only minimal manpower, mainly

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<sup>1</sup> The identity of the industry is concealed at the request of industry sources.

supervisory.

The raw materials are expensive and until recently were sourced in Ireland. Foreign imports are becoming a feature of the industry. This is because production of the primary raw material cannot meet demand, which in turn is putting pressure on prices. This production technique is similar across all the firms in the business. All producers therefore operate from a similar cost base except those who are located outside the main market. These experience higher transport costs.

Transport costs for the finished product are generally high this further reduces margins and fragments the industry, although it provides some protection from imports. Some large farmers have the capability to produce competing products at a marginally lower cost due to excess capacity. These farmers could periodically enter the market and provide lower cost lower quality products to buyers. This could happen during times of peak demand in the industry which traditionally would be in the summer months. In recent years this has not been a prominent feature of the industry.

The Dublin market, the largest in Ireland for this product, has approximately ten to twelve main competitors. Competition in the Dublin market is intense. This is because the products are undifferentiated with regards to

quality. This was traditionally poor and inconsistent, according to the chairman of the trade association which represents the industry. Buyers have low switching costs and prices were traditionally the only competitive tool. Any gains to market share through aggressive pricing were negated by subsequent increases in prices to recover losses.

Despite the highly competitive nature of the business, there was a history or tradition of co-operation. This came in the form of sharing information on new production processes. For example a Dublin based manufacturer and a Wicklow based manufacturer shared information concerning a new item of plant equipment that the Wicklow based manufacturer had purchased. The Dublin company mistrusted the sales brochures for the item, which costs £ 80,000, and wanted more reliable information. Based on his competitors advice the Dublin company negotiated a better deal with the distributor for the item. To date, the equipment has performed to the buyer's expectations.

The industry is currently experiencing growth levels annually of ten percent. This is because its main market is experiencing similar growth levels. Industry analysts believe that these growth patterns have not been seen in the industry for twenty years or more and are set to continue until 1997. After 1997 a decline is forecasted and average or no increases in growth are expected as a

result. This decline is expected as a consequence of a slow down in the overall state of the economy.

There has also been improvements in the quality of the products being sold. Ten years ago ten percent of goods produced would have been below standard, either being damaged during production or transport. This reflected inconsistencies in the production process. The product cannot be recycled and the only recourse is to sell at a loss as 'seconds'. This represented a major cost to the business. Vigorous quality checks were performed by buyers which also added cost to the producers.

However, buyers are demanding higher quality products. This is in response to strict new EU guidelines. Products for the first time need to meet certain quality criteria as to their size and strength. In the DIY market, customers are now demanding that products have improved aesthetic qualities and that they are free from even minor defects.

Changes in technology have facilitated these new demands. The production process is becoming more automated with the inputs being computer controlled to assure that the finished product met these new demands. Automation means that efficiency has improved and that costs are reduced through labour savings, more efficient use of raw materials, less defects and fewer returned goods. Nowadays only two percent of products get damaged. Many of the

larger customers no longer see the need to carry out quality inspections of delivered products, this also facilitates efficiency. The cost of raw materials has also decreased in recent years as cheaper raw materials are now being sourced from abroad, for example, from Turkey. Shipping costs have also been reduced dramatically in recent years from twenty dollars per ton to ten dollars per ton. These quality advancements have allowed the producers to become more differentiated with respect to the range of products and the level of service they offer.

Co-operation has been a major feature of the operations of the business for many years both formally and informally. The industry is represented by its own trade association. The association has existed for many years and it describes itself as being primarily a lobby organisation that attempts to influence government policy decisions concerning the industry, particularly with respect to EU legislation affecting the industry. The association also collects and disseminates statistical information concerning trends and developments.

The industry also displays evidence of other more informal forms of co-operation between the manufacturers. This co-operation comes in the form of a periodic change in the competitive structure of the business where tactics such as destructive pricing are temporarily suspended by the competitors. Each firm in the industry temporarily

observes the 'rules of the game' which are understood by all of the competitors. This can come in the form of firms observing rivals' relationships with their customers and their market share.

During this period the primary competitive tools tend to concentrate on the quality of each firm's respective product range and the quality of the service that each company can offer its suppliers. Examples include: speed and reliability of delivery to name but two. During this period the industry enjoys greater stability which is translated into improved margins for the individual companies.

(ii) How does co-operation form in the industry ?

This process commences because some firms (approx. three to four) outside the Dublin area have relatively higher transport costs than their competitors. These receive proportionally lower returns on their sales. They are well known to each other and they are members of the same association. Most of the companies in the business are be family owned and therefore, each of the companies have some degree of social contact. As a result of these social ties executives begin to discuss among themselves the desirability of improving margins by informally co-operating.

To what extent these manufacturers either specifically agree or alternatively reach an 'understanding' to de-escalate destructive pricing policies and to observe certain rules of the game is unclear. This is due to the absence of a formal contract or agreement to that effect. Nonetheless, the accord is sufficient for them to contact the other competitors in the Dublin market with a view to discussing the matter further.

Initial contact can be telephone and usually the receiver is aware of the purpose of the call ever before the mention of a meeting is made. Agreeing to meet requires little negotiation other than over times and places.

The next phase of the process is to have a face to face meeting of all the competitors with a view to discussing a possible de-escalation of destructive pricing policies. This is the only topic of conversation, output, costs, margins etc. are too sensitive to discuss. Usually one meeting suffices and the discussions are described as cordial but professional. An informal consensus is reached between the competitors in the form of a 'price understanding'. Competitors agree not tender contracts at prices below those of other competitors and to respect others' market share.

Overall the process is seen as a relatively simple one. It is not time consuming and agreement can be reached in days.

Customers do not react due to fears that they might not get delivery from other sources, and the items are of small value anyway.

This agreement typically holds for three to four months, during which the firms can earn above average returns on their sales. The industry usually experiences a downturn towards the end of the year as demand in its main market falls. The same firms that are responsible for brokering the agreement are usually responsible for breaking it. As market demand decreases they begin to lower their prices in a bid to gain market share to generate cash to offset the decrease in turnover.

The agreement is not terminated by consensus. It is terminated by companies simply dropping their prices. This sends a clear signal to the other competitors that the agreement has been terminated. Once one competitor breaks the consensus others soon follow and the agreement collapses in a matter of days.

This price understanding is not negotiated every year. It may occur every two or three years when the same firms once more experience marginally higher transport costs. For example in 1994 and 1995 there was no agreement. This is because there was no need to improve margins through a de-escalation of aggressive pricing policies because of the growth levels in the business. As the managing director of

a large Dublin producer noted, "...[t]here is enough business to go around...there is often no need to out-bid rivals". In 1994 this competitor independently raised prices by five to ten percent across its entire product range. The company's turnover in August 1995 alone was in excess of the turnover for all of 1982.

(ii) What have these changes meant for the industry ?

These changes result in a resumption of price competition. There is no alteration to the basic structure of the industry as a result of co-operation. Only this form of co-operation has been affected however and other forms of co-operation continue to exist. Some companies still informally share information concerning technical developments in the industry, for example new production processes. This has been a feature of the industry for many years.

### 3.2            The 'Minor' Cases

#### Introduction

During the early stages of this research a pilot study was conducted to identify potential patterns of interest in industry wide co-operation. This indicated another important form of industry-wide co-operation which was often informal. This type of co-operation is usually, although not always, not officially sanctioned or acknowledged. However, it can be functional and unofficially tolerated, if not encouraged. Although not of primary focus in this research, for completeness, this section contains a number of minor case narratives which examine this important form of co-operation.

### 3.2.1 The Dublin Newspaper Industry

The newspaper industry in Dublin is highly competitive. There are a large number of publications for a relatively small population. These are The Irish Times, The Irish Independent, The Star and The Evening Herald. They compete for a market of approximately one million people. London by comparison has one evening paper for twelve million people. There is also a great deal of rivalry between the publications which is often based on differences in political ideology or reporting style.

Despite the level of competition and rivalry there are many examples of informal co-operation between journalists, photographers and editors in the business. They cooperate to avoid unnecessary duplication of effort in obtaining news stories. This co-operation usually takes the form of sharing different information or other resources such as photographs.

For instance, at the beginning of the Beef Tribunal in 1991, the Irish Times assigned four reporters, the Irish Independent also assigned four and the Irish Press assigned three. As time progressed however the reporters agreed amongst themselves to operate a roster system to prevent duplication of effort. This allowed newsmen to cover other stories. Stories were shared amongst the individuals concerned in an effort to cover all the events which might

occur in one day.

On occasion the agreement would break down when one reporter obtained a story which he did not share with his colleagues. However, the agreement would usually resume at some time later. As time progressed, editors sent fewer reporters to the Tribunal without fear of any loss of news coverage, although this informal co-operation was 'not press policy'.

Editors themselves are less likely to cooperate and will only do so when instructed by third parties. This might occur, for instance, when they do not publish certain news items during a 'news blackout' for example. A blackout may be requested by the Gardai for news stories such as kidnapping or the security of political figures.

### 3.2.2 The Advertising Industry

The advertising industry in Ireland is primarily concentrated in the Fitzwilliam Square area of Dublin. There are approx forty advertising agencies, twenty five of these would be considered small and these tend to specialise in various areas of the business, for example graphic design. The remainder, approximately fifteen, perform all the activities of required to produce a complete advertising campaign for clients, aside from the

actual printing process.

Executives in advertising companies regularly cooperate with one another. This type of co-operation usually happens between personnel who are of similar position in organisations, for example, designers and production managers. Co-operation usually involves sharing technical information concerning advertising campaigns. This can consist of pre-production work which shows how an image was created, what colours were used, what camera angles were chosen, lighting etc. Designers share information concerning concepts, designs and recent developments in the industry.

These exchanges can be made in social settings alternatively it is not uncommon for executives to contact one another at work and for the relevant information to be sent by courier to the rival's premises.

Account executives in advertising companies however are less likely to cooperate in this fashion. They liaise with clients and tend to more secretive about their work than some of their colleagues. In their view co-operation could result in disclosing information leading to the loss of a valuable client.

### 3.2.3 The Grain and Seed Merchants' Industry

Grain and seed merchants sell commodity products in a highly competitive mature business. Years of overproduction have resulted in large stocks of grain and there is increasing competition from cheaper US grain. The quality of the grain is strictly monitored by the Irish Grain and Feed Association. There are no "solus" agreements between individual farmers and the merchants and farmers are free to buy and sell to any merchant that they choose from. There is however some degree of customer loyalty or "goodwill" between farmers and merchants. Most merchants use aggressive pricing tactics to gain market share and this results in intense competition in the industry.

Traditionally, there has been informal co-operation between merchants in the industry. Merchants regularly borrow fertilisers and agri-pesticides from one another in times of short supply. It is also not uncommon for merchants to share storage facilities. Some employees from competing companies regularly socialise with one other to discuss new products and the creditworthiness of certain customers for instance. This is believed to be a valuable exercise. It is a source of market information that is quick cost effective and convenient to obtain. Prices and costs are not discussed.

However, not all competitors in the industry are afforded the luxury of this type of co-operation. In the past some merchants or more specifically representatives of certain merchants have abused the trust vested in them by fellow competitors. Typical examples of this would be using confidential information to poach rival's customers or perhaps contaminating rival's stocks. The penalty for this has been to be excluded from future co-operation.

#### 3.2.4 The Bandon Clothing Industry

There are approximately five clothing manufacturers in the Bandon area of Cork. These companies compete intensely for business and there is a lot of secrecy in the business especially concerning new designs. Despite this there a number of examples of informal co-operation between the companies. It is not uncommon for companies to borrow machinery from one another. Borrowing of machinery has reached a stage where at any one time it is possible that companies may not know where exactly their own machines are or indeed whose machines they are using. It is more important to have the correct machine when needed than to worry where the machines are coming from.

### 3.2.5 Miscellaneous

During the course of the field research for the formal cases the researcher encountered numerous other examples of informal co-operation. The Monarch Leather Company located in Dundalk, Co. Louth, regularly permits competitors to view its plant and machinery, which is generally regarded in the business as being of a very high quality. The company does insist that competitors give notice of their intention to view the premises. This allows the company to ensure that no new product designs are on view when competitors visit.

However, not all industries display such high levels of informal co-operation. Other industries consulted displayed little or no co-operation at the formal or the informal levels. The Aerospace industry and the Computer components industry are examples of industries in which little co-operation occurs at the overall level of the industry. Both industries are very secretive and executives at any level rarely have contact, much less cooperate.

The legal profession is an interesting example of a profession where industry level co-operation is on the decline. Traditionally, legal firms regularly informally cooperated with one another without fear of their respective clients being poached. However, in recent years

this situation has changed as the number of lawyers, especially solicitors, has increased drastically in the profession. This increase has resulted in more intense competition, which is becoming price oriented, and poaching clients is a regular occurrence. This has had a negative effect on the propensity of firms to cooperate due to fears that co-operation might compromise the firm's competitive position.

### **3.3 Conclusions**

This section contained three major cases and a number of minor cases concerning industry wide co-operation. The major cases were primarily concerned with how this type of co-operation forms in industries. The minor cases illustrated another important form of industry wide co-operation which has received little attention in the literature to date. This is informal co-operation.

The case narratives were primarily descriptive in order to allow the reader as much access to the data as possible. This data is interpreted in comparative mode in the analysis section which follows.

## **CHAPTER FOUR**

### **ANALYSIS**

## Introduction

In the analysis section the data is analyzed within the context of the current literature on industry wide co-operative strategy formation processes. However, analysis shows that no one theory or framework adequately explained the changes in the industries. Current theories had only partial explanatory power. Therefore, there was a need for an alternative explanatory model which focused on the phases of development and also factors and forces that drove these phases.

This model was constructed using the potato growers and the mouldmaking industry cases. These cases are chosen because they may provide complete data on what could be a more generic process. The HPP's and the potato growers industries were then analyzed within the context of this explanatory model. Neither of these cases provided complete data to fully support the model. However, data may support certain aspects of the phase model. Finally, there is a discussion on informal co-operation. It examines the rationale and a number of key features of informal co-operation.

#### **4.1 Key debates in the co-operative strategy process literature.**

The literature review highlighted a number of key debates on formation processes for industry wide co-operation. These debates concern whether the process is deliberate or emergent and the phases through which co-operation passes.

The data provide some support for the D'Aunno and Zuckerman (1987) emergence, transition, maturity, critical crossroads phase model for hospital federations. Data from the mouldmaking and the potato growers industries suggest that co-operation may have emerged in response to some threat to the industry. In the potato growers it was increased imports and in the mouldmaking industry it the need to enter new markets. During this phase strategies were undefined and unstructured. However, broad goals such as decreasing the level of imports of potatoes were evident.

D'Aunno and Zuckerman (1987) suggest a transition to a federation occurs in the next phase. Strategies and structures become more defined and a membership criteria is established. Management groups are formed to drive the process. Data from the cases support these findings. In both industries structures were established. For example, in the potato growers An Bord Glas and the potato market coordinator were formed. In the mouldmaking industry, the

mouldmaking corporation and the mouldmaking association were formed. Similarly, strategies became more defined, in the potato business the strategy was to build storage facilities to improve the quality and the supply of potatoes which in turn would decrease imports. In the mouldmaking business, the members quoted as a group and share production in order to compete against large foreign consortia. These strategies and structures became more defined following reports by management groups. For example, the report of the interim board in the potato business and the Meehan report in the mouldmaking business.

However the data provide less support for the D'Aunno and Zuckerman (1987) proposition that co-operation 'matures' by members becoming more dependent on a federation. The potato growers use the office of the potato coordinator to regulate supply, and therefore their dependence has increased. However, the mouldmakers became less dependent on the MAI and in particular the MCI. They began to informally cooperate with one another outside the official forum of the MAI or MCI. The data also provides little support for the proposition that a critical crossroads stage was reached when members decided whether to remain dependent on the federation. Data suggests that the critical crossroads and the maturity stage may be alike. Firms may decide that they are not dependent the formal structures. However they may continue to remain official members for contingency reasons. For example, "in case" a

large order is received in the case of the mouldmaking companies.

A criticism of the D'Aunno and Zuckerman (1987) the above study is that although it highlights a number of stages, less attention in the study is given to the factors and forces that drive co-operation through each stage. It emphasises the role of management throughout the process by forming management groups for example. However, the current literature also suggests that other factors are important for example the role of leadership.

The data suggest that the Dollinger (1990) study on co-operation in fragmented industries may have some explanatory power. However, the model does not fully explain the formation processes in the industries under examination. Dollinger (1990) suggests that co-operative strategies in industries emerges unintentionally as tacit strategies. Tacit strategies occur when firms behave "as if" they possessed co-operative strategies. However, in reality, firms are not explicitly co-operating.

Data for the potato growers, potato merchants and mouldmaking industries suggest that co-operation emerged without prior intentions of the firms as tacit strategies. For example, protests by farmers did not constitute a deliberate co-operative strategy, merely a common reaction to increased imports. Initial meetings between the

mouldmakers were not considered at the time to be co-operative strategies. In hindsight these action could be considered tacit strategies, firms behaved 'as if' they were co-operating.

A criticism of the Dollinger (1990) study is that although it posits that emergent strategies become deliberate strategies it does not suggest how this can occur. Nor does it suggest what other phases of development exist when co-operative strategies become more deliberate, unlike other studies.

This highlights another key debate in the current literature, whether overall process is deliberate (intended) or emergent (unintended). Deliberate strategies are formulated by management and they represent a rational and planned approach to strategy development. However, strategies may form in an emergent or unintended manner. This represents a less rational or deliberate approach.

Ring and Van De Ven (1994) suggest that the formation processes for co-operative strategies are rational and planned. They consists of a repetitive sequence of negotiation commitment and dissolution by the parties to the agreement. These are called decision making heuristics. These processes are more rational and deliberate and they are similar to the process of logical incrementalism in strategy formulation (Quinn, 1989).

Strategies form sequentially, making minor adjustments in response to new information which becomes available as the process advances. This is guided by an overall logic or intent.

This deliberate process is clearly in evidence in both the potato growers and the mouldmaking business. In both industries alternatives to problems were assessed and subsequently strategies were formed. For example, ABG constructed a development plan and the firms in the mouldmaking business assessed the possibility of a marketing agreement with the two US businessmen. Forming An Bord Glas and the potato marker coordinator were rational approaches to some of the problems that the industry was facing for example the lack of coordination. Forming the MAI and the MCI in the mouldmaking was a rational approach to coping with some of the key issues in the industry. For example, gaining members support and providing an appropriate legal structure for exporting.

However, there were also other processes during the formation which were less planned and deliberate. Co-operation in the beginning was unplanned, ad hoc and unintended. There appeared to be no overall plan of action in the mouldmaking and the potato businesses. As time progressed, firms in the mouldmaking business became less concerned with market development. They became more concerned with issues such as price information sharing.

Potato growers became more concerned with issues such as regulating supply to the merchants.

These constituted unintended consequences of earlier developments. They represented strategies that emerged over time in the absence of prior intentions. The complexity theory framework, (Browning et al, 1995), may have greater explanatory power for these processes than decision making heuristics, (Ring and Van De Ven, 1994). Complexity theory posits that order can and does arise out of chaos even if it unintended unplanned or unwanted. Co-operation can evolve as a result of a milieu of interactions between firms and not necessarily as a result of an overriding economic logic to cooperate.

Some of the earlier phases of co-operation display a process that may be explained by complexity theory. These were unintended actions that formed a pattern over time, (Minzberg, 1978). Therefore, strategies were not formulated in advance. For example, in the potato growers' business protests and diesel throwing were not intended to force the Irish government to introduce grants. They were intended to force the government to do something to decrease imports. Later in the process a similar situation occurred when the firms in the mouldmaking business began to cooperate informally on sharing production. This was an unintended consequence of earlier forms of co-operation which were designed to penetrate foreign markets.

Therefore, what the previous analysis shows is that none of the existing theories on formation processes for industry wide co-operation were able to fully explain the changes that occurred in the industries in the data. In reality each theory has some explanatory power. At times the process was deliberate (Ring and Van De Ven, 1994) at other times the process was emergent (Browning et al, 1995). Some strategies were explicit, others tacit. The D'Aunno and Zuckerman (1987) study explains some of the formation process however the model in respect to the data is incomplete. The role of management is well defined however the role of leadership is unclear. Dollinger's account (1990) may have some explanatory power in the early phases of development. However, this model is also incomplete. It does not suggest how strategies become deliberate nor does it suggest what happens when a strategy becomes deliberate.

Therefore, a more complete conceptual framework or model is required. This may provide for a complete analysis of the formation process of industry wide co-operation. This model needs to show the phases of development and also the factors and forces that drives these phases. It needs to be sufficiently flexible to show how strategies form and are formulated. Finally, it should take account of a variety of factors including leadership, social interactions and management intervention.

#### **4.2 Overall Patterns of Formation: A Phase Model:**

The phase model presented in this analysis attempts to take account of the critical issues highlighted in the previous analysis. This analysis examines the formation processes in the mouldmaking and potato growers businesses. This data was chosen as it suggests that the formation processes in these two industries were similar. This may allow for the construction of a more generic explanatory model. It suggests a three phase process model consisting of an emergent phase, a transitional phase and a maturity phase.

The data is analyzed using the Pettigrew (1985) context-process-outcome theoretical framework that was outlined in chapter one. Context considers the conditions under which co-operation forms each of the industries examined, process considers the factors and forces that drive co-operation through each phase. Finally, outcome considers the results of these processes within the industry and also the wider societal contexts.

Following this, two other cases are discussed in the context of this model, the HPP's industry and the potato merchants industry. Finally, informal co-operation is discussed. Table one highlights the critical issues in the emergence phase.

**Table 1: Emergence Phase**

	Context	Process	Outcome
Potato Growers.	<ul style="list-style-type: none"> <li>• Tradition of local cooperation.</li> <li>• Little national organisation.</li> <li>• Changing industry structure:               <ul style="list-style-type: none"> <li>- Increase in foreign competition.</li> <li>- Change in consumer tastes.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Disruptive activities by farmers to reduce imports.</li> <li>• IFA lobby government.</li> </ul>	<ul style="list-style-type: none"> <li>• Political pressure on the Irish Government to provide solution.</li> </ul>
Mouldmaking	<ul style="list-style-type: none"> <li>• Suspicion and mistrust.</li> <li>• Doran's belief in cooperation.</li> <li>• Changing industry structure:               <ul style="list-style-type: none"> <li>- Increased costs / foreign competition.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Leadership - Doran</li> <li>• Political impetus - IDA</li> </ul>	<ul style="list-style-type: none"> <li>• WorkShops</li> <li>• Meetings / proposals.</li> </ul>

#### 4.2.1      **The Emergence phase**

##### (i)          Context

The data indicate that the emergence phase may be typically stimulated by major market and environmental changes over which the individual firms had little or no control. These findings are similar to those of Browning et al (1995), D'Aunno and Zuckerman, (1987) and Shortall and Zajac, (1987). These studies emphasize the importance of environmental context for the emergence of co-operation between companies in entire industries.

Changes came in the form of threats posed by foreign competitors and changes in consumer tastes. These had an adverse effect on all firms in the industry and some authors have referred to them as 'the shadow of the future', (Axelrod, 1984). For example there were changes in the basic structure of the market for the potato growers. Consumers' tastes changed and they were demanding higher quality products. Supermarkets were growing to meet these new demands and there were regulatory changes which enabled potatoes to be imported in greater number than had previously been the case. There were also strong structural changes happening in the mouldmaking business. The industry became global and there was an increase in costs partly due to government policy.

Major market and environmental changes were not the only factors that influenced the emergence of co-operation in these industries. There were also a number of cultural, social and non-economic factors. Tradition or experience of co-operating was important because participants felt less threatened by co-operation. They were more likely to initiate it themselves without outside influence. For example growers traditionally cooperated at a local level during harvest times, often sharing plant and equipment.

In industries where there was little tradition and experience of co-operation, the role of key individuals was important. Their relationship with the industry and attitude towards co-operation was a key contextual issue. The various market changes in the mouldmaking industry were insufficient to spur the companies in the industry into co-operating. The leadership of Maurice Doran, of Sligo RTC, was also crucial.

(ii) Process

This research suggests that there were a number of important drivers of change during the emergent phase. These include leadership by individuals associated with the industry, protests and political lobbying

Doran displayed clear leadership in the mouldmaking

industry. He promoted and legitimised co-operation by using the influence and the trust that had been developed between him and the other firms in the business. The reason for Doran's success could be attributable to the extent to which he was known, respected and trusted in the industry.

In contrast, potato growers' unofficial action in the form of diesel throwing incidents was another powerful driver of change in the potato industry. Individual farmers in the industry acted en masse to induce or force others (government) to assist them in coping with the changes that were occurring in their market.

(iii) Outcome

Firms in both industries behaved "as if" they were co-operating. Their actions represented a type of "tacit" or "pre-co-operation". This may be a forerunner to more formal co-operation. The data suggest that during this phase explicit formal strategies did not exist. Firms at the time were unaware that they may have been co-operating with one another. Farmers actions were a common reaction to imports. While mouldmakers merely attended workshops and meetings that were organised by the IDA and Doran. Only with hindsight could these be construed as co-operation. This type of co-operation had no clearly

strategy, although an ultimate goal may have been evident such as reducing imports.

#### 4.2.2 The Transitional Phase

Table 2: Transitional Phase

	Context	Process	Outcome
Potato Growers	<ul style="list-style-type: none"> <li>• Need to develop a policy for the horticultural sector.</li> </ul>	<ul style="list-style-type: none"> <li>• Government employ experts.</li> <li>• Management team employed.</li> </ul>	<ul style="list-style-type: none"> <li>• ABG formed</li> <li>• Potato Market Coordinator</li> </ul>
Mould-making	<ul style="list-style-type: none"> <li>• Doran's experience in building structures</li> <li>• Dissenters</li> <li>• Management time becomes important.</li> </ul>	<ul style="list-style-type: none"> <li>• Experts employed</li> <li>• Reports produced</li> <li>• Alternatives are analyzed</li> </ul>	<ul style="list-style-type: none"> <li>• MAI formed</li> <li>• MCI formed</li> </ul>

##### (i) Context

The data indicate that the potato growers' protests on the growing levels of imports presented the government with issues and problems. The solutions to these were initially unclear. The IFA suggested that quotas should be introduced and that extra storage capacity was needed. However, there were questions as to how these would be funded and administered. There was also a need for greater market information and promotion of the horticultural development market in general.

Following the emergent phase, some companies in the mouldmaking industry began to discover that co-operation was a time consuming process. Co-operation required travelling to, and attending meetings, for instance. Co-

operation also involved other complex issues such as legal structuring and market research. Some companies in the industry remained unconvinced of the benefits of co-operation based on their experience of the emergent phase and they began to dissent.

(ii) Process

One of the key features of the process in the transitional phase was the role of outside specialists. Their role was to drive the co-operative process. Specialists were imported as consultants. They compiled reports, analyzed alternatives and developed structures and strategies. Examples of this in the data include the Meehan report and the appointment of Tony Lang as a general manager of the MCI in the mouldmaking business. Forming the interim board which led to the creation of ABG. Finally, forming the office of the potato coordinator in the potato business.

Overall, the developmental process was slow in these industries. Compiling reports, holding meetings, developing structures and strategies proved to be a time consuming process. Once these had been developed, getting overall agreement was a problem and dissenters emerged. For example, negotiations with Tony Lang took nearly one year and both the MCI and ABG took three years to form.

(iii) Outcome

The data suggest that during the transition phase co-operation can become more legitimate. It may develop its own formal structures for example industry associations. Management structures and roles may also become evident. The data suggest that clearly visible strategies are formalised and often published, for example brochures, annual reports etc.

### 4.2.3 The Maturity Phase

Table 3: Mature Phase

	Context	Process	Outcome
Potato Growers	<ul style="list-style-type: none"> <li>• Improved market structure:               <ul style="list-style-type: none"> <li>- Economies of scale.</li> <li>- Fewer/larger growers.</li> <li>- Improved market information.</li> </ul> </li> <li>• Improved relations between growers.</li> <li>• Market power of merchants.</li> </ul>	<ul style="list-style-type: none"> <li>• Thornton's directive leadership.</li> </ul>	<ul style="list-style-type: none"> <li>• Self-sustaining cooperation.</li> <li>- Regulation of supply to merchants</li> <li>• Community</li> </ul>
Mould making	<ul style="list-style-type: none"> <li>• Increased trust / experience between competitors.</li> <li>• General improvement in economy.</li> <li>• Market power of major buyers.</li> </ul>	<ul style="list-style-type: none"> <li>• Learning process</li> </ul>	<ul style="list-style-type: none"> <li>• Self-sustaining cooperation:</li> <li>- Sharing price information.</li> <li>- Sharing production.</li> <li>• Community</li> </ul>

#### (ii) Context

In the maturity phase there were important changes in the context for co-operation. The data suggest that in the potato growers business the old issue of the market power of merchants and supermarkets became prevalent once more. However growers were in a position to collectively decrease their dependency on the merchants. This was because growers now possessed storage facilities. These could be used to regulate supply. Storage facilities were as a result of previous phases of co-operation.

Growers also became more dependent on the potato market coordinator for information on which they based their stock levels. This greater reliance and commitment to co-operation was an important feature of the maturity phase. There were also increased levels of trust in the industry as a result of improved relations between the growers in the business.

In the mouldmaking business, the old issue of low margins and dominant suppliers being able to dictate low prices became prevalent once more. As the levels of trust in the industry increased, and the firms gained more experience co-operating, they also became more dependent on co-operation to redress this imbalance. This was similar to the situation that existed in the potato industry but with one important exception. Mouldmaking companies became more dependent on each other, and less dependent on the formal administrative structures that were formed in the developmental phase.

(ii) Process

In the growers industry co-operation matured through a directive style of leadership in the form of Jim Thornton, the potato market coordinator. Thornton wished to see greater transparency in the marketplace and a more equitable balance of power between the growers and the

merchants. This was achieved by collecting and disseminating market information for the growers. This information was then used to decide the volumes of potatoes to be released to the merchants.

In the mouldmaking business co-operation matured through a learning process. It did not appear to have developed directly as a result of leadership, although this was crucial in the earlier stages of development. As a result of previous stages of development, individual mouldmakers gained experience at co-operating, and trust levels in the business increased.

(iii) Outcome

The data indicate that the result of the maturity phase seemed to be some form of self-sustaining co-operation. It was the reason why firms continued to cooperate. It concerned what the firms in the industry wanted to cooperate on (a firm logic) , as opposed to what the industry officially believed it should cooperate on (an industry logic). Firms in the mouldmaking business decided to cooperate on sharing production and price information for example. These decisions were made outside the official forums of the MAI and MCI. It would appear that the MAI and the MCI began to develop different goals to that of the actual members themselves. This is an

important consideration and it is discussed in greater detail later.

The potato coordinator and the growers reached a consensus on self-sustaining co-operation. They cooperated to improve their relative bargaining power against the merchants. The original rationale for co-operation however was to decrease the level of imports of potatoes. This had not occurred, and imports remained high. This is also discussed in greater detail later.

There is evidence to suggest that a community formed between the growers and also the mouldmakers. Browning et al, (1995) also observed that a community had formed between the firms in the Sematech alliance in the US. A culture of co-operation developed in these industries and co-operation became institutionalised between the firms, (Ring and Van De Ven, 1994).

#### 4.3 Summary of the phase model:

The main points of the phase model are summarised in Figure 3 that follows:

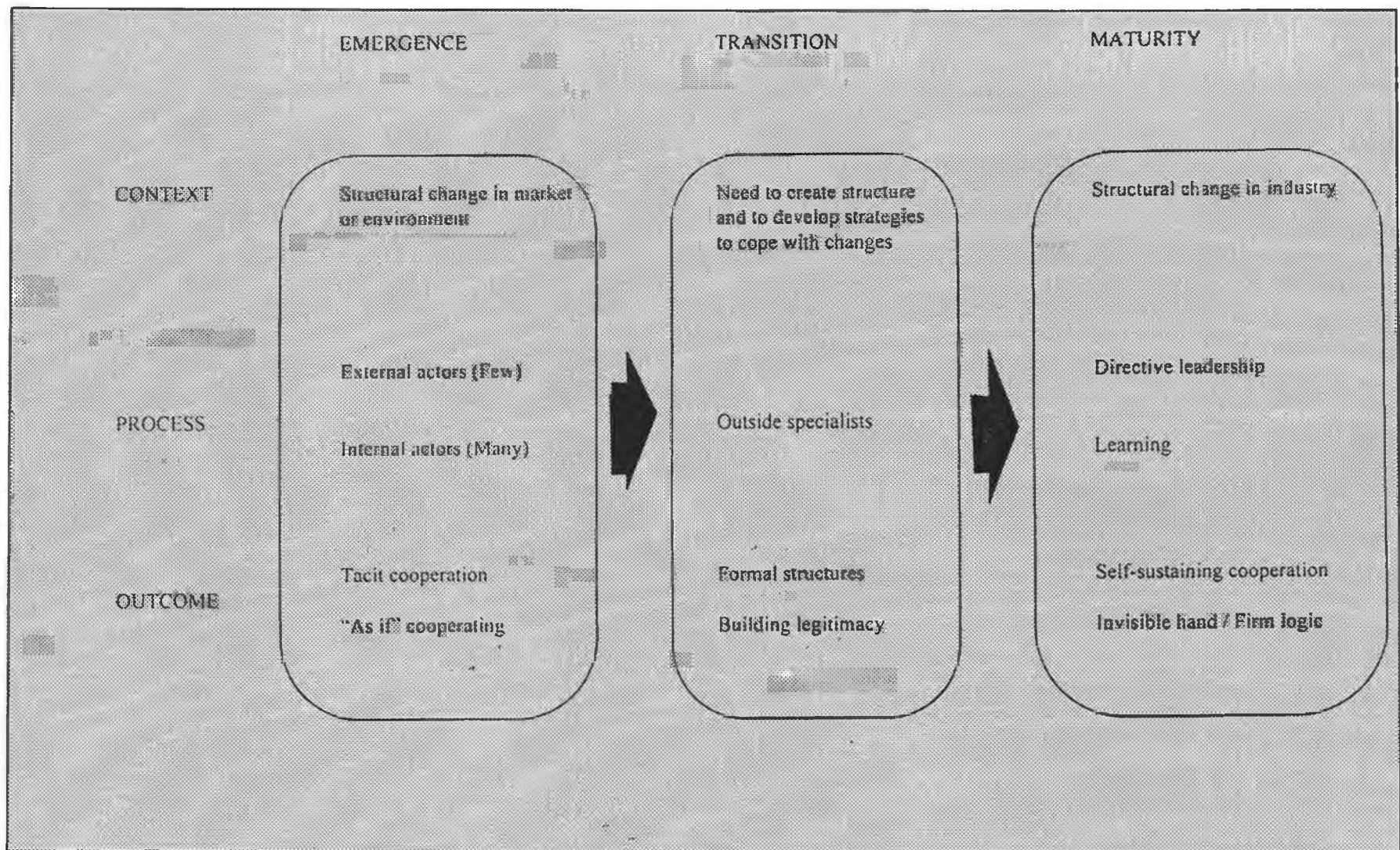


Figure 3: The Phase Model

(i) Emergence

The data show that the opportunity to cooperate manifests in the emergent phase. It may be typically stimulated by structural changes in the environment or the market for firms. These represent some sort of threat to these firms. They can be sudden or more gradual in nature and they may even go unnoticed by firms. There are also other important considerations. The most important of these appear to be the relations between the competitors. Poor relations can inhibit the emergence of co-operation.

External and internal forces seem to be important in the emergence phase. The internal forces may be actors in an industry that are directly effected by the changes. Their reactions to the changes in the industry may be the primary drivers of change. Alternatively, external drivers may come in the form of leaders. Their position outside the industry may permit them to observe changes to the marketplace that actors within the industry may not be able to perceive. A possible reason for this is that structural changes may be subtle. Leaders act for the greater good of the industry and not necessarily for personal financial gain.

Overall the data suggest that the process may develop in the absence of intentions and a clear strategy may not be in evidence. It is possible that complexity theory

(Browning et al, 1995) has some explanatory power during this phase. It emphasises that co-operation can occur in the absence of an underlying economic logic. Strategies form as the result of a milieu of interactions over time between the participants

Co-operation in the emergent phase seems to be tacit. Firms behaved "as if" they were co-operating. In reality, they may not have possessed a conscious co-operative strategy. Firms may not have been aware at the time that they were co-operating. Their actions during this phase may be regarded as pre-co-operation. A broad goal might have been evident however strategies were vague and undefined.

(ii) Transition

During the transition phase there was a need to establish structures and strategies to cope with the changes in the industry. This helped to build the necessary legitimacy for formal co-operation to operate. However establishing structures can be a complex task and it may require specialist skills.

The data show that the transition phase was characterised by different factors and forces to the emergent phase. Different drivers were appropriate due to different

contexts. The primary drivers of this phase seem to be outside specialists. The cases suggest that outside specialists were responsible for compiling reports, conducting research and establishing structures to legitimise co-operation. During this period a clear strategy developed, alternatives were assessed and decisions were made. This process may be time consuming due to the need to draw up legal agreements, agree terms of employment and satisfy the needs of possible dissenters.

During this phase the process may be more deliberate as opposed to emergent. It is possible that decision making heuristics may have greater explanatory power during this phase. These suggest that strategy is formulated as a continuous process of negotiation, commitment and dissolution. It represents a rational approach to strategy formulation and the process resembles the process of logical incrementalism, (Quinn, 1980). Strategies form sequentially, making minor adjustments in response to new information which becomes available as the process advances. This is guided by an overall logic.

The data suggest that the transitional phase seems to legitimise co-operation. Identifiable formal structures were a trademark of this phase and goals or strategies became more developed. These were long term strategies, an industry logic guided by a "visible hand". Goals included developing international markets and improving the

competitiveness of the industry against foreign competition. Examples of structures formed during this phase were associations and consortia.

(iii) Maturity

In the maturity phase co-operation may become legitimate in the industry. It may have its own form and structure for example an industry association. These structures may be further legitimised if they achieve early successes.

As in the transition phase the drivers in the maturity phase change as new issues become relevant. Directive leadership may be important in this phase for driving co-operation. Directive leadership can be an important catalyst and coordinator. Although firms may possess the will to cooperate they may not possess sufficient resources, for example information, to effectively cooperate. Directive leadership can provide these resources. Directive leadership may be able to collect and disseminate information efficiently and effectively and coordinate co-operation. This may occur in fragmented industries.

Where firms themselves possess the means to cooperate, there may be no need for directive leadership. This may occur because the firms are larger and there may be fewer

of them. The transition to maturity occurs because firms learn how to cooperate. For example firms may learn that co-operation requires reciprocal information disclosure. Firms may learn how to disclose this, what information to disclose and also the possible benefits accruing from disclosing information. Like the emergence phase the process once more can become emergent in nature. Data suggest that a 'self-sustaining' co-operation emerged in the absence of prior intentions of any of the firms in the industry.

The result of these processes is a self sustaining co-operation. It is a firm logic as opposed to an industry logic. Co-operation becomes explicit as opposed to tacit in nature. Self sustaining co-operation is different from the initiating co-operation. It may be a shorter term tactical goal. This may have the benefit of increasing profits in the shorter term. Examples of this include production sharing and sharing price information.

#### 4.4 Do the other Data Contradict the Phase Model ?

An important consideration is the validity of the phase model. Although this analysis does not exhaustively test this, other data from the cases may provide some indication as to the validity of the model. The purpose of this section is to use other data to investigate the general applicability of this process model. To do this data is used from the HPPs industry and the potato merchants industry.

##### 4.4.1 Potato Merchants Industry

The data in the potato industry suggest that firms in the industry were beginning to cooperate. There were proposals for an industry wide marketing campaign to promote the consumption of potatoes. The potato federation meetings were becoming more constructive. Prior to this the meetings were used as another method of competing by spreading false rumour to competitors. However firms were beginning to discuss issues such as seed quality at meetings. The most important issue is that data suggest that firms' attitudes to co-operation were changing although suspicions in the industry still existed.

The reasons for this appeared to be a general improvement in the structure of the business. It began to be

characterised by firms behaving as 'good competitors' (Porter, 1985). These improved the industry structure. Prior to this the industry was characterised by 'bad competitors' such as the lorry-men and the truckers who undermined the industry structure with poor competitive practices and produce. Firms in the industry conceded that the relations in the business improved although outright co-operation was still some way off. Therefore the data indicate that industry wide co-operation in the potato merchants industry may be 'tacit' co-operation. Co-operation may have been in the emergent phase of the model. It did not reach the transition phase where it could have become more legitimate.

This analysis suggests that to reach a transitionary phase the crucial element could be leadership. This leadership could come from within the industry itself however this may be unlikely. Individual firms seemed reluctant to initiate this process. Therefore it may be up to leadership outside the industry to kick start the process in the future.

#### 4.4.2 The Homogenous Products Producers' Industry

There are a number of possible explanations for the co-operation in the HPP's industry. Co-operation could be in either one of two phases, the emergent phase or the maturity phase. Firms initiated the process of co-

operation in a deliberate manner. The agreement was reached quickly and it sustained for three to four months. The agreements then aborted and there was a resumption of competition.

Co-operation may have been in the emergent stages of development and then it aborted before it has a chance to reach transition. It aborted due to a lack of commitment on the part of some of the participants. The main evidence to suggest that it remained in the emergence phase before aborting is that the co-operation did not become legitimate and develop structures. There may have been obvious legal reasons for this. As there was no legitimacy and structures, commitment to the agreement was low and the agreement was broken easily and quickly in response to market changes.

Another possible explanation is that the agreement initiated deliberately and went straight in to the maturity phase. However it became unstable. The principal argument for this is that the emergent phase can be typically characterised by a tacit co-operation that emerges over time. In the HPP's industry, on the other hand, the process was deliberate and the strategy was explicit. Firms did not behave as if they were co-operating and there was a firm as opposed to an industry logic to co-operation. This type of strategy can be more prevalent during the maturity phase where firms behave with the benefit of

experience and they can cooperate in the absence of formal administrative structures.

However co-operation was clearly not self-sustaining. It was unstable and it only lasted a few months. Co-operation in the maturity phase on the other hand seem to be self sustaining, and it may endure over time. Clearly this was not the case in the HPP's industry.

A final explanation is that the phase model developed earlier may not be applicable to the HPP's industry. There is strong evidence in the data that co-operation in this industry may have been in the emergent or the maturity phase. However there are a number of contradictions to this as the previous analysis has shown. A possible research opportunity exists for determining a process model which could more accurately the process in the HPP's industry.

#### 4.5 Informal Co-operation

During the course of collecting data for this research informal co-operation was observed as a prevalent form of industry wide co-operation. Although informal co-operation does not directly apply to the research objectives of this thesis, it is an important form of co-operation which has received little attention in the literature to date.

Informal co-operation is co-operation among people across organisations. It excludes co-operation by the organisations themselves, it is a community of professionals. Generally, it has been confined to being viewed as some form of transient co-operation that either leads to, or comes from, formal co-operation, (Oliver, 1990; Ring and Van De Ven, 1994; Browning et al, 1995).

Informal co-operation usually occurs because one organisation, or more especially one individual, is dependent on critical items which another organisation or individual possesses or has access to. These items can be obtained more efficiently or less costly through co-operation. This is conceptualised in the resource dependency theory, (Pfeffer and Salancik, 1987) and the transaction cost theory, (Thorelli, 1986; Williamson, 1975).

The data suggest that there was a need for co-operation

between reporters and photographers in the newspaper industry due to lack of manpower in areas such as Daily reporting. Executives in the advertising business regularly cooperate to gain access to certain production work, firms in the Bandon clothing industry cooperate to share machinery. Sales executives in the grain business cooperate to gain access to information and special seeds. In each of the above cases co-operation occurs because one firm or individual possesses certain resources which would be too costly or too time consuming to attain by other means, for example by purchasing or leasing.

The data show that this type of co-operation may occur in non-competitive areas of a firm's value chain. Co-operation of this type can decrease costs for firms, by borrowing machinery as opposed to leasing, or by sharing production as opposed to building capacity. However, this type of co-operation does not add distinct value to firms' operations, unlike more strategic forms of co-operation, for example alliances and partnering. Informal co-operation is less likely to occur in areas where value may be created. For example, account executives in the advertising business are reluctant to informally cooperate due to fears of losing clients. Clothing manufacturers do not cooperate on matters such as clothes design.

There are other non-economic conditions that can explain the existence of informal co-operation in industries.

Informal co-operation is most prevalent between individuals who are of similar professional or employment backgrounds. Co-operation forms between 'designers', 'lawyers', 'accountants', 'advertising executives', 'reporters', 'photographers' etc. In fact some organisations do not officially recognise informal co-operation. For example, it was "not press policy" according to Liam Hyland of the Irish Press.

These individuals or professionals are constituents of larger communities, which collectively share a common fate. Benson (1977) has also noted the existence of communities or 'sub-systems' in organisations which are based on race, social status, sex etc. The data suggest that membership of a community, and a sense of belonging, may be important conditions for the establishment of informal co-operation.

Proximity and contact between individuals also appear to be important. Sales representatives and journalists, regularly meet while conducting their day to day business, while designers and advertising executives socialise with one another. Informal co-operation is conspicuous by its absence in industries where there is little direct contact between individuals. There appears to be little or no informal co-operation between firms in global businesses such as computer components for instance.

The data do not suggest how informal co-operation initiates

in an industry. All of the individuals consulted during the preparation of this research noted that at no time did they ever recall informal co-operation of this type starting. In the words of many respondents "it has always existed". Similarly, research was unable to identify any industries which once exhibited informal co-operation but no longer continues to do so.

The cases suggest that informal co-operation may be a self perpetuating system of co-operation. It functions as a result of the multitude of small discrete interactions between individuals as constituent members of firms on the one hand and communities on the other. These interactions come in the form of exchanges, discussions and 'favours' which are reciprocated by other members at some future time. Informal co-operation does not appear to be driven by key individuals, leaders, outside specialists unlike formal co-operation. To suggest that it is being 'driven' implies that it is a phase of a larger cycle or model of co-operation. This does not appear to be the case.

An important feature of this system is that it may have its own policing mechanism. This helps to sustain it. The basis of the co-operation is trust, reciprocity and experience. This provides an important self-policing mechanism which effectively seeks to ensure that the system is not abused regularly by the members. However, this can occur when violations go undetected as in the grain

industry case. Enforcement may be exercised by the individuals themselves and the punishment by violators is to be excluded from further co-operation of this type. This appears to have a social as well as an economic and a commercial stigma and violators seem to be generally well known in an industry.

It is possible that informal co-operation is co-operation that is in the mature phase of the model developed previously. The principal argument for this is that informal co-operation appears to have developed its own self sustaining rationale. This may be an individual or 'actor logic' which is similar to a 'firm logic'. This may be possible through the existence of a policing mechanism which assures that violators are excluded from co-operating.

The data does not suggest that informal co-operation has come from other forms of co-operation as none of the interviewees ever recall it starting. On the other hand the data does not suggest that informal co-operation has not come from other more legitimate forms of co-operation. These forms however may have ceased to exist some time ago and are survived by informal co-operation. Another possible explanation is that informal co-operation has evolved from other more legitimate forms of co-operation in related industries and not necessarily the industry in which it exists. Therefore informal co-operation may be

able to spread from one industry to another.

Like the HPPs and the potato merchants' industry it is possible that another explanatory model may explain the formation of informal co-operation. Research opportunities exist for researchers to develop such a model or to investigate one or a number of the hypotheses outlined above.

#### 4.6 Conclusion

This chapter has suggested that the current literature was unable to explain the changes that happened in the industries under examination. A phase model for the formation processes of industry wide co-operation was proposed which explained these changes for two industries, the potato growers and the mouldmaking industries. This phase model was then analyzed in the context of the potato merchants industry, the hpp's industry and informal co-operation. Analysis provided some support for the phase model however further research may substantiate this model or discover other model which can more adequately explain the process. The implications of these and other findings are now discussed.

## **CHAPTER FIVE**

### **CONCLUSIONS**

## **5.1 Implications for Management and for Future Research**

The objectives of this research were to discover more about industry wide co-operation and its formation processes. The principal findings are that there is a phase model of formation processes. The initial rationale may be different to the sustaining rationale, and that the drivers of co-operation may change over time. This research also indicated that informal co-operation is an important form of industry wide co-operation.

Some of these findings may be of use to practitioners seeking to promote and manage industry wide co-operation. A study of this type provides insight into the critical episodes in the formation process. Each episode will present different issues for managers and may allow certain difficulties to be anticipated.

During the emergent phase, there is a major market change and possibly an emerging willingness on the part of companies in an industry to cooperate. However the spark to ignite the process may not exist in the industry itself. It may be up to others outside the industry, who have close ties with the firms in the industry, to begin the process. This may require certain key actors seeking to promote industry wide co-operation to act decisively and to time their actions to capitalise on the changes that are occurring in industries.

Managers should be aware of the need to establish structures in the development phase. Expert advice may be required and time consuming reports and studies may need to be completed. Managers can employ experts, specialists, management teams, committees etc to complete these tasks. This process may take time during which the sentiments and reservations of members who may be co-operating for the first time must be acknowledged. However management may have greatest control over the development phase as a result of creating these roles.

The maturity phase may present the greatest challenges for managers. During this phase co-operation can develop its own self-sustaining rationale. It may become an 'ecosystem' of co-operation which feeds on itself. This implies that it may exist with or without administrative structures. It may become the dominant form of co-operation which receives considerable support from the firms in the industry. However, self sustaining co-operation can develop divergent goals to the formal structures. To prevent this, managers may need to make members more dependent on the administrative structures earlier in the process. This could be achieved by creating stronger links between the members and management. Alternatively, management may need to alter their own strategies to coincide with the self sustaining rationale. This may be difficult if the two are vastly different.

Therefore, certain phases may be more effectively managed than others. Emergence and development may be more effectively managed than maturity, for instance. Management's ability to effectively manage a phase is dependent on the driving factors in that phase. Unfortunately, this can be difficult to predict. For example in the mouldmaking business, it was the members themselves, while in the potato business it was the leadership of Jim Thornton. However, it may be possible to manage the development phase more effectively than other phases.

Another implication of this research is that there may also be an learning curve to co-operation where individuals or firms learn how to cooperate over time. Evidence from the cases suggests that this may occur. For example once co-operation gets 'kick-started' it can develop its own dynamic. This requires further examination to discover if there is a learning curve to co-operation in industries and if so, how this process occurs.

Overall, this study has shown that there are many unintended consequences of industry level co-operation processes. The development of a sustaining rationale and drivers changing are just two. Future research may discover more of these and ways and means of limiting these effects. For instance increasing member support by providing them with information that they really need could

be one possible answer.

The existence of these unintended consequences raises other issues for managers. Perhaps the most important of these is *can the process be managed* ? As stated previously co-operation can develop a life of its own. Controlling and managing this may be difficult, even impossible, especially when official and unofficial goals diverge.

One might ask *if* the process should be managed, especially where informal co-operation is concerned. The risks associated with informal co-operation are potentially large in the absence of formal mechanisms. Examples of these are "gate keepers" who control what information goes to a partner or a competitor and they ensure only essential knowledge is transferred, (Hamel et al, 1989). Informal co-operation has important social aspects that go beyond purely commercial rationale. Formalising this or managing this may disturb this delicate balance.

There are numerous for management issues presented in this study. Ultimately, managers must carefully consider promoting and developing industry wide co-operation. This can have unintended consequences for entire industries not just one or two companies within the industry. Managers need to be aware that competition is the life blood of industry, (Porter, 1980). Evidence from this study suggests that although industry wide co-operation has many

other benefits is used to modify competition in subtle ways. These may not be in the longer term interests of the industry and related industries.

It is also possible that this study is a comment on strategy formulation within Irish firms. Perhaps certain Irish firms are forgoing longer term strategic benefits of co-operation for shorter term tactical benefits. If this is the case, the task of developing industry wide co-operation for strategic issues will be made more difficult. This may also have implications for strategy formulation in Irish firms in general.

More focused research will now be needed to develop the findings of this research further especially in regards to the phase model. This model is incomplete as some industries appear to skip certain phases, while others remain stuck at a phase. Developing the phase model will require closeness to data and future research may concentrate on a single cases for depth of analysis.

Future research should also be directed to discovering more about informal co-operation and also tacit co-operation. The data in this study is insufficient to offer a complete analysis. Research might discover why informal co-operation is a prominent feature in some industries and not in others.

Finally, future research should consider using contextualist case based methodologies. Its power and flexibility in being able to uncover process and content issues has been shown in this research. Industry wide co-operative formation processes can be non-linear, ubiquitous, and involve multiple modes of analysis. The Pettigrew (1985) contextualist framework used in this research is clearly suited to this task.

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## APPENDIX A

## Interviews

Baldwin, Rodney. Irish Trade Board, Dublin.

Interview, 20 March 1995.

Barrett, Richard. Richard Barrett Moulds Ltd., Dublin.

Interview, 10 November 1995.

Barry, Noleta. Forbairt, Dublin.

Interview, 19 March 1995; 9 November 1995.

Boylan, Michael. Boylan Print, Drogheda.

Interview, 1 June 1995.

Callan, Vincent. Service Stations Operators Association,  
Dublin.

Interview, 20 September 1993.

Clerkin, Josephine. Irish Platemaking Services Ltd.,  
Dublin.

Interview, 8 May 1995.

Comyn, Patrick. Independent Newspapers P.L.C., Dublin.

Interview, 14 November 1994; 22 November 1994.

Coyle, Peter. Forbairt, Dublin.

Interview,

Daly, Gerald. State Solicitor, Drogheda.

Interview, 6 December 1995.

Dodd, Kathleen. Forbairt, Dundalk.

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Doran, Maurise. Moldmaking Association of Ireland, Sligo.

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Egan, Paul. Black Bull Inn, Drogheda.

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Fagan, Gerald. Campbell Bewley Group, Dublin.

Interview, 12 December 1994; 23 May 1995.

Glennon, Liam. Sam Dennigan and Company, Dublin.

Interview, 30 May 1995.

Hyland, Liam. and Mc Intyre, Dermot. Irish Press  
Newspapers P.L.C., Dublin.

Interview, 2 November 1994.

Joyce, John. Irish Salmon Growers Association, Dublin.

Interview,

Keady, Maurice. An Bord Glas, Dublin.

Interview, 5 October, 1995.

Lang, Tony. Irish Moldmakers' Association, Sligo.

Interview, 7 November, 1995.

Mc Arthur, William. T. Fruit of the Loom.

In conversation with the author, Strategic Alliances  
for Growth Seminar, Dublin Castle, 12 April 1995.

Mc Donough, William. Mc Cann Ericsson Advertising Ltd.,  
Dublin.

Interview, 20 October 1994; 4 November 1994; 13 April  
1995.

Mc Govern, Barry. Aerospace Industries Plc. Dublin.

Interview, 4 April 1995.

Mc Glucian, Alaister. Masstock International.

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for Growth Seminar, Dublin Castle, 12 April 1995.

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Tipperary.

Interview by Telephone, 15 September, 1995.

O' Donoghue, Ciaran. Keytronic, Dundalk.

Interview, 18 October 1994.

O' Rourke, Christopher. O' Rourke Mc Cormac and  
Associates, Drogheda.

Interview, 18 October, 1995.

Reilly, John. Mc Keown Software, Dublin.

Interview, 25 October 1995; 11 May 1995.

Ryan, James. Bio-Research Ireland (Eolas), Dublin.

Interview by telephone, 26 March 1995.

Santry, Diarmuid. Drommonds Dolans Ltd., Drogheda.

Interview, 14 June 1995.

Sisk, John. Regional Technical College, Dundalk.

Interview, 20 March 1995.

Slevin, Michael. Irish Press Newspapers P.L.C., Dublin.

Interview, 2 November 1994.

Sutherland, Peter. World Trade Organisation.

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Thornton, Kevin. Mc Cann Fyffes Ltd., Dublin.

Interview, 6 October 1995.

Touhey, Frank. Vintners Federation of Ireland.

Interview, 20 September 1993.

