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The Role of Retailers as Channel  
Captains in Retail Supply Chain  
Change: the example of Tesco.

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# Abstract of thesis

## Entitled: The Role of Retailers as Channel Captains in Retail Supply Chain Change: the Example of Tesco.

The large scale retailer with a strong retail brand and sufficient critical mass in the market place may reach a pivotal point in its development when the directors can address the question: “Does the company want to get directly involved in the functions of centralised buying, logistics and supply chain management?” This thesis takes one such company and expands in some detail about its growth towards excellence in the techniques of retail supply chain change. The evolution and critical decision moments provide an in depth case study for others to use as a benchmark.

Its purpose is to examine the role of the retailer as a channel captain; a concept from an earlier marketing era, whose origins it reveals. It takes that learning together with contemporary supply chain thinking and examines real retail supply chain events in Tesco. The results of matching the new and old academic theory with practitioner events confirm that the channel captain is the retailer. It demonstrates that retailers can make the transition into that leadership position and apply supply chain management skills to competitive advantage. This can become a strategic tool both at national and international levels. The principles of this thesis could be used or applied in research in three areas: in depth with Tesco; in breadth, exporting expertise to other retailers; globally with retailers extending the operations internationally and suppliers seeking to trade with European retailers.

### Keywords

Retail, logistics, supply chain management, channel captain, Tesco plc, UK.

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# Contents

<b>ABSTRACT OF THESIS</b> .....	<b>II</b>
<b>ACKNOWLEDGEMENTS</b> .....	<b>III</b>
<b>CONTENTS</b> .....	<b>IV</b>
<b>LIST OF FIGURES</b> .....	<b>X</b>
<b>LIST OF TABLES</b> .....	<b>XII</b>
<b>1 INTRODUCTION</b> .....	<b>2</b>
1.1 THESIS TOPIC, AIM, OBJECTIVES, CONTRIBUTION .....	3
1.2 TOPIC, AIM.....	3
1.2.1 Objectives .....	5
1.2.2 Contribution .....	9
1.3 THIS PHD .....	11
1.3.1 Part time PhD.....	12
1.3.2 The Practitioner .....	13
1.3.3 The Academic .....	19
1.3.4 Limitations & Strengths .....	23
1.4 THESIS STRUCTURE .....	24
1.4.1 Chapter One: Introduction .....	25
1.4.2 Chapter Two: Channel Captain: Origins; Retailers; Tesco.....	25
1.4.3 Chapter Three: Tesco Retail Logistics.....	26
1.4.4 Chapter Four: Tesco Supply Channels .....	26
1.4.5 Chapter Five: Managing Supply Chain Change.....	27
1.4.6 Chapter Six: Methodology .....	27
1.4.7 Chapter Seven: Case Studies .....	28
1.4.8 Chapter Eight: Case Study Analysis.....	29
1.4.9 Chapter Nine: Conclusions and Recommendations.....	29
1.5 SUMMARY .....	29
<b>2 CHANNEL CAPTAIN: ORIGINS, TESCO</b> .....	<b>32</b>

2.1	ORIGINS.....	32
2.2	RETAIL TRENDS .....	37
2.2.1	<i>Culture and Retail Consumers</i> .....	39
2.2.2	<i>Changes in Food Retailing</i> .....	42
2.3	RETAIL AND LOGISTICS .....	45
2.3.1	<i>The Logistics task</i> .....	47
2.3.2	<i>Retail Logistics Transformation</i> .....	51
2.4	THE EXAMPLE OF TESCO .....	58
<b>3</b>	<b>TESCO RETAIL LOGISTICS .....</b>	<b>60</b>
3.1	TESCO TODAY .....	61
3.2	RETAIL LOGISTICS .....	64
3.2.1	<i>Tesco 1984 – 2005</i> .....	64
3.3	BEHIND THE RETAIL REVOLUTION IS A DISTRIBUTION REVOLUTION.....	67
3.3.1	<i>The Challenges for Distribution</i> .....	68
3.4	TESCO PAST: ESTABLISHING CONTROL OVER UK RETAIL DISTRIBUTION.....	74
3.4.1	<i>1970s Operation Checkout and Ambient Centralisation</i> .....	75
3.4.2	<i>Donald Harris Interview</i> .....	80
3.4.3	<i>1980s Composite and Contract Distribution</i> .....	82
3.4.4	<i>Computer Data Flows</i> .....	88
3.5	PRESENT: TESCO RETAIL GOES INTERNATIONAL .....	90
3.5.1	<i>The International Retail Operation</i> .....	90
3.5.2	<i>Tesco.com</i> .....	91
3.5.3	<i>Future Issue: The Environment</i> .....	93
3.6	CONCLUSION.....	94
<b>4</b>	<b>TESCO SUPPLY CHANNELS.....</b>	<b>98</b>
4.1	INTRODUCTION .....	98
4.2	PRIMARY DISTRIBUTION.....	99
4.2.1	<i>Enhancements in UK Distribution</i> .....	99
4.2.2	<i>1990s: Primary Distribution</i> .....	100
4.2.3	<i>Factory Gate Pricing</i> .....	102

4.2.4	<i>Total Supply Chain, Partnership Logistics,</i>	104
4.2.5	<i>Continuous Replenishment</i>	108
4.3	EFFICIENT CONSUMER RESPONSE	113
4.3.1	<i>ECR Summary and Benefits</i>	114
4.3.2	<i>Retail Buyer View</i>	115
4.4	PRELIMINARY CONCEPTS	119
4.4.1	<i>Push Supply or Pull Demand</i>	119
4.4.2	<i>Just in Time</i>	121
4.4.3	<i>Pace and Stockholding</i>	122
4.5	TEMPERATURE CONTROLLED SUPPLY CHAINS	124
4.5.1	<i>What is a Temperature Controlled Supply Chain?</i>	126
4.5.2	<i>The Importance of Temperature Controlled Supply Chains</i>	127
4.5.3	<i>Changes in Temperature Controlled Supply Chains</i>	135
4.6	SUMMARY	142
<b>5</b>	<b>MANAGING SUPPLY CHAIN CHANGE</b>	<b>146</b>
5.1	CHANNELS COMPETE	147
5.1.1	<i>The Whole Channel Competes: McCarthy 1981</i>	149
5.1.2	<i>Democracy, Mallen 1963</i>	151
5.1.3	<i>Retailers as Product Innovators: Moyer 1975</i>	154
5.1.4	<i>Associative Relationships: Dawson 1990</i>	155
5.2	CHANNEL DYNAMICS	157
5.2.1	<i>Function to Process: Christopher 2003</i>	158
5.2.2	<i>Collaboration: Spekeman, Kamuff and Myhr 1998</i>	159
5.2.3	<i>Interdependence: Porter 1980</i>	161
5.2.4	<i>Non-Adversarial: Lonsdale 2002</i>	162
5.2.5	<i>Goodwill Trust: Hines 2004</i>	163
5.3	CHANNEL CHAMPIONS	165
5.3.1	<i>Situational Leadership: Hersey &amp; Blanchard 1997</i>	166
5.3.2	<i>Negotiation Styles: Glaser &amp; Glaser 1991</i>	168
5.3.3	<i>Dominant Designer: Koehorst et al 1999</i>	171
5.3.4	<i>Specification Buying: Kelley 1954</i>	172

5.4	CHANNEL TYPES.....	172
5.4.1	<i>Integrative, Segmentalist: Kanter 1984</i> .....	173
5.4.2	<i>Enablers, Barriers</i> .....	174
5.4.3	<i>Supply Chain Application: Gustafsson et al 2006</i> .....	175
5.4.4	<i>Quadrant Characteristics</i> .....	176
5.4.5	<i>Routes for Change</i> .....	179
5.4.6	<i>Benchmarks</i> .....	183
5.5	SUMMARY.....	184
<b>6</b>	<b>METHODOLOGY.....</b>	<b>186</b>
6.1	ACTION RESEARCH.....	186
6.2	ACTION RESEARCH IN EDUCATION.....	190
6.2.1	<i>Action Research</i> .....	190
6.2.2	<i>Emergence of Action Research</i> .....	192
6.2.3	<i>Assumptions of Action Research</i> .....	196
6.2.4	<i>Generating Evidence</i> .....	199
6.2.5	<i>Summary</i> .....	203
6.3	SUPPLY CHAIN APPLICATION.....	204
6.3.1	<i>Action Research Principles</i> .....	204
6.3.2	<i>Application to Supply Chain Change</i> .....	205
6.4	CASE STUDY SELECTION.....	205
6.4.1	<i>Building Theories from Case Study Research</i> .....	208
6.5	SUMMARY.....	209
<b>7</b>	<b>RESEARCH TESCO CASE STUDIES.....</b>	<b>212</b>
7.1	POTATO SUPPLY: 1990.....	218
7.2	BANANA SUPPLY: 1992.....	222
7.3	ST PETER'S FISH: 1994.....	226
7.4	FRESH MEAT & POULTRY: 1994.....	230
7.5	STRAWBERRY SUPPLY: 1996.....	235
7.6	SPANISH ICEBERG LETTUCE: 2002.....	239
7.7	CHILLED PRODUCT SUPPLY: 1985 –2005.....	245

7.8	SUPPLIER LOGISTICS: 1990 – 2005 .....	248
7.9	FROZEN CHANNEL: 1986 – 2003.....	253
7.10	SUSTAINABLE DISTRIBUTION: 1997.....	257
7.11	WAREHOUSE PRODUCTIVITY: 1980s – 2000's.....	261
7.12	PRE-COMPOSITE SUPPLY CHANNELS: 1980s.....	265
7.13	COMPOSITE CAPACITY: 1989 – 2004.....	269
7.14	LOGISTICS SERVICE PROVIDERS: 1980s – 2005 .....	274
7.15	OPEN BOOK ACCOUNTING: 1986 – 1990.....	279
7.16	COMPOSITE TRAILER: 1989.....	283
7.17	PLASTIC TRAY: 1990.....	286
7.18	BONDED SUPPLY: 1988 .....	293
7.19	THAILAND:2002.....	296
7.20	SOUTH AFRICA: 2003 .....	300
7.21	SUMMARY .....	304
<b>8</b>	<b>ANALYSIS OF CASE STUDIES.....</b>	<b>308</b>
8.1	INTRODUCTION .....	308
8.2	LITERATURE LINK.....	308
8.3	GENERIC CASE ANALYSIS .....	313
8.3.1	<i>Situational Leadership</i> .....	314
8.3.2	<i>Negotiating Style</i> .....	316
8.3.3	<i>Integrative and Segmentalist</i> .....	318
8.4	COMPETING EXPLANATIONS .....	319
8.5	SPECIFIC CASE ANALYSIS.....	322
8.5.1	<i>Joint Leader: Channel Development</i> .....	323
8.5.2	<i>Dominant Designer: Technical Development</i> .....	324
8.5.3	<i>Collaborative Leader: Channel Restructure</i> .....	325
8.5.4	<i>Collaborative Leader: Channel Capability</i> .....	328
8.5.5	<i>Collaborative Leader: Channel Enhancement</i> .....	330
8.6	CHANNEL CAPTAIN IDEAL BEHAVIOUR.....	332
8.7	SUMMARY .....	334



<b>9</b>	<b>CONCLUSIONS &amp; RECOMMENDATIONS</b> .....	<b>336</b>
9.1	INTRODUCTION .....	336
9.2	MEETING THE OBJECTIVES .....	341
9.2.1	<i>Origins</i> .....	341
9.2.2	<i>Retailers</i> .....	343
9.2.3	<i>Role &amp; Behaviour</i> .....	345
9.3	CONCLUSIONS .....	348
9.3.1	<i>The Concept</i> .....	348
9.3.2	<i>The Role</i> .....	350
9.3.3	<i>The Behaviour</i> .....	356
9.3.4	<i>Author Learning</i> .....	357
9.3.5	<i>Contribution</i> .....	359
9.4	LIMITATIONS AND FUTURE RESEARCH .....	365
9.4.1	<i>Limitations</i> .....	365
9.4.2	<i>Future Research</i> .....	369
9.5	SUMMARY .....	380
	<b>REFERENCES</b> .....	<b>381</b>

# List of Figures

Figure 1.1 Channel Captaincy .....	4
Figure 1.2 Retailers And The Whole Supply Chain .....	8
Figure 1.3 Practitioner Experience: Bamber Stores; Granada TV Rental.....	15
Figure 1.4 Practitioner Experience: Tesco .....	18
Figure 2.1 Channel Captains: Stock J. Interview 2003.....	33
Figure 2.2 Channel Captains: Hollander S C. interview 2003 .....	34
Figure 2.3 Channel Captains: McCarthy E J. 1960 .....	34
Figure 2.4 Channel Captains: McCarthy 1981 .....	35
Figure 2.5 Channel Captains: Kotler 1988.....	36
Figure 2.6 Difference in European Distribution 1992 .....	45
Figure 2.7 European Distribution Strategies .....	46
Figure 2.8 Information Technology 1992 .....	46
Figure 2.9 Stock Days in Tesco 1970-2005 .....	53
Figure 4.1 Hazard Analysis Critical Control Points (HACCP).....	132
Figure 4.2 Shelf Life in Fresh Food in Tesco 1987-2004 .....	140
Figure 5.1 Retailing Supply Channels and Managing Change.....	148
Figure 5.2 Strategic Alignment Model (Gattorna 1998).....	149
Figure 5.3 The Whole Channel Competes (McCarthy 1981).....	149
Figure 5.4 Channel Captain (McCarthy 1960) .....	150
Figure 5.5 Coordinated Channel System (McCarthy 1981).....	151
Figure 5.6 Autocracy, Democracy, Anarchy (Mallen 1963).....	152
Figure 5.7 Democracy Summary (Mallen 1963).....	152
Figure 5.8 Retailer as Channel Leader (Mallen 1963).....	153
Figure 5.9 Retailer as Product Innovators (Moyer 1975).....	154

Figure 5.10 Associative Relationships (Dawson 1990) .....	156
Figure 5.11 Function to Process (Christopher 2003) .....	158
Figure 5.12 Partnerships (Christopher 2003) .....	159
Figure 5.13 Collaboration Diagram (Spekeman 1998) .....	160
Figure 5.14 Collaboration and Networking (Spekeman 1998).....	160
Figure 5.15 Supplier Relationships – Benefits (Hines 2002) .....	161
Figure 5.16 Power and Competition Analysis (Porter 1980) .....	162
Figure 5.17 Adversarial – Collaborative. (Lonsdale et al 2002) .....	163
Figure 5.18 Model of Integrated Supply Chain Management (Hines 2004).....	164
Figure 5.19 Situational Leadership Style (Hersey and Blanchard 1977).....	166
Figure 5.20 Model of Negotiating Styles (Glaser and Glaser 1991) .....	169
Figure 5.21 Negotiating Styles: Interpersonal Skills (Glaser and Glaser 1991).....	171
Figure 5.22 Dominant Designer (Koehorst 1999) .....	171
Figure 5.23 Specification Buying (Kelley 1954).....	172
Figure 5.24 Integrative and Segmentalist Companies and Supply Chains.....	177
Figure 5.25 Route A: Change Position in Supply Chains .....	180
Figure 5.26 Route B: Changes Position in Supply Chains.....	182

# List of Tables

Table 1.1 Author Collaboration: Publications .....	21
Table 1.2 PhD Workshops And LRN Conferences .....	22
Table 2.1 European Top Grocery Retailers .....	37
Table 2.2 European Top Non-Grocery Retailers .....	39
Table 2.3 Types of Food Shopping Trips .....	40
Table 2.4 UK Grocery Retail Branding 2004 .....	42
Table 2.5 Major Retail Trends of the 1990s/2000s .....	43
Table 2.6 National Market Share .....	44
Table 2.7 Concentration in Retailing GB 1992 .....	45
Table 2.8 Implications of the Components of the 'Logistics Mix' .....	48
Table 2.9 Major Logistics Innovations by Multiple Grocery Retailers .....	52
Table 3.1 Tesco 2006 .....	61
Table 3.2 Warehousing Key Statistics 2005 .....	65
Table 3.3 The Distribution Effects of Consumer, Societal and Retail Change .....	69
Table 3.4 The Impacts of Composite .....	84
Table 3.5 Distribution Changes in Tesco in 1980s 1990s 2000s .....	95
Table 4.1 Retail Consolidation Centres 1990s .....	138
Table 4.2 Enhancements in Shelf Life – Tesco .....	139
Table 5.1 Situational Leadership Styles (Hersey & Blanchard 1977) .....	168
Table 5.2 Ten Supply Chain Characteristics .....	183
Table 7.1 Case Studies: Categories, Research Contact .....	214
Table 7.2 Case Studies: Structure, Description, Analysis .....	215
Table 7.3 Twenty Tesco Case Studies .....	216
Table 7.4 Case Studies Category A: Specific Products .....	217

Table 7.5 Case Studies Category B: Broader Developments .....	244
Table 7.6 Case Studies Category C: Capacity & Control .....	260
Table 7.7 Case Studies Category D: Technical & Design .....	278
Table 7.8 Case Studies Category E: International .....	295
Table 7.9 Key Characteristics: Analysis of the Cases.....	305
Table 8.1 Scale of ‘Leader – Not a Leader’ Roles.....	309
Table 8.2 Scale of ‘Leader – Not a Leader’ Roles: Case Studies.....	311
Table 9.1 Global and International Grocery Retailers .....	379

# Chapter One

## Introduction

# 1 Introduction

There are times when someone is speaking or writing that they capture the essence of a topic in a short phrase, they swiftly get to the kernel of the task, they illuminate the subject and it then becomes obvious for all to see and understand the point that is being expounded. Such was the moment when my tutor, Leigh Sparks, wrote: “*Retailers are the channel captains and set the pace in logistics*” (1998). This, I thought was it, a succinct phrase that puts across the key message of my operational experience in retail distribution operations.

This raised the level of my awareness of the operational role that, for more than a decade, I had been doing for a major UK multiple food retailer. It challenged the boundaries of my thinking about that role. It transformed my view of it from ‘just doing a job’ to a deeper awareness of being part of a much wider team, the supply chain team. I saw my operational experience in a new light. It made me ask myself whether, by finding a way of putting it into the academic arena, my operational experience could help other people understand the channel perspective more easily. It would be available for researchers in the future to use as a picture of what it was really like at the time. This thesis is the result.

This chapter is the Introduction to the thesis. It provides information that is relevant to the aim of the thesis, (section 1.1); the manner in which it is approached by the author; the implications and consequences of that approach for the style and methodology (section 1.2); and finally, an explanation of the thesis chapters and the logic of the sequence in which they are positioned (section 1.3). Although this thesis is submitted in 2006, its origins and starting point go back over a good number of years to

1997. The reasons for the extended length of time and the consequences on the contents of the thesis are explained in section 1.2. This makes the first chapter longer than might normally be expected, but it is intended to cover issues that might arise as unexplained queries during the reading of the main script itself. This Introduction, therefore, needs to begin by explaining the nature of the thesis; its aim, objectives and intended contribution to academic and practitioner knowledge.

## 1.1 Thesis Topic, Aim, Objectives, Contribution

This PhD is that attempt to bring the strength of live logistics operations experience within a retailer into the arena of academic debate and so provide a critical reassessment of a topic, such as logistics or supply chain, that some might consider a mere Cinderella alongside the serious commentaries on retail and marketing. The process of defining the topic is an important first step in moving forward and setting the boundaries of the research. The initial interest in the evolution of the retailers' role in the supply chain followed on from some earlier academic study by the author.

## 1.2 Topic, Aim

The journey began while the author was doing his MBA at Stirling University in 1990 – 1992. One of the textbooks from the course included a reference whose significance was not appreciated at the time. Buried in that text in brackets is the term 'channel captaincy' (Figure 1.1). Although at the time it passed unnoticed, its importance surfaced later, when considering the topic for this thesis in 1997. That 6<sup>th</sup> edition, (Davidson, Sweeny, and Stampfl 1988) encapsulated a period in time when the balance of power in the manufacturer – retailer channel was in the process of changing. The context is the American manufacturing and retailing scene and the data that it is based on; the top fifty retailers by sales volume in 1984. That context had different



characteristics from the retailing scene in the UK approaching the millennium. It was that contrast, which led the author to start reflecting on a whole series of questions that could be asked, investigated and researched about the nature of that entity, which controlled the channel and the dynamics of change, over a longer time frame. Later in the thesis these issues will be taken up. This was a first component of the thinking about the thesis topic.

From a retail perspective, the concept of a channel is important since it recognizes the linking of typically independent businesses (except in vertically integrated firms) into a functioning whole. Questions of control and power (**channel captaincy**), cooperative methods, and conflict resolution pepper the marketing literature concerning channels. Although many marketing texts explicitly or implicitly assume a manufacturer marketing perspective, the present reality is one of large retailers (see Figure 1-3, p10) with strong local, regional, or national market dominance controlling distributive entry to major consumer markets.

Source: Davidson et al 1988, p58 [Emphasis added]

### Figure 1.1 Channel Captaincy

The second component of the thinking about the thesis topic relates to the author's practitioner logistics experience in retail and at what level to pitch the research investigation. One option is to examine the dynamics of channel change at the level of the logistics operation. It was this matching of the author's experience and the academic reflection that: "*Retailers are the channel captains and set the pace in logistics*" (Sparks 1998), which had fired the author's imagination. A little further reflection, however, revealed a broader and deeper level of research over a longer timescale, that also flows out of the author's operational track record. It is a level that stretches the author's natural research horizon. But, it can bring about a valuable and lasting contribution to the academic literature from a retail logistics practitioner. The level that presents itself is that of the retail supply chain change and the retailer's role in making it happen and in leading it; in effect being the 'channel captain'.

The result is the thesis **Title**: *'The role of Retailers as Channel Captains in retail supply chain change: the example of Tesco'*. A broader, deeper and more demanding research task, which is set firmly within the contemporary debate about the nature of supply chain relationships and practitioner initiatives, such as Efficient Consumer Response. This sets the perspective on the research task and aim.

The thesis **Aim** is: *'To examine the role of Retailers as Channel Captains in retail supply chain change using the example of Tesco'*

The aim drives the formulation of the research objectives. The objectives shape the methodology and the approach that is needed to conduct the research; and to ensure that, by the end, the thesis provides a good quality contribution to the academic and practitioner knowledge base.

### **1.2.1 Objectives**

There are three objectives for the thesis. The first objective is to investigate the origins of the concept of Channel Captain. The second objective is to consider the selection of Tesco from among modern European retailers to be an example of a Retailer acting as a Channel Captain. The third and main objective is to examine the role and behaviour of a retailer acting as a Channel Captain. What then, is the thinking behind choosing these objectives and what challenges do they pose for the researcher? In order to expand on the explanations, it will help to go back to some of the basic building blocks of the title of the thesis and explore their implications.

### 1.2.1.1 *Channel Captain: Origins*

At first sight, there is one building block in the title that stands out as unusual, as unexpected, even somewhat out of place in the modern UK retail supply chain and logistics operating environment. It is the concept of a 'Channel Captain'. It is not used in everyday conversations. Certainly, the author did not use the term 'Channel Captain' during his retail logistics working life with any of the parties in the supply chain. In fact, it might have appeared rather eccentric and odd if he had. Nonetheless, the concept of Channel Captain can be understood quite clearly and might be expressed in everyday conversation as leadership or deciding the policy or having the power and influence to make things happen in the supply channel. It does convey the notion of the strength of character and the quality in depth that can exist in a well organised and strongly motivated team, which is then able to achieve more demanding goals than would be possible from a fragmented and disorganised group of isolated individuals or functions or companies.

But, there was that other critical factor, namely, the evidence that it had been used in American manufacturing and even retail marketing channel literature, as illustrated above in Davidson et al (1988). The fact that it had been used in America, even if not over here in the UK, posed a challenge for the UK based researcher. The task was to find out about the use and even the origins of the term 'Channel Captaincy' when it was not on our doorstep. Without a understanding of the way the concept was used earlier in the American literature, it would be difficult to use the concept to make comparisons with UK retailing and supply chain developments that are taking place. Hence, the first objective is to research the origins of the concept of Channel Captain and its use, application and meaning.

With this researched information about the origins and role of the channel captain in American marketing literature, it is possible to think about ways of applying that knowledge more broadly and even in a different geography and different time zone. How would that original role transfer across into the modern retail way of thinking about logistics and supply chain management? Would the characteristics that were found be of such a nature that they would sustain being transposed from America to Europe and across decades of time? Would those roles be closely related to a modern retail supply chain operation or the reverse? The results of the investigation can be used as a benchmark or milestone in the evolution of ideas about the changing relationship between businesses involved in the retail supply chain. If the measures were acceptable, then the next question would be to enquire if there are one or more retailers in Europe, who could be said to represent the modern day equivalent of a channel captain? This is the second building block of the thesis topic.

#### *1.2.1.2 Channel Captain: Retailers, Tesco*

The second objective builds on the achievement of the first objective. It is to consider if there are one or more modern European retailers, who are acting in the role of a channel captain. From the author's practitioner experience in UK retail logistics, there are several retailers, who contend for this role. They operate in a way that strongly suggests that they are in control of their supply chain from supplier to store. This view is shared by other senior practitioners as evidenced by the excerpt in Fernie and Sparks (1998), which included an observation by Christensen who, at that time, was Logistics Director, Safeway Stores (Figure 1.2). If there are several retailers who fit the profile of being a channel captain, it poses the question, which to select as an example. Given the authors operational record with Tesco, which is now the number one grocer retailer in the UK, it was the obvious choice.

**Christensen** argues that a further step change is needed by all logistics managers if additional costs are to be squeezed out of the supply chain. In the 1980s most retail companies were primarily concerned with physical distribution management and the management of stock from RDCs [Regional Distribution Centres] to stores. Now, retailers are focusing upon the **whole supply chain**, seeking to also reduce inefficiencies in primary distribution through closer collaboration with suppliers and logistics service providers, and to manage logistics supply better to the final customer. The academics and trade press have been quick to embrace the new jargon of the 1990s – quick response, efficient consumer response, category management, continuous replenishment, and so on. In essence, relationships are the key; the whole supply chain has to be visible in that an efficiency gain in one part of the chain is not negated by imposing additional costs on other parts of the chain. Retailers are in competition as retailers but also as supply chain relationships and partnerships. [Emphasis added]

Source: Fernie and Sparks 1998, pxiv

## Figure 1.2 Retailers And The Whole Supply Chain

### 1.2.1.3 Channel Captain: Role & Behaviour

The main objective of the thesis is the third objective, which is to examine the role and behaviour of a retailer acting as a channel captain in retail supply chain change. It is a very important building block of the thesis topic, because it will provide the evidence upon which to make evaluations, conclusions and recommendations. The objective has four parts, which will provide different points of view and levels of investigation. A little explanation is required in order to understand the relationship of these four parts in this objective. The first two parts cover two aspects of the role of being a channel captain in retail supply chain change. They are a result of the major physical components of the retail supply change. The first is the outbound deliveries from distribution centres to retail stores, which is called retail logistics. The second is the inbound deliveries from suppliers into the distribution centres, which is described in various ways, but in this thesis it is called the supply channel. The third part of the objective is about change in the retail supply chain; managing change, initiating change, and the dynamics of the parties involved in retail supply chain change. The fourth part of the objective is to obtain an insider view from each of these three aspects. This in depth research is intended to reveal more clearly the quality of the behaviour of the channel captain.

Once this third objective is achieved it is then possible to conduct an evaluation and draw out the conclusions and recommendations. So far, the items covered are the thesis topic, its title and the rationale for the selection of the four objectives. The overall aim is to create a higher profile for the concept of channel captain and to provide some depth of exposition of the retailer's role and behaviour in leading retail supply chain change. The value of all this has to be assessed in terms of the contribution this research provides to both the academic and the practitioner knowledge base. This should be something unique, something new, something refreshing; something that helps move the debate forward for both academics and practitioners.

### **1.2.2 Contribution**

The main assessment of a thesis is the quality of the contribution that the thesis makes to the body of knowledge among academics and practitioners. It is essential that it contributes to the topics under debate. It may be contemporary, it may be historical, but it should fit in by moving that debate forward. This leads to a series of questions about the desired contribution that might arise as a result of this thesis. What is that wider debate about, where has it come from and where is it going? What is unique or special about the thesis research and is that a matter of originality of content; does it help answer a question that everyone is searching for? Which of these applies to this thesis? It is worth examining some of the issues surrounding the thesis topic over the extended length of the research period.

The types of issues that have been raised are primarily about the retail supply chain management structure and the changing relationship with suppliers,

manufacturers and producers. They cover the content, i.e. what is being done; and the behaviour, i.e. how it is being done. The content of what is being done, can be visible to external observers and internal practitioners. The behaviour of how it is being done is subject to a wider range of interpretations. One party's experience and expressing that experience may be quite different from that of another party, even when they are part of the same event. That experience is more personal, more subjective, more hidden from external view, even though it may have its external manifestations. The reason for the debate and the interest is that there has been a sea-change in the way the supply chain is organised and who is organising it. Making these matters more explicit, more visible is a contribution to that debate. Examining these matters in a new way, with fresh ideas, from a different perspective, is also a contribution to that debate. Sometimes it is worth testing concepts and ideas even if the end result is negative. The understanding of boundaries and what is appropriate or not appropriate is part of the debate and part of the contribution.

By the end of the thesis there should be sufficient information to deal with some specific issues. Although the types of issues that follow are not intended as comprehensive, they are an indication of the range of possible contributions from this thesis. Here are some questions. Is the channel captain concept valuable or not? Why or why not? What are retailers actually doing in terms of channel captaincy? What are the pros and cons of the concept of channel captain and of the activities the idea represents? What did the author learn that he did not know before? How can this learning be applied in business and in academia? What does the thesis tell us about management in the channel? Is it reliant on people, or companies, or good managers, or what? Was the retailer or retailers selected particularly special? Are the cases saying

more about those retailers than they are about the concept of channel captain? Can or do other retailers and / or suppliers do the same or learn from this?

It is intended that the contribution flows out of the aim of the thesis. It is taking an earlier concept, that of 'Channel Captain', from a different time and place and transplanting it into a very different business environment in the modern era. It is also a way of emphasising the power of the modern retailer over the supply channel and the suppliers. That shift in power balance has an impact on the relationship behaviour between companies and within companies. As this is a PhD with a practitioner orientation the contribution can also be at the level of the operational behaviour taken from real events. It is important to expand on the implications of this PhD, because that can influence some of the opportunities as well as limitations on the approach, methodology and style.

### 1.3 This PhD

The author is a practitioner, with twenty years operational experience in retail logistics. He is also interested in the academic dimension, but is not a full-time academic. His operational experience and academic interest influence some of the opportunities that are open when considering research and also conditions the boundaries and limitations in the approach, methodology and style. It is important to expand on the implications of this PhD with a practitioner orientation so that the reader is fully aware of these opportunities and limitations before embarking on the contents of the main thesis.



### **1.3.1 Part time PhD**

This PhD is on a part-time, distance-learning basis. The author is running a private business and Stirling University, being in Scotland is a long distance from the author's base in Bedford. When the author did his MBA at Stirling University in 1990 - 1992, that had also been on a part-time distance-learning basis. The author was working fulltime and based in Bedford. On the surface, a part-time distance-learning PhD seemed quite feasible. However, certain conditions were different. First, the level of research required for a PhD is quite different from that required for an MBA. Second, the author started his own private business, which brought with it demands on time and energy and a rather unpredictable workload. For example, the author might intend to complete certain research tasks over a designated period of time, but the pressures of the private business thwarted that academic goal. The other important consideration at the time of initiating this PhD was how best to get started. The proposal was that as well as having a main Supervisor at Stirling University, this would be supplemented by some help from a more local supervisor, in this case James Cooper at Cranfield University, but sadly he died about that time and the idea did not materialise.

These two factors combined to extend the length of time taken for the part-time PhD. The consequences of this extended time are explained in section 1.2.4.1 Limitations. The PhD was formally started in 1997 and the submission is in 2006, which is just over nine years. These dates are significant in terms of the literature being published and the real-time developments taking place in the retail supply chain. The other aspect, that can easily be overlooked, is that in 2006, everyone takes for granted the internet, email and broadband, online wireless access, even in airports, for so many things including academic literature. In 1997 these facilities were not so widespread

and the distance learning access, which is now fully developed in the academic world, was in its early stages of development and quite limited. Consider as well, just how much more literature resource has been digitally converted so that it is available on line, at the touch of a button. This is especially valuable for the earlier years of Journals and their informed articles that reflect the topics of earlier academic debate, which was the nature of the author's literary research. Clearly a full-time academic student researcher, based in a well-stocked university library in the late 1990's, would have an advantage in terms of accessing relevant articles and be able to follow up any leads suggested by other academic colleagues. Nonetheless, part-time, distance-learning PhD is the way this thesis has been accomplished, with all its limitations and foibles.

### **1.3.2 The Practitioner**

It was precisely the operational background of the author that was one of the good reasons, which was put forward by others, for the author to make his contribution. They invited the author to sit down and do some thinking and writing to increase his exposure and so bring his convictions into the academic arena for further scrutiny and debate. In this way, they said, the author can make a contribution to the academic literature on this topic and put something back into the academic pool. Hence, this operational background needs a little explanation and coverage. Then, those aspects that pertain to retail supply chain change can be understood and related to the topic of retailers as channel captains.

#### **1.3.2.1 *Transport and Logistics Professional***

The author is a professional transport and logistics operator, with twenty years experience in national retail companies. During the whole of that time he has also been a member, then a fellow, of the Chartered Institute of Logistics and Transport.

These two facts alone position the author firmly in the retail logistics sector, not only as an operator but also as a contributor to the professional institution. The fact that the whole of this experience is with national retail companies also places the author firmly in the retail camp in terms of his knowledge, skills, perspectives and views. There are two further very significant developments during this career history. The first is the transformation that has been going on in retail throughout that twenty-year period. The second is the transformation that has been going on in the transport and logistics profession over that same twenty-year period. Both dimensions of the operational experience have been like walking on a travelator in an airport. Not only has the individual been gaining in experience and skills but, at the same time, the business environment has also been evolving, developing and growing in stature, status and power. Naturally, everyone who has been involved in these industries during that period of time has experienced a similar evolution. They have both seen growth and success.

Looking at this from the outside, as an external observer and commentator, it can be very easy to make that type of observation. However, when a person is engrossed in the pressures of the day job, it is possible not to see the bigger picture. In the heat of operations, transport and logistics professionals may not see the whole supply channel from producer to retail or even think about the dynamics of the bigger organisational set up. The benefit of involving a practitioner in high level research, like a PhD, is that the person begins to see the broader picture in a completely different way. The experience is interactive. How? A small example might show how this can be interactive. Suppose an engineer designed a vehicle that could have two temperature regimes rather than a single temperature regime. The technical detail would be uppermost in that engineer's thinking, reflection and action. If that engineer were to see

the whole supply chain operating with dual rather than single temperature regimes, the perspective on that technical evolution might be transformed dramatically. Suddenly, all the transport utilisation efficiencies become visible. The way that this is interactive is that the engineer is then re-appraising that technical development in a completely new way, in a supply chain perspective. The point of the example is that, sometimes, it is only in the revisiting of that experience from a different perspective that the operator can recall, reveal, and explain that event in a new way.

The same applies to this thesis. When an operational event is recounted from a broader, perhaps a supply channel perspective, new insights, new emotions, new valuations come into play. It is as though they were there in a latent state, waiting to be released, but that would only occur in the light of a different vision or view of that event. That transformation in perception of an event is important. It helps when revisiting an operational career from that different perspective. Having explained this process, it is now possible to review the author's practitioner operational experience. This is summarised in Figures 1.3 & 1.4 from the perspective of the role of the retailer as the channel captain in retail supply chain change and highlight aspects that are particularly relevant to that thesis topic.

### 1.3.2.2 *Bamber Stores, Granada TV Rental: 1978 – 1984*

<b>Author's Practitioner Operational Experience</b>
<p><b>BAMBER STORES, 1978 – 1982</b> Barnet, Transport Manager</p> <ul style="list-style-type: none"> <li>• 220 High Street shops, women's clothing, national depot 90k sq ft,</li> <li>• Vertically integrated retailer, privately owned</li> <li>• Garments manufactured in London East End</li> <li>• Developed the transport capability to handle business growth</li> </ul>
<p><b>GRANADA TV RENTAL, 1982 – 1984</b> Bedford, National Distribution Controller</p> <ul style="list-style-type: none"> <li>• 462 High St Showrooms, £129m turnover, 5000 employees</li> <li>• UK operation vertically integrated, Manufacturer imports direct to depots.</li> <li>• Six depots, 86 staff, TV videos, £1.2m budget</li> </ul>

**Figure 1.3 Practitioner Experience: Bamber Stores; Granada TV Rental**

The first relevant operational experience, Bamber Stores 1978 to 1982, was in a privately owned, national women's clothing high street retailer, who had a successful retail formula and grew rapidly to 220 stores. It was a vertically integrated company with the garments being manufacturer by the rag trade, as it was known, in the East End of London, where there was warehouse for out of season stock. There would be daily collections from the various small garment suppliers into the single warehouse and head office in Barnet, North London, where the two entrepreneur owners were based. These garments were allocated to the branches, a push supply chain; loaded on the distribution vehicles and despatched around the country. There was very close contact with the retail staff in the stores. As the driving team was small, the role of transport manager was involved in the operation, managing everything from scheduling, dealing with the drivers, as well as the mechanical maintenance of the fleet. There was even time to get on the road, during the holiday season and have some direct contact with the retail high street stores.

The next company, Granada TV Rental, 1982 to 1984, was a public company with a strong brand, and a national chain of 462 high street showrooms. It had originated in the TV rental business, which is an example in itself of stimulating consumer demand and growing a business, all triggered by the Coronation in 1953. The organisation had an effective administration discipline, which was essential for controlling the TV and video assets in the rental market. The head office was in Bedford. The company owned the six depots and the fleet of vehicles as well as the team of technicians and their repair centres. The supply of product from Japan was very closely controlled and delivered direct into the depots around the country. The control over the assets was by individual serial numbers, which conditioned the warehousing

and transport delivery disciplines. The company culture was very professional, with strong administration; it was tightly controlled, even traditional; operating in a mature market that was nearing its end phase. There was very close contact with the retail staff in the showrooms. The retail logistics role, of national distribution controller, gave the author total responsibility for the six depots and the delivery of the goods to the high street showrooms. The transition from that culture to the next company culture was dramatic.

### *1.3.2.3 Tesco: 1984 -1998*

Tesco, from 1984 to 1998, went through major development and a dramatic evolution in retailing, logistics and supply chain. Even in the early 1980's the culture was dynamic and energetic rather than traditional or conservative. The two previous companies had a can-do culture and were confident in their respective market places, even though these were competitive. But at Tesco there was a step change in the level of that confidence and innovative energy. From the supply channel perspective it was a very fast moving environment, there was certainly no counting of serial numbers. Product came in and went out fast. There was a large team of warehouse staff and drivers. The distribution centre was large and the size of the transport fleet was big. There was very close contact with the retail stores and regional directors. This first role as a general manager of an in-house ambient grocery distribution centre gave the author a thorough experience of being at the heart of the supply chain, from suppliers to retail, from stock control to backdoor staff at the store.

The move in 1986 to contract distribution was a big contrast. If the grocery distribution network was completing its evolution, then the contract distribution network had just begun the journey of its transition. This role, divisional director, distribution, was national, required contact with commercial buyers, suppliers, retail

store operations, the retail directors. Throughout this time the contract distribution operators were on the receiving end of some major reorganisation initiated by Tesco, the retailer. The quality of this operational experience from the viewpoint of this thesis topic is exceptionally high. There is absolutely no doubt that it was Tesco the retailer that was initiating the supply channel changes that took place during my ‘watch’, to use a nautical term. There was no need to say “the retailer is the channel captain making the supply chain changes”; that was self evident to every company that was involved, from suppliers to logistics service providers, as well as the team at Tesco. Because the company was about to launch the Composite distribution network, all these changes and enhancements went unnoticed, except by those closely involved at the time. It was ‘well-hidden’.

<b>Author's Practitioner Operational Experience</b>
<p>TESCO 1984 – 1998</p> <p><i>General Manager, Crick Distribution Centre, 1984 – 1986</i></p> <ul style="list-style-type: none"> <li>• Regional depot 250k sq ft, serving 70 stores, 20m cases pa</li> <li>• 2000 lines fast moving consumer goods, 300 staff, £5m budget</li> <li>• Implemented new working practices in warehouse and drivers</li> </ul>
<p><i>Director, Contract Distribution, 1987 – 1990</i></p> <ul style="list-style-type: none"> <li>• 24 contractor depots, 2000 staff, 150m cases pa, 7500 product lines</li> <li>• Produce Groups: chilled, frozen, bond, ambient, budget £60m</li> <li>• Seamless transition from these single product depots to Composite 1989</li> <li>• Initiate, designed open book contracts from traditional case rates</li> </ul>
<p><i>Head of Composite Distribution 1990 – 1994</i></p> <ul style="list-style-type: none"> <li>• Composite: Up to five contract operated centres, including start up in 1989</li> <li>• Capability from 100m to 200m cases per annum, budget £70m</li> </ul>
<p><i>Head of Primary Distribution 1994 – 1997</i></p> <ul style="list-style-type: none"> <li>• Initiated primary distribution opportunities: £20m benefit on £250m</li> <li>• Plastic Tray throughput increased to 100m with suppliers</li> <li>• Best Practice Case Study No 364: saved 3m miles, 4600 tons CO2</li> </ul>
<p><i>Secondment: Special Advisor, Freight Logistics, DETR (now DfT) 1998</i></p> <ul style="list-style-type: none"> <li>• Best Practice material for sustainable distribution policy White Paper</li> </ul>

**Figure 1.4 Practitioner Experience: Tesco**

The Composite distribution contract operators provided their best teams to be involved in that brand new project. It was ambitious, opening seven composites in nine months in 1989. It was very energetic and demonstrated the high level of confidence that existed in the company, which believed in itself, in its retail strategy, in

its supply chain change. There was so much else going on at the same time. From a supply channel perspective, the significant aspect of composite was the temperature controlled fresh product and the very fast pace at which it flowed through the pipeline. Many of the practices that were later discussed as part of efficient consumer response were already happening in the fresh environment. That period of being in charge of composite operations until 1994, provided the author with leading edge experience of retail supply chain change.

The final phase is about primary distribution, starting with supplier logistics in 1991 and developing to a separate role and team until the changes in realignment between commercial, distribution and supply chain development in 1996. There followed a couple of years working with commercial division on the plastic tray rollout with suppliers, which provided an insight into another aspect of retail supply chain change. Throughout the 1990's it was Tesco the retailer that initiated and drove forward the supply chain change. It is this range of experience in retail transport, distribution, logistics and total supply chain change that this practitioner brings to this PhD thesis research. But there was also another side, which was the academic strand that intertwined with the operational.

### **1.3.3 The Academic**

The author has had the benefit of a long standing contact with his academic supervisor, Leigh Sparks. It started in 1985 when the author was interviewed by Sparks, with Tesco Director, Donald Harris. It was at the time he was the general manager at a Tesco grocery distribution centre. Five years later, Tesco sponsored several senior executives, including the author, to complete an MBA at the Institute for Retail Studies, Stirling University. The MBA dissertation topic was *'Integrated supply*



*chain management; the case of fresh produce in Tesco*'. It coincided with a proposal that the author made to the company about working on supplier logistics. This was later to become primary distribution. Thus, participating in that academic endeavour was a valuable contribution and also a key moment in the author's career development.

#### 1.3.3.1 *Author Collaboration*

As a result of completing the MBA, the author embarked on some academic writing. But there is a huge gulf between writing business reports and writing scholarly academic articles. In business, the emphasis is on brevity; the bottom-line; say it in a sentence. In academia, the emphasis is on explanation, examination, elaboration; all of which has to be properly documented and cross-referenced to other academic articles, journals, and books. It is said '*a picture paints a thousand words*'; the practitioner's view of academic writing is that they do not want the picture; they want the thousand words. Quite often a practitioner does not need a book to tell him what happened; he was probably there, making it happen. Hence it is a major step-change for a practitioner to become fluent in academic writing. However, what can help is a collaboration between a practitioner and an academic. The practitioner may provide the case study material and the academic may apply the literature cross-referencing. The author was fortunate to be able to engage in such a collaborative writing arrangement (Table 1.1). As a result there followed an extended period of writing in collaboration with Leigh Sparks on the topic of retail, logistics and related subjects. There were: articles for Journals (1993) and Conferences (2005), chapters in books (1998, 2004 a, b, c), and even co-authoring a book (2006).

One of the benefits from being involved in academic writing, especially when there is a mixture of practitioner and academic input is that it stimulates interest in

what others have written, especially in the same book. In particular those books that are compilations of different authors writing different chapters; such as ‘Retail and Logistics Management’ (1998, 2004) and Food Supply Chain Management (2004). It is natural to become familiar with the related topics in the different chapters.

Year	Author Collaboration: Publications
1992	Smith DLG (1992) <i>Integrated supply change management, the case of fresh produce in Tesco</i> . MBA dissertation, Stirling University
1993	Smith DLG and Sparks, L (1993) ‘The transformation of physical distribution in retailing: the example of Tesco plc’. <i>International Review of Retail, Distribution and Consumer Research</i> , no. 3, p35-64.
1998	Smith DLG (1998) ‘Logistics in Tesco’, in J Fernie and L Sparks (eds) (1998) <i>Logistics and Retail Management</i> , chp. 8, pp. 154-183, London, Kogan Page.
2004	
a	Smith, DLG., and Sparks, L (2004) ‘Temperature controlled supply chains’ in M Bourlakis and P Weightman (eds.) <i>Food Supply Chain Handbook</i> , chp. 12, pp. 179-2198, Oxford, Blackwells.
b	Smith DLG and L Sparks (2004) ‘Temperature-controlled supply chains’, in J Fernie and L Sparks (eds) <i>Logistics and Retail Management</i> , 2 <sup>nd</sup> edn., chp. 7, pp. 121-163, London, Kogan Page.
c	Smith DLG and L Sparks (2004) Logistics in Tesco: past, present and future, in J Fernie and L Sparks (eds) <i>Logistics and Retail Management</i> , 2 <sup>nd</sup> edn., chp. 6, pp. 101-120, London, Kogan Page.
2006	Gustafsson K, Jonson G, Smith DLG and Sparks L (2006) <i>Retailing logistics and fresh food packaging: managing change in the supply chain</i> , London, Kogan Page.

**Table 1.1 Author Collaboration: Publications**

The author now feels a lot more comfortable with the process of academic writing that is necessary to complete this thesis. The collaborative work on the articles, chapters and book has provided sufficient practice. There have been other ways of keeping in touch with the academic community, through attending conferences, giving presentations to executive programmes at Stirling University and to practitioners in UK, Europe, Asia and America.

### 1.3.3.2 Logistics Research Network Conferences, UK

The author has joined in academic conferences as much as practical. The Logistics Research Network Conference, which is held in September, is the major academic logistics and supply chain conference in the UK. (Table 1.2) They have provided him with the opportunity to meet leading academics and interview them about

the thesis topic. For example in 1999, Martin Christopher (Cranfield); 2000, Dan Jones, Peter Hines, (Cardiff), Michael Browne, (Westminster); 2001, Alan McKinnon, John Fernie (Heriot-Watt), 2002, David Menachof, (London); 2004, David Grant, (Heriot-Watt), 2005, Steve Burt, John Dawson.

Year	PhD Workshops & Logistics Research Network Conferences
1999	Morpeth, Keith Smith,
2000	Cardiff, Peter Hines, Future Challenge in Supply Chain Management
2001	Heriot Watt, Alan McKinnon,
2002	Aston, Birmingham, John Griffith, Collaborating for Innovative Supply Chain Solutions
2003	Turku, Finland, Case Study Workshop Week, NOFOMA, James Stock, ß
2003	European Logistics Association: PhD workshop France, Herbert Kotzab
2004	Dublin, Edward Sweeney, Enhancing Competitive Advantage through Supply Chain Innovation
2005	Lund, EAERCD, [European Retail Conference] joint paper: Plastic Trays in Retailing: The Challenge of Implementing Change in Packaging Logistics, Sparks, L, Gustafsson, K, Jonson, G, Smith, D.
2006	Newcastle, Michael Bourlakis, Sustainable Logistics in an Intermodal Setting

**Table 1.2 PhD Workshops And LRN Conferences**

In addition there is a short PhD workshop held before the start of the conference, organised by Tony Whiteing, (Leeds), which the author has attended regularly. It has provided a touch of realism as to what can be achieved in a PhD and brought him in contact, over the years, with the full range of student researchers. There is one special residential weeklong PhD workshop held just north of Paris, organised by the European Logistics Association. The author was accepted to join this in 2003, lead by Herbert Kotzab (Copenhagen) and assisted by Alan Harrison (Cranfield), Marianne Jahre (Norway), Steef van de Velde (Erasmus). This was a week of intense work with a small group, less than twenty, and provided the author with valuable feedback on the thesis content and style. Prior to this in January 2003, there was a Case Study Workshop lasting a week at Turku, Finland, organised by NOFOMA and assisted by James Stock from USA. All these events provided motivation and feedback on the limitations and strength of a practitioner setting out on a PhD thesis.

### **1.3.4 Limitations & Strengths**

Any author of a thesis has to be aware of the limitations and strengths of the particular research conducted and be able to share that assessment with those reading the thesis.

#### **1.3.4.1 *Limitations***

The circumstances of this thesis have been described earlier. They account for two limitations. The first limitation arises from the extended period for conducting this thesis research; the second limitation arises from the author's practitioner background. As regards the first limitation; a thesis needs a base from which to start. This is particularly important for the literature review. This raises a difficulty: what was contemporary at the beginning, in 1997, is now superseded by subsequent academic writings. Using a document from 1997 or 1998 as a base, would appear to a reader in 2006 as rather dated. The second limitation is that the author's practitioner operational experience with Tesco ended in 1998. The company has continued to develop its logistics and supply chain strategy during the intervening years. The dilemma facing the author is how to address these dichotomies with credibility. It is considered prudent to raise these issues in this introductory chapter, so that the reader is in touch with the real circumstances that condition the writing of this thesis.

The proposed approach is to limit the periods covered by the literature review and the operational experience of the practitioner author. For the literature on modern logistics and supply chain management, the period would be between 1997 and 2004. This will be in the style of a practitioner reflecting on the literature, rather than a more classical academic literary review. The investigations into the origins of the

concept of channel captaincy are in a much earlier period of time. The operational time span is limited from 1984 to 1998, for direct experience by the author; supplemented by further investigations up to 2004. The anticipated benefit is that a moderate amount of distance in time from events can help revisit those events with a more detached and reflective perspective. Having been candid about these limitations, it is now important to emphasise some strengths.

#### **1.3.4.2 Strengths**

There are two main strengths in this research. The first is that the thesis topic has had time to strengthen or weaken since 1997. This will assist the process of evaluation of the contribution that will take place in the final chapter. The second is that the cases selected are real events, and more importantly, are chosen from a critical phase in the development of the retail control over the strategy and shape of the supply chain. The author's practitioner's operational experience bridges the transition from manufacturer control to retailer control.

### **1.4 Thesis Structure**

The writing of the thesis is intended to follow the logic of the building blocks of the thesis objectives. The concept of the Channel Captain is central to this thesis. It is not a term that has been in use during the period of the literature review of 1997 to 2004, nor was it in use immediately prior to 1997. It is the re-introduction of an old idea from a different time and place. The reader will be left in suspense unless the concept is explained at the beginning, in Chapter Two.

### **1.4.1 Chapter One: Introduction**

Chapter One is the Introduction to the thesis. It provides information that is relevant to the aim of the thesis and the manner in which it is approached by the author. It explains the implications and consequences of that approach for the style and methodology adopted. Finally, there is an explanation of the logic of the sequence of the chapters. The thesis had its origins a good number of years ago in 1997 and is being submitted in 2006.

### **1.4.2 Chapter Two: Channel Captain: Origins; Retailers; Tesco.**

Chapter Two has four parts. The first part investigates the origins of the channel captain concept. It sets out to help the reader with an understanding of the origins of the concept of channel captain. There is little contemporary literature on this specific topic so the author cannot presume that its meaning is self evident. The author decided to make a visit to America in 2003, to Michigan State University. He met and interviewed Professor Stanley C. Hollander, who sadly has since passed away. This provided valuable information about the background and recommendations for literature sources on the origins of the concept of 'Channel Captain'. The second part is a consideration of the modern retailing environment. It is a review of the major drivers that have influenced the evolving shape of retailing, especially food retailing, into the modern scale of international operations. This growth in market scale has brought retailers into a position of dominance over their suppliers. The third part is the identification of those retailers who are acting as channel captains from which this thesis takes the example of Tesco. The fourth part is an introduction to UK grocery retail logistics. Behind the retail revolution there has been a revolution in distribution and logistics. This provides the background for the more detailed of study of Tesco supply chain development in chapters three and four.

### **1.4.3 Chapter Three: Tesco Retail Logistics**

This extended case study of Tesco is the topic of the next two chapters, which cover the role and behaviour of the leading grocery UK retailer, acting as channel captain in retail supply chain change. It is an account of the phases of transformation of the Tesco physical distribution system that provided the retailer with a competitive advantage. Behind the retail revolution there had been a revolution in distribution and logistics. The principal theme of chapter three is the Tesco involvement in retail logistics, which is the assembly of goods in regional distribution centres and their delivery to the retail stores. This is examined first because historically it is the segment of the supply chain over which retailers chose to start to establish their control.

### **1.4.4 Chapter Four: Tesco Supply Channels**

Chapter Four continues this two-chapter study of the Tesco supply chain development. It investigates the next segment of the supply chain that Tesco took control over. This is the inbound movement of goods from suppliers to the distribution centre. The transport activity is called primary distribution. This transport activity cannot be reorganised in isolation from broader supply chain developments. The chapter includes a general introduction to the Efficient Consumer Response movement in the UK, which promotes collaboration between retailers and suppliers on supply chain development. In this thesis the term supply channel is used to refer to this supply chain activity. There are several supply channels in modern retailing. This reflects the broad product groups that are to be found in a large retail store. The author had experience across a range of these supply channels. The chapter examines the processes of one particularly complex and intricate supply channel: that of temperature controlled fresh food. This is selected in order to demonstrate the high degree of sophistication of

the retail leadership and implementation of retail supply chain change. These two chapters about the Tesco supply chain development are the operational context in which to assess the main ideas from the literature about supply chain change that are presented in chapter five.

#### **1.4.5 Chapter Five: Managing Supply Chain Change**

Managing Change within Retail Supply Channels is the theme of chapter five. In the complex and demanding new discipline that the retailers were entering, survival and progress required a special approach in their change management style. This did not come readily to retailers nor did suppliers find the shift in the power balance easy to acknowledge let alone accept positively. It is from this changing dynamics in the supplier – retailer power base that the role of a channel organiser, leader or captain emerged. The chapter steps through the issues from the literature around change management in supply chains, models of leadership and negotiating and the implications of these for the role of channel organiser, leader or captain.

#### **1.4.6 Chapter Six: Methodology**

Normally the chapters on the literature review and methodology would be positioned earlier in a thesis. However, the nature of the thesis topic with Tesco as an example necessitated a modification to the standard approach. The earlier chapters have provided a context, which is the retail logistics industry and the developments within Tesco. Chapter five assembles the main ideas, concepts and constructs from the literature. The real focus of the research is the series of twenty case studies in chapter seven. These are based on the author's operational experience. The style of the research is involvement in influencing the change itself. This leads to the choice of the methodology for this longitudinal study of Tesco supply chain development as



Participant Action Research. The chapter includes a consideration of the application and suitability of this method of research and of the case study research process.

#### **1.4.7 Chapter Seven: Case Studies**

Chapters, three, four and five have covered major topics in the evolution of retail supply chain change. This is the background for the cases in chapter seven. One objective is to obtain an insider view through some in-depth research that is intended to reveal more clearly the quality of the behaviour of the channel captain. The external changes were self evident to observers. The research in this thesis is an exploration of the internal experience that occurred during the various phases of transformation taking place in British food retailing. It was decided that an effective method to illustrate this would be to present a range of appropriate mini-case studies based on the direct experience of the author, which are documented in chapter seven.

These cases are real events revisited with the benefit of a different perspective. It is a revaluation from the perspective of retail supply chain change and the role of the retailer as the channel captain. These real events are from a critical time in the transition of the power balance from manufacturers to retailers. The focus was on the control over the middle ground, which is the supply chain. These twenty case studies are an indicative rather than an exhaustive selection. They throw some light and insight on a range of actual events that took place over a period of more than a decade. They include some personal reflection on the big changes in retail supply chain change. Some of the cases that are included would not have been visible to external observers. This chapter is an in-depth review of real events. .

#### **1.4.8 Chapter Eight: Case Study Analysis**

The conclusions from these case studies are assessed more fully in chapter eight within the framework of the theories that had been expounded in the earlier chapters. The critical success factors for a channel captain in retail supply chain change are similar to those in most major changes in businesses. This highlights that good quality businesses have the potential to be channel captains of their retail supply chains.

#### **1.4.9 Chapter Nine: Conclusions and Recommendations**

Chapter Nine summarises the thesis and identifies the main contributions to academic and practitioner learning. For the academic, there has been value in taking an earlier concept from a different country, time and setting and placing it in the midst of a very challenging, modern retail business environment. For the practitioner, there are a number of retailers who now act as channel captains, in a similar manner as detailed in this thesis. The author reviews the limitations of the thesis and the opportunities for future work. These are applications that can be made in both developed and emerging markets. These are grouped; first, greater depth with further study of Tesco; second, regional breadth examining applications to other European retailers and suppliers, and third, global and international retailers and those suppliers who are looking to supply the UK and other European retailers. These fields of further research support both the academic and the practitioner.

### **1.5 Summary**

The purpose of an Introduction is to provide the reader with all the important components that they need to know about before embarking on the main body of the thesis. This chapter has detailed the thesis title, its aim, objectives, and intended contribution to body of academic and practitioner knowledge. There was important

information about the author's practitioner and academic experience. This influenced the manner and scope of the research. One benefit was to maximise both the practitioner experience and the academic strengths of the Institute for Retail Studies at the University of Stirling. There has been an explanation for the logic of the structure, the sequence and the content of the chapters in the thesis.

# Chapter Two

Channel Captain:

Origins, Tesco

## 2 Channel Captain: Origins, Tesco

This thesis will argue that retailers are the channel captains in retail supply chain change. It will provide some depth and breadth to the subject. This chapter examines the origins of the concept, which provides a foundation of the rest of the topic. It then considers the retail trends that have brought about the increase in the power of the retailers. The role of retailers in the consumer economy is powerful because they have a broad operating scale and strong financial turnover, which is derived from their closeness to the consumer. But, behind the retail revolution there has been a logistics revolution. This leads onto the link between retail and logistics. The strategic issue is whether retailers regard the supply chain as a competitive advantage or merely a method of getting product from the supplier to the store. Those that regard the supply chain as a strategic issue possess one of the necessary qualifications for being a channel captain. This is the broad industry and European setting for the more detailed study of Tesco as an example of a retailer that is a channel captain in retail supply chain change. A theme that is covered in depth in chapters three and four.

### 2.1 Origins

As a result of the author's research in America in 2003, meeting experienced retail and supply chain academics, an interesting view emerged about the origins of the concept of channel captain. The visit had become necessary because there was scant contemporary European literature on the concept of Channel Captain. In Efficient Consumer Response there is use of the title captain in current retail and supplier relationships. However, it is used on the manufacturing or supply side as Category Captain. The category captain is the lead supplier to a major grocery retailer, who organises the second tier suppliers to provide a comprehensive set of products

within a category range. But the author's search was for some reliable academic account of retailers as channel captains in America. The term is no longer used although it had been in the past. Stock recalled its use with an emphasis on the strength of control that the retailers as channel captain exercised. This he expressed as 'benevolent dictator' (Figure 2.1).

<b>Source &amp; Quotations: Channel captains: results of American research 2003</b>
Most people define the channel captain as 'that entity of the distribution channel that exercised <b>control</b> over the other member'.
That notion predates vertical marketing systems. The early literature on channel power control, where the channel captain concept comes from, pre-dates the systems perspective that was developed later.
Most of the significant literature is in the 1960's and 1970's or even earlier in 1950's. Some of the literature looked upon the channel captain as a <b>benevolent dictator</b> . In the 1930's the manufacturers dominated most channels.
The literature died out in 1980's, it became one of those issues the we know enough about and we don't need to know any more. [Emphasis added]

*Source:* Stock, James. Author interview, January 2003

**Figure 2.1 Channel Captains: Stock J. Interview 2003**

It was during that conversation with Stock that he put the idea into the author's mind to visit Stanley C Hollander, who sadly has since passed away. He had spent some time working during the mid 1930s in the stock room of a wholesaler providing sweaters to Sears Roebuck. He explained how the business was so dominated by Sears that when the buyer visited the wholesaler he went behinds the boss' desk and the boss took the visitors chair. *"It was clear who was the channel captain in that situation. Yet this man lived a happy middle class life under that situation"*. This is the background he related when the author asked about the origins of the concept of channel captain. His academic contribution to the author on the topic was invaluable. He pointed to an article on 'Specification Buying' by his contemporary, William T Kelley (1953) written after he had spent a summer at a Sears Roebuck private label supplier. It was the first academic discussion on the topic.

It goes back much farther than normally believed. The very **big retailers**, Sears Roebuck, K.C. Penny & Company, people of that sort very frequently **dominated** their suppliers, it was pretty clear who was the **channel captain**.

You see in the retailing field we looked up to and admired the retailer, whatever they did was considered right and good; there was a certain amount of hero worship, rather than critical judgement. I think that some of the **economic** literature might have taken up that issue but they **would not have expressed it as channel captaincy but as control and domination**.

One of the earliest places it showed up was E.J. McCarthy's Marketing Textbook. That was quite a revolutionary book, it was the first textbook that took a managerial point of view with a different orientation from other books. It had the four Ps, **McCarthy coined the term channel captain**, but he saw the **manufacturers** as the channel captains and I think the literature went that way.

The growing importance of Walmart, as a really national chain, drew attention to the dominant role of the retailer over their suppliers. Both Walmart and KMart turned over the role of channel captain to a category captain, to an outsider. Walmart appointed a team of their brightest people for that, K Mart turned over their most marginal people – the results showed up. [Emphases added]

Source: Hollander, S. Author interview, May 2003

**Figure 2.2 Channel Captains: Hollander S C. interview 2003**

Hollander explained that one of the earliest places the concept of the channel captain appeared was in Edward Jerome McCarthy's Marketing Text book (Figure 2.2). He described it as a quite revolutionary book. It was the first textbook that took a managerial view. He coined the term channel captain, but he saw the manufacturers as the channel captains and the literature went that way.

#### **D5 Transporting, storing and financing**

Transporting, storing, and financing are basic marketing functions, which must be provided throughout most distribution channels. They are of common concern to nearly all channel members.

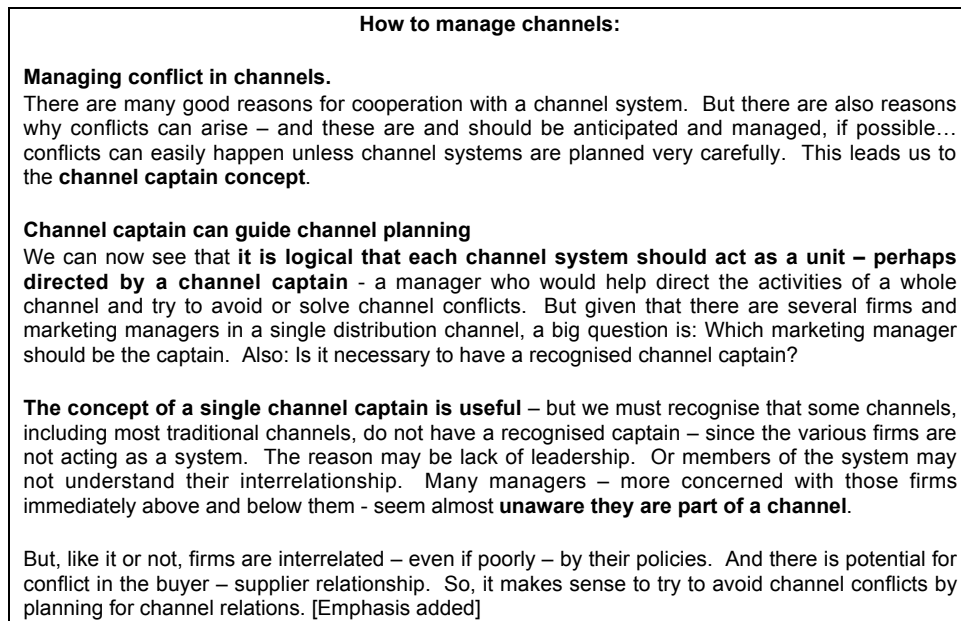
When a **channel captain** is developing Place policies, he must consider how these functions are to be divided within the channel. Assuming that the **team captain** is a manufacturer, he may have already decided to use some type of wholesaler and retailer, but this does not automatically decide how the functions of transporting, storing, and financing are to be shared.

These functions are vitally important to Place, since they are required in the production of time, place, and possession utility. Their interaction with the other three P's – especially Price for the cost of the service and Product for the service itself – must be born in mind. [Emphasis added]

Source: McCarthy 1960 p429

**Figure 2.3 Channel Captains: McCarthy E J. 1960**

McCarthy described the role as primarily about developing Place policies and considering how these functions were to be divided within the channel. (Figure 2.3). He assumes that the channel captain is a manufacturer.



*Source: McCarthy and Brogowicz 1981 p351-6*

**Figure 2.4 Channel Captains: McCarthy 1981**

The concept gradually evolved and in the 1981 7<sup>th</sup> Edition (Figure 2.4) he argues that it is logical that each channel system should act as a unit, perhaps directed by a channel captain. This illustrates the power of the channel captain concept. It directed the minds of the marketing students and practitioners of that era to view competition from a channel perspective not just as a company rivalry. This introduces a higher strategic vision to the marketing channel. The concept had an evolving life span in marketing textbooks in 1960's, 1970's and 1980's and 1990s with Kotler P., who wrote about the channel captain concept from his 1967, 1<sup>st</sup> edition through to the 1994, 8<sup>th</sup> edition.

In his 1988, 6<sup>th</sup> edition (Figure 2.5) Kotler emphasises that the channel captain is the dominant member of a particular channel, the one who organizes it and leads it. But he is firmly of the view that it is the manufacturer taking that role. There was recognition that players other than the manufacturer could become channel



captains, the middlemen and such retailers as Sears Roebuck. There was also the observation that some channels do not have a leader because the various firms were not acting as a system. These developments are given further clarification in chapter five on managing supply chain change.

Another important role is that of *channel captain*. **The channel captain is the dominant member of a particular channel, the one who organizes it and leads it.** For example, General Motors is the channel captain of a system consisting of a huge number of suppliers, dealers, and facilitators. The channel captain is not always a manufacturer, as the examples of McDonald's and Sears indicate. Some channels do not have a channel captain in that each firm proceeds on its own.

Some amount of vertical channel conflict is inevitable, and the problem is not one of eliminating it but of managing it better. There are several mechanisms for conflict resolution:

**Channel captain leadership.**

If one channel member acquires leadership and earns the **trust** of other members, it can set the tone that will reduce the potential for conflict and resolve conflicts more quickly. [Emphasis added]

Source: Kotler 1988, p550-1

**Figure 2.5 Channel Captains: Kotler 1988**

The benefit of investigating the historical roots of the concept of the channel captain was to gain an insight into that era of American business life when team play and leadership were clearly values instilled into the young graduates coming through college and into business. It had a special ethos about it and the language is straightforward and direct, although the actual business turmoil going on was probably quite pressurised. One of the strengths of the channel captain concept was to create an awareness amongst independent parties in the marketing channel that by uniting together they could compete as a channel with the large integrated corporate companies that controlled these functions in - house. Physical distribution was part of the marketing function.

The role of the channel captain involved several tasks. The most important task was to plan the allocation of responsibilities in the marketing channel. A correlated task was the coordination of the marketing, distribution and channel functions. One

task that required the right approach was to resolve conflict between members of the channel by harnessing the energy from their different points of view. An outward looking task was to provide leadership in marketing awareness. The channel captain needed to gain the trust of the other channel members. It was necessary to provide the support to help members see the benefits of acting together as a united marketing channel. In this way their action was for the good of the whole, through sales growth to satisfied consumers. The role and motivations of a channel captain exist in modern retailing. The terminology may be different but the intention is to promote the whole business channel. This provides one base for this research. The other base is the role of the retailers in their primary task of retailing and the various retail trends.

## 2.2 Retail Trends

Rank	Company	Origin	Sector	Yr End	Sales in €bn	
					2003	2004
1	Carrefour	France	groc	Dec	61.23	62.85
2	Tesco	UK	groc	Feb	40.65	45.62
4	Aldi	Germany	groc	Dec	31.60	na
6	Edeka Group	Germany	groc	Dec	29.58	29.78
8	Schwarz Group	Germany	groc	Feb	27.95	na
9	E Leclerc	France	groc	Dec	23.30	na
10	Auchan	France	groc	Dec	22.56	na
12	J Sainsbury	UK	groc	Mar	20.54	21.97
14	Wm Morrison Group	UK	groc	Jan	19.5	17.85
19	Ahold Group	Netherlands	groc	Dec	12.98	13.05
20	Système U	France	groc	Dec	12.53	13.35
24	Cora/Louis Delhaize Group	France	groc	Dec	10.00	na
25	Coop Italia	Italy	groc	Dec	9.74	10.89
34	Somerfield	UK	groc	Apr	7.30	7.68
35	ICA	Sweden	groc	Dec	7.28	7.52
37	Mercadona	Spain	groc	Dec	6.56	6.77
42	Spar Österreich	Austria	groc	Dec	5.86	6.21
44	Conad Group	ITALY	groc	Dec	5.66	6.27
49	Grupo Erosk	Spain	groc	Jan	5.20	6.20
50	Delhaize Group	Belgium	groc	Dec	4.87	5.10
52	Co-operative Group	UK	groc	Jan	4.70	3.19
55	Norges Gruppen	Norway	groc	Dec	4.21	4.18
57	Laurus	Netherlands	groc	Dec	4.07	3.50
63	Axfood	Sweden	groc	Dec	3.68	3.71

Source: Mintel 2005 permission granted

**Table 2.1 European Top Grocery Retailers**

Retailing is a major component of many economies. Within the retail sector, food retailing is the largest and most important component. Perhaps 25% of all enterprises in the European Union (EU) are involved in retailing. About 12% of the total working population are engaged in retailing. There are well over 3.5 million shops in the EU. Food retailing makes up perhaps 40% of the total in many countries.

The retail sector is enormous and influential (Table 2.1). These twenty four grocery retailers are within the top 60+ retailing companies in Europe by sales volume. Carrefour, Tesco, Aldi, Edeka, Schwarz, Leclerc, Auchan are in the top ten retailers in Europe. The scale and concentration of the modern retailing business in Europe is in contrast to the American retailing scale in the 1960's, at the origins the concept of channel captain. That contrast is heightened in the context of the retailers in the top 60+ who are not classified as grocery including Walmart, Rewe, Intermarche, Metro (Table 2.2).

Within the sector however are massive dichotomies. There are many single shop businesses, but there are also some of the largest companies in Europe. Retailing is a local affair with local demands: but Euro-brands are increasing and indeed global brands are important. Retail sales are increasing but the number of shops is falling and their format is changing. Retailing is a business sector of contrasts, under-going considerable change. One element in this change is the supply of products to retailers, in particular the large food retailers. The operation and structure of supply channels have been re-engineered to achieve efficiency and the flexibility to meet the demands of modern retailing and the needs of consumers.

Rank	Company	Origin	Sector	Yr End	Sales in €bn	
					2003	2004
3	Intermarché ITM Enterprises	France	multi	Dec	33.30	33.33
5	Rewe	Germany	multi	Dec	30.73	32.67
7	Metro	Germany	multi	Dec	28.17	29.66
11	Wal-Mart Stores	USA	moss	Jan	21.64	na
13	Rallye	France	multi	Dec	19.67	20.03
15	KarstadtQuelle	Germany	multi	Dec	15.27	13.44
16	Tengelmann	Germany	multi	Apr	14.64	na
17	PPR	France	multi	Dec	13.88	14.54
18	El Corte Ingles	Spain	multi	Feb	13.64	na
21	Marks & Spencer	UK	multi	Mar	10.63	10.36
22	Migros	Switzerland	multi	Dec	10.33	10.25
23	Kingfisher Group	UK	diy	Jan	10.15	11.27
26	Coop Nodden	Sweden	multi	Dec	9.43	9.48
27	DSG Internation	UK	elec	Apr	9.34	9.89
28	IKEA	Sweden	furn	Aug	9.27	10.37
29	Otto Group	Germany	asp	Feb	8.93	na
30	Coop Scheweiz	Switzerland	multi	Dec	8.56	na
31	Euronics International	France	elec	Dec	8.38	8.56
32	GUS	UK	multi	Mar	8.21	9.01
33	Experl	Switzerland	elec	Dec	7.59	na
36	Boots Group	UK	multi	Mar	6.76	7.12
38	John Lewis Partnership	UK	multi	Jan	6.50	na
39	Kesko	Finland	multi	Dec	6.03	6.35
40	Intersport	Switzerland	sport	Apr	6.00	na
41	La Rinascente (Group)	Italy	multi	Dec	5.66	na
43	Dansk Supermarked	Denmark	multi	Jul	5.82	na
45	Schlocker	Germany	h&b	Dec	5.61	5.69
46	Galeries Lafayette	France	dept	Dec	5.53	5.64
47	Kesa Electricals	UK	elec	Jan	5.45	5.83
48	H&M Henez & Mauritz	Sweden	clo	Nov	5.28	5.88
51	Leroy Merlin (Group)	France	diy	Dec	4.80	5.58
53	Vendex KBB	Netherlands	multi	Jan	4.50	na
54	C&A	Belgium	clo	Dec	4.28	4.95
56	Globus Group	Germany	multi	Jun	4.19	na
58	Woolworths Group	UK	multi	Jan	4.01	4.21
59	SOK	Finland	multi	Dec	4.00	4.73
60	Colnyt Group	Belgium	multi	mar	3.86	na
61	Hutchinson Wharmpca (retail)	Hong Kong	h&c	Dec	3.75	na
62	Grupo Inditex	Spain	clo	Jan	3.75	4.70

Source: Mintel 2005 premisson granted

**Table 2.2 European Top Non-Grocery Retailers**

### 2.2.1 Culture and Retail Consumers

Retailing is the market place where people purchase goods. Their choice is dependent on their own culture, experience and financial circumstances. The success of the retailer is dependent on understanding these factors and the drivers of changing consumer demand. The retailer must bring the right product in the right quantity to the right market place format. The culture within which the retailers operate is dynamic.

They need to be responsive to a range of influences: population demographics; changes in disposable income; the different social groups and trends in demand. Examples of such issues are the fall in birth rate and an ageing population due to better health care. This population has greater wealth and has experienced travel, demanding a wider range of products. There is the need for the segmentation of product groups: organic foods; ready meals; baby products, etc. Consumers choose how they want to shop.

Purpose	Reason	Product Example	Retailer and Format Example
Essential	Replenishment of stock items; primary food shopping trip	Food and household items	Food superstore
Purposive	Clear purpose to trip, big items	Food and household items, Christmas purchases	Retail park, shopping centre with department stores
Leisure (or fun)	Social activity, occasionally ancillary to visit	Specialised food products, factory or farm visits	Town centre, shopping centre or mall, leisure activity focus
Convenience	Time constrained, top-up trip, everyday purchases	Ready meals, milk, newspapers	Convenience store, petrol station store.
Experimental	Unusual product or innovative method	Home delivery of standard order, local produce, specialised food products	Ticketmaster.com, Argos, farm shop

Source : Burt and Sparks 2003b p11

**Table 2.3 Types of Food Shopping Trips**

Consumers satisfy their needs in different ways at different times (Table 2.3). The design and availability of the market place has had to adapt to the desires and choices of the consumer. An understanding of the consumer culture leads the retailer to reflect on the location and type of outlet. Food retailing requires a wide range of outlets and locations. The number and type change with time. There are large and small fixed shops, mobile shops, car boot markets, other town centre markets and now even virtual shops. The trend for superstores to remain open 24hrs together with greater car ownership has coincided with the reduction of small corner shops.

Traditionally retailing has low entry and exit barriers. The number of independent traders is numerically the dominant force. However, the large

organisations have used their economies of scale to gain dominance. The complexity of the large hypermarkets and supermarkets require professional managers with a range of skills. A large UK food hypermarket or supermarket is likely to be open for 24 hours a day, will have a staff of 750 working at many different levels and take £2 million per week in sales. This is a different environment from the local retailer. The small and medium sized retailers have responded to the competitive market and now have developed the skills to manage the complex environment.

The increasing affluence and mobility of the population, combined with the development of the strong corporate retailers, has led to the large out of town retail outlet, with large sales and car parking areas. The superstores are a dominant retail format. This development is controversial and has led to some concern from planners and local retailers. However, the presentation, choice and availability of the product in the food superstores remain successful with the consumer. Their success has stimulated demand. The range of goods has increased. The challenge for the supply chain is to manage the range and volume of products to be distributed. They have had to ensure they are designed to deal effectively with distribution and the replenishment of stock.

Retailing involves the selection and sourcing of products for sale. Retailers, in particular food retailers, have a wide variety of goods. These may be sourced from the producer by the retailer or through an intermediary wholesaler. The increasing power and capability of large retailers have enabled them to exploit international sourcing and buying openings. It makes retailing sense to source the product in countries where the cost of production is lower. Many of the perishable products will have been sourced from around the world. British food retailers' logistics

systems, using computer technology and control of the supply chain, have made them amongst the most efficient in the world (Ferne and Sparks 2004b p23).

In obtaining products, retailers have a choice about the range to sell. Retailers have now become strong brands. The approach to retailer branding varies across the globe, but large retailers are becoming much more concerned in managing their own retail names or brand (Burt and Sparks 2002). In food retailing in the UK, retailer brands (what others term own-label or private label) have become dominant. Therefore the product supply and quality needs to be even more within the retailers' control. Promotion is constantly reinforcing the corporate brand. Most UK food retailers now have a structured branding approach targeting specific consumer segments. Consistency, reliability and quality of supply are thus critical (Table 2.4).

	<b>Exclusive</b>	<b>Standard</b>	<b>Value</b>
<b>Tesco</b>	Finest	Tesco	Value
<b>Safeway</b>	The Best	Safeway	Saver
<b>Sainsbury</b>	Taste the Difference	Sainsbury's	Economy
<b>Asda</b>	Extra Special	Asda	Smart Price
Note: This table is constructed on the basis of product price points. It excludes alternative branding concepts based on other product attributes such as health (e.g. Sainsbury's Be Good to Yourself and Tesco Healthy Eating), organic origin (e.g. all company retailer Organic brands) or other segments (e.g. Sainsbury's Blue Parrot Café brand of healthy eating products for children).			

Source: Burt and Sparks 2003b p19

**Table 2.4 UK Grocery Retail Branding 2004**

### **2.2.2 Changes in Food Retailing**

The changes in food retailing influence the major functions in the retail business and are a response to the dynamics of the sector. Any analysis of major recent trends in retailing produces quite an extensive list of transformations and issues. The listing in Table 2.5 is readily recognisable from developed economies. Burt and Sparks (2003b) summarised the listing into three key areas.

<p>A decrease in the total number of shops.  An increase in the number of large food and non-food superstores.  New shopping centres.  Growth of retail sales and floor space  Low levels of inflation.  Increase in small store formats.  Concentration in retail sales.  Extensions of product ranges in superstores  Strengthening of primary locations and weakening of tertiary ones.  <b>Large retailers taking control of the supply chain.</b>  Changes in accessibility to retail provision.  Increased use of sophisticated technologies by retailers.  More variety of potential locations.  Wider use of town centre management.  More awareness of retailer activity.  [Emphasis added]  After Dawson 2000</p>
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Source: Burt and Sparks 2003b p23

**Table 2.5 Major Retail Trends of the 1990s/2000s**

First, it is clear that in recent decades there have been enormous change in the location of retailing. Food retailing takes place now in very different locations than previously. There have been broad trends of decentralisation of retail location and the rise of superstores. Retailing has been locationally transformed. From a channel perspective this may have had advantages for the distribution of products.

Secondly, there has been an alteration in the format through which food retailing takes place. Shops today are not like shops of previous times and retailer strategies have become more segmented. They differ in scale, design, technique and approach. This is obvious in terms of the larger store formats, but is equally true for smaller formats. A common component however is the improvement in the quality of provision.

Thirdly, it has been emphasised that food retailers have increased in scale and power (Table 2.6). They are now major businesses, often being larger than the manufacturers who supply them. They can thus reorganise various relationships to suit themselves. This scale of operation brings practical and financial benefits to the



business. The world's leading retailers are now amongst some of the biggest organisations around and have an increasingly international approach. Their professionalised management approach has changed the sector and its supply systems.

Table 2. National market share (%) 1998/1999, by source Company)	Taylor Nelson Sofres (1999)	IGD(1999)	Competition Commission (1998/9)
Tesco	21.1	15.6	23.0
Sainsbury	17.6 11.8 18.7	11.8	18.7
Asda	12.7 9.1 12.2	9.1	12.2
Safeway	9.3 7.4 11.5	7.4	11.5
Somerfield	4.1 6.2 9.8	6.2	9.8
Marks & Spencer	-	2.9	4.9
Morrison	4.1	3.0	3.9
Waitrose	-	1.9	3.0
Iceland	-	1.9	3.0
Others	-	40.2	1.0
Total	100	100	100
Concentration ratios	-		
CR1	21.1	15.6	23.0
CR2	38.7	27.4	41.7
CR3	51.4	36.5	53.9
CR4	60.7	49.9	65.4
CR5	64.8	50.1	75.2/69.3*

Notes: Market definition: Taylor Nelson Sofres – retailer share track (179 markets: packaged grocery, fresh foods & toiletries/healthcare); IGD – Total market size includes M&S food sales, retailers where food sales exceed 50%, CTNs where food-related items exceed 35%, chemists and VAT; Competition Commission – groceries defined as food, alcoholic and non-alcoholic drinks, cleaning products, toiletries, household goods. 'All grocery stores' category. \*75.2% taking largest five company shares; 69.3% presented by Competition Commission (Morrison replacing Somerfield as C5 company). Power and Competition in the UK Retail Grocery Market 239

Source: Burt and Sparks 2003a p239

### Table 2.6 National Market Share

One of the key themes that emerges, is that if there has been a transformation at the retail shop end of the channel then there has also to be a transformation in supply systems as well (Sparks 1998). To meet consumers' demands for new products in new formats and in new ways, the supply system has had to be reorganised and refocused. This reorganisation is needed because the nature of retailing and supply has changed. Retailers through their knowledge of consumers have gained power and used it in a variety of ways. One of their applications has been through the reorganisation of supply channels and the adoption of supply chain management principles to gain efficiency and effectiveness.

## 2.3 Retail and Logistics

EXTENT OF RETAIL CONTROL IN THE SUPPLY CHAIN ACROSS EUROPE	
<p><b>Firms in countries with greater retail concentration and a higher level of retail branding will assume greater responsibility for distribution support to their stores.</b> In the UK it was shown that the construction of large RDCs, often composites, was the end product of an expensive distribution system to support store brand loyalty. <b>By contrast in Southern and Eastern Europe, control of the supply chain is in the hands of the suppliers.</b> While larger chains in Germany, France and The Netherlands have centralised distribution in the grocery sector a large number of <b>platforms</b> have been built to serve limited product groups and temperature ranges p43.</p>	
<p><b>The distribution 'culture' in the UK is different from that in the rest of Europe.</b> UK retailers have opted for a high cost, high efficiency distribution model with a small number of large RDCs – often composites – supplying their stores. On the continent of Europe, a low cost, non-composite model is the norm for those retailers who have reached the stage of centralising their distribution p45. [Emphasis added]</p>	

Source: Fernie 1992, p35-47

**Figure 2.6 Difference in European Distribution 1992**

Across Europe, different retailers in different countries and at different times approach the matter of supply chain management and retail distribution with contrasting strategies (Figure 2.6).

Concentration in retailing by kind of business, GB 1992					
Sectors of Activity	Total Turnover	Largest 5 enterprises account for:		Largest 10 enterprises accounted for:	
		£ Million	Amount £m	%	Amount £m
Food	43,479	18,391	23.1	25,261	58.1
Drink, confectionery & tobacco	20,956	4,836	23.1	7,681	36.7
Clothing, footwear and leather goods	21,742	7,872	36.2	10,671	49.1
Household goods	29,389	5,862	19.9	18,780	29.9
Other non-food goods	26,035	6,336	24.3	9,000	34.6
Hire & repair	1,509	951	63.0	1,012	67.1
Sales by non-store activity	10,035	3,683	36.7	4,560	45.4
Total Retail Trade	143,645	31,539	22.0	46,286	32.2

Source: Fernie 1997 p386

**Table 2.7 Concentration in Retailing GB 1992**

These supply chain configurations evolve at different paces. Some retailers in some countries are more advanced than others (Fernie 1992). One strong link between retailing and retail distribution is the degree of concentration in the market (Table 2.7). In UK Food has a concentration factor of 58.1 for the largest ten

enterprises, with five stores at 23.1 percent. It is a similar level for other product sectors like clothing and footwear.

**Distribution Strategies of European Retailers**

This article will attempt to address an area of investigation which has been largely neglected by retail marketers, namely the **physical distribution and logistics strategies of European retailers**. More specifically, it will be argued that the strategies which have evolved in the UK are unique and differ markedly from those of their continental European counterparts. These differences have a particular significance to retailers with pan-European aspirations, especially for UK retailers entering Western European markets and for continental retailers wishing to reap the relatively high profit margins which can be obtained in the UK p35.

Many of these changes in the retail market place have heralded advances in distribution support to stores with a **shift from a supplier-controlled to a retailer-controlled distribution network**. The net result of this centralisation of stock by retailers has been the construction of a relatively small number of large, strategically located regional distribution centres [RDCs] with the subsequent closure of smaller depots operated by manufacturers or contractors providing 'groupage' services. Retailers have also rationalised their networks p36.

If centralization of stock into large RDCs and contracting out the operation to third party contractors were the trends of the 1970s and 1980s, what are the likely trends to the year 2000 and beyond? The main challenge facing distribution managers is the more efficient management of the *whole* supply chain. Innovation in retail *secondary* distribution is renowned and has been applied in other business sectors P37. [Emphasis added]

Source: Fernie 1992, p35-47

### Figure 2.7 European Distribution Strategies

Fernie goes on to argue that the UK strategy is unique and distinct from mainland Europe (Figure 2.7). The difference is not only driven by the degree of retail concentration, but also by the extent of retailer control in the supply chain. The result has been a small number of large distribution centres placed in strategic geographical locations.

INFORMATION TECHNOLOGY

To ensure a quick response to customer needs in a competitive market, better relationships with suppliers will be required to enable further **reductions in lead times throughout the supply chain**. The facilitating technology is in place; indeed, most retailers are committed to the full implementation of EPOS and EDI in the near future.

For example Tesco was able to quantify the benefits of IT to its business from 1986-1991:  
 Net margin from 3.7 to 6.6 percent  
 Stockholding from 3.0 to 1.9 weeks of stock  
 Service level from 96 to 98 percent.

[Quote from Joe Galloway, Director IT, Tesco]  
 A commitment to stronger retailer-supplier links "partnership demands a relationship based on tough collaboration not tough adversity" This collaboration will be needed to reduce the level of working capital in the supply chain.

**The key to success is the sharing of information....**Success of this, and ventures proposed by retailers, will depend on the trust and goodwill between business partners p38. [Emphasis added]

Source: Fernie 1992, p35-47

### Figure 2.8 Information Technology 1992

The physical distribution of retail goods may be well advanced. However, the management of the whole supply chain through information and data flow was still a challenge at the time of that study (Figure 2.8). The timing, 1992, coincides conveniently with the author's practitioner experience with Tesco. Control over the whole supply chain depends on the rapid and efficient flow of information and data between suppliers and retailers.

Since that report, the arrival of the internet has enabled companies to share easily. Thus retailers have engaged in logistics across Europe. However, in order to understand the status and development of the Tesco supply chain, it is necessary to take a broader view of the logistics trends in the UK, which is the subject of the next section.

**Acknowledgement:** The author wishes to acknowledge that sections 2.3.1 and 2.3.2 reflect earlier work completed on a collaborative basis (Gustafson et al 2006; Smith 1998; Smith and Sparks 1993, 2004 a, b, c).

### **2.3.1 The Logistics task**

Retailing and logistics are concerned with product availability. Many have described this as 'getting the right products to the right place at the right time' (e.g. Fisher, Raman and McClelland 2000). Unfortunately however that description does not do justice to the amount of effort that has to go into a logistics supply system and the multitude of ways that the supply systems can go wrong. The very simplicity of the statement suggests logistics is an easy process. The real trick however is making logistics look easy, day in and day out, whilst reacting to a volatile and changing consumer demand. For example, if the temperature rises and the sun comes out in an untypical Scottish summer, then demand for ice cream, soft drinks and even salad items

risers dramatically. How does a retailer make sure they remain in-stock to capture this fluctuating demand?

The example above demonstrates that retailers must be concerned with the flows of product and information within the business and the supply chain. In order to make products available retailers have to manage their logistics in terms of product movement and demand management. They need to know what is selling in the stores and both anticipate and react quickly to changes in this demand. At the same time they need to be able to move less demand-volatile products in an efficient and cost-effective manner.

Component	Description
Storage Facilities	<ul style="list-style-type: none"> <li>• These might be warehouses or distribution centres or simply the stock rooms of retail stores.</li> <li>• Retailers manage these facilities to enable them to keep stock in anticipation of or to react to, demand for products. Increasingly some centres are run 'stock-less' and act as consolidation hubs.</li> </ul>
Inventory	<ul style="list-style-type: none"> <li>• All retailers hold stock to some extent.</li> <li>• The question for retailers is the amount of stock or inventory (finished products and/or component parts) that has to be held for each product and the location of this stock to meet demand changes.</li> </ul>
Transportation	<ul style="list-style-type: none"> <li>• Most products have to be transported in some way at some stage of their journey from production to consumption.</li> <li>• Retailers have to manage a transport operation that might involve different forms of transport, different sizes of vehicles and different scheduling availability of drivers, vehicles and even store access.</li> </ul>
Unitisation and Packaging	<ul style="list-style-type: none"> <li>• Consumers generally buy products in small quantities. They sometimes make purchase decisions based on product looks and packaging.</li> <li>• Retailers are deeply concerned to get products that are easy to handle in logistics terms, don't cost too much to package or handle, yet retain their selling ability on shelves.</li> <li>• Secondary and tertiary packaging can be a cost to the supply chain and is increasingly replace by returnable handling systems where possible.</li> <li>• Unitisation is combined with standardisation to provide order to the handling of products.</li> </ul>
Communication	<ul style="list-style-type: none"> <li>• To get products to where we want them, it is necessary to have information, both about demand and supply, but also about volumes, stock, prices and movements.</li> <li>• Retailers have thus become increasingly concerned with being able to capture data at appropriate points in the supply and demand system, and most importantly, to use that information to have a more efficient and effective logistics operation.</li> </ul>

Source: Gustafsson et al, 2006 p42

**Table 2.8 Implications of the Components of the 'Logistics Mix'**

The logistics management task is therefore concerned with managing the components of the 'logistics mix'. Table 2.8 identifies five components. It should be

clear that all of these elements are inter-linked. If a retailer gets good data on demand from their checkout system, then the scheduling of transport and the level of stock holding become more straightforward. If the level of inventory can be reduced, then perhaps fewer warehouses are needed. If communications and transport can be highly effectively linked, then perhaps a retailer can move from putting stock away in a warehouse to running a distribution centre which sorts products for immediate store delivery i.e. approaching a 'just-in-time' system.

It should also be clear that retailers might not do all of this on their own. Retailers are involved in the selling of goods and services to the consumer. For this they take product from manufacturers and suppliers. Retailers thus have a direct interest in the logistics systems of their suppliers. If a retailer is effective, but its suppliers are not, then errors and delays in supply from the manufacturer will impact the retailer and the retailer's consumers, either in terms of higher prices or stock-outs (no products available on the store shelves). If a retailer can integrate its logistics system with that of its suppliers, then such problems can be minimised. Much more importantly however the entire supply chain can then be optimised and managed as a single entity. This brings potential advantages of costs reduction and service enhancement, not only for the retailer, but also for the supplier. It should also mean that products reach the stores more rapidly, thus better meeting fluctuating customer demand.

For example, Tesco, by working with producers of fresh foods e.g. lettuce can ensure that products are picked in reaction to demand levels and distributed through the distribution centres rapidly i.e. not stored. By being in the shop more quickly, the freshness is maximised and shelf life is extended. The consumer gets a better quality

product but at the same time wastage costs are reduced. The system is cheaper but also provides a better service.

This description of the logistics task is immediately recognisable. However it does tend to gloss over the importance of one aspect that is less obvious, namely, that of unitisation and packaging. Products appear to move seamlessly from production to the retail store and shop floor. This is of course far from the truth. In reality products have to be organised and handled in order to make this journey. If organised efficiently then there are costs and service benefits. If there is a lack of supply chain agreement on appropriate sizing and handling then time and cost will be lost. This search for efficiency and effectiveness through packaging and standardisation in handling is at the heart of packaging logistics (Gustafson et al 2006).

Products when produced have to be packaged and/or handled in some way. Decisions about the size and shape of packaging and the information it carries are important to handling throughout the supply chain. How many products make up various packaging sizes is a fundamental question. Similarly, if standard handling systems can be adopted then systems can be built around the sizes and processes. In environmental terms returnable or reusable handling systems may reduce the amount of transport packaging and be more environmentally sustainable.

Summarising, the logistics task can be described (Christopher 1998, p4) as:

*'The process of strategically managing the procurement, movement and storage of materials, parts and finished inventory (and the related information flows) through the organisation and its marketing channels in*

*such a way that current and future profitability are maximised through the cost effective fulfilment of orders’.*

As retailers have begun to embrace this logistics approach and examine their supply chains, many have realised that to carry out logistics properly, there has to be a transformation of approach and operations. It is to this we now turn.

### **2.3.2 Retail Logistics Transformation**

When Tesco opened their new 16,000 sq ft store in Leicester in 1961, they claimed it was the largest grocery store in Europe. Today, the Tesco average store size in the UK is almost twice this and internationally, Tesco have opened hypermarkets ten times as large as this pioneering store. It should be obvious that the scale, location and product range of the 1961 Leicester store and these hypermarkets reflect major shifts in the retail form. The average Wal-Mart Supercenter is approaching 200,000 sq ft in size. It should be clear that the supply systems for such stores also represent a fundamental shift in operations and approach. New store formats demand new logistics. The logistics required for a new hypermarket is vastly different to the logistics required for the stores it replaces. Such differences are one component of the logistics transformation. It is as essential as well that existing stores and new smaller formats also have effective supply systems to meet their new requirements and demands.

Such new stores, which we see across Europe, and increasingly elsewhere in the world, also represent visible reminders of the change in power. Retailers have grown substantially in scale as businesses. This growth has been greater than the growth that has taken place in manufacturers. This scale imbalance has been combined with the better understanding of consumers that retailers can gain through closeness to



customers and through technology. Manufacturers are a step removed from this customer demand. With better data and greater scale, combined in the UK in some sectors with a massive development of retailer branding, retailers have been able to wrest and then maintain control over distribution channels and logistics activities, though the relationships are uneven (Burt and Sparks 2003; Ogbonna and Wilkinson 1996).

Period	Problem	Innovation	Consequences
1960s and 1970s	Disorderly delivery by suppliers to supermarkets; queues of vehicles led to both inefficiency and disruption.	Introduction of Regional Distribution Centres (RDCs) to channel goods from suppliers to supermarkets operated by retailers.	Strict timing of supplier delivery to RDC imposed by retailers. Retailers build and operate RDC. Retailer operates own delivery fleet between RDC and supermarkets within its catchment area.
1980s	Retailers becoming too committed to operating logistics services in support of retail activity.	Operations of retailer-owned RDCs and vehicle fleets outsourced to specialist freight companies.	Retailers can concentrate on the 'core business' of retailing. Retailer achieves better financial return from capital investment in supermarkets than in RDCs and vehicles.
1980s and 1990s	Available floorspace at retail outlets being under-used; too much floorspace used for storage.	Conversion of storage floorspace at supermarkets to sales floorspace; Corporate strategy and brand development.	Better sales revenue potential at retail outlets. RDCs absorb products formerly kept in store at supermarkets. Just-in-Time (JIT) delivery used from RDC to replenish supermarket shelves.
1990s and 2000s	Requirement for better customer service and cost control over a range of retail formats and channels; range of products expands.	Reorganisation of RDCs; some development of stock-less centres; store based Internet delivery systems; development of ECR; concentration on flow through processes and store specific distribution.	Better in-store quality and stock position. Technological expansion through operations. Rapid rollout of Internet operations

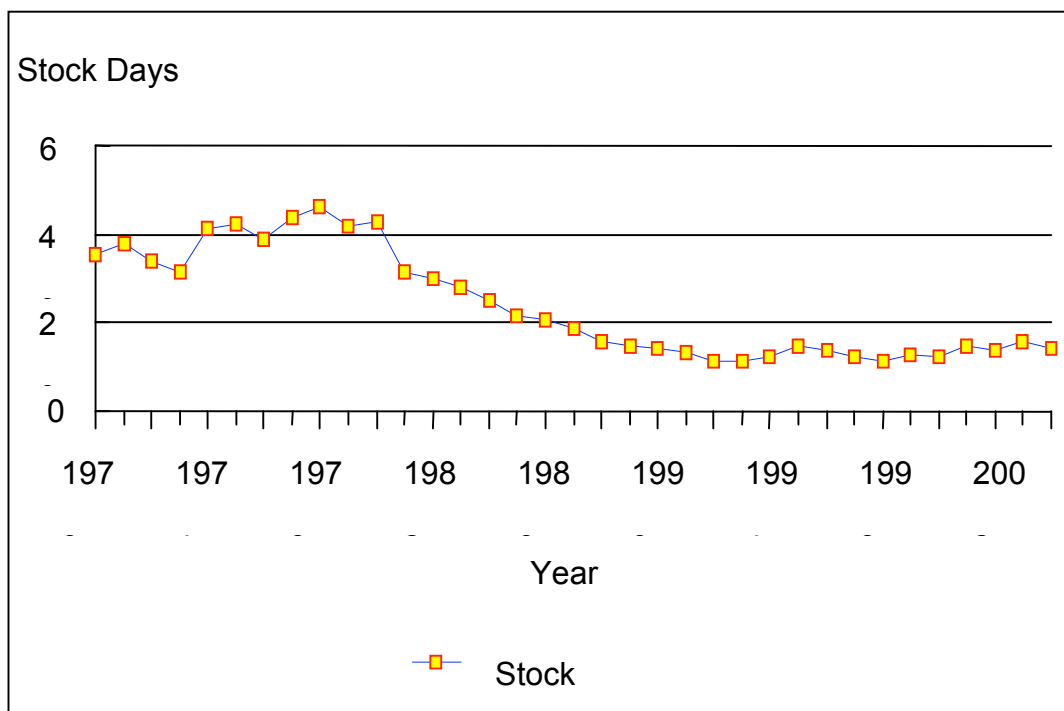
Source: after Cooper, Browne, and Peters 1991

**Table 2.9 Major Logistics Innovations by Multiple Grocery Retailers**

Retailers were once effectively the passive recipients of manufacturers' products, allocated to stores by the manufacturers in anticipation of demand. Today, retailers are the active controllers of product supply in reaction to known customer demand. They control, organise and manage the supply chain from production to consumption. This is the essence of the retail logistics transformation that has taken place. Retailers are the channel captains and set the pace in logistics. Having extended their channel control and focused on efficiency and effectiveness, retailers are now

attempting to engender a more co-operative and collaborative stance in many aspects of logistics. They are recognising that there are still gains to be made on standards and efficiency, but that these are probably only obtained as channel gains (i.e. in association with manufacturers and logistics services providers) rather than at the single firm level.

Table 2.9 charts this history of innovation in logistics by major grocery retailers. The stages are characterised by a movement from a manufacturer-controlled, transport oriented system to a retail led, and replenishment focused technology-rich supply chain. This transformation began in the food retail sector. Figure 2.9 shows the effect this assertion of leadership and maintenance of control has had on the stockholding levels of Tesco (see also Smith 1998; Smith and Sparks 1993, 2004a, b, c). The figure visibly illustrates the shift from disorderly systems through the enhancement of efficiency phase to the current low-stock position (with recent increases accounted for by the developments in non-food and global retailing expansion).



**Figure 2.9 Stock Days in Tesco 1970-2005**

McKinnon (1996) reviewed and summarised the key components of this logistics transformation, primarily in the context of the United Kingdom. He identified six trends, all of which are closely related and mutually reinforcing (see also Table 2.9):

Retailers increased their control over secondary distribution (i.e. warehouse to shop) by channelling an increasing proportion of their supplies through distribution centres (DCs). In the grocery sector this process is now virtually complete. British retailers exert much tighter control over the supply chain than their counterparts in most other countries. Their logistical operations are heavily dependent on information technology (IT), particularly the large integrated stock replenishment systems that control the movement and storage of an enormous number of separate products.

- (a) Restructured retailers' logistical systems have reduced inventory and generally improved efficiency through the development of 'composite distribution' (the distribution of mixed temperature items through the same distribution centre and on the same vehicle) and centralisation in specialist warehouses of slower moving stock. In the case of mixed retail businesses the establishment of 'common stock rooms' (where stock is shared across a number of stores, with demand deciding to which store stock is allocated) is developed.
- (b) Adoption of 'Quick Response' (QR) type approaches with the aim of cutting inventory levels and improving speed of product flow. This has involved reducing order lead-time and moving to a more frequent delivery of smaller consignments both internally (between DC and shop) and on external links with suppliers. This has greatly increased the rate of stock-turn and

increased the production of supplies being 'cross-docked', rather than stored, at DCs. QR was made possible by the development of EDI (Electronic Data Interchange) and EPOS (Electronic Point of Sale), the latter driving the 'Sales Based Ordering' (SBO) systems that most of the larger retailers have installed. In other words as an item is sold and scanned in a shop, these data are used to inform replenishment and re-ordering systems and thus to react quickly to demand. Sharing such data with key suppliers further integrates production with the supply function. Major British retailers have been faster to adopt these technologies than many counterparts in other European countries, though they still have to diffuse to many medium-sized and small retail businesses.

- (c) Rationalisation of primary distribution (i.e. factory to warehouse). Partly as a result of QR pressures and partly as a result of intensifying competition, retailers have extended their control upstream of the DC (i.e. from the DC to the manufacturer). In an effort to improve the utilisation of their logistical assets, many have integrated their secondary and primary distribution operations and run them as a single 'network system'. This reduces waste and improves efficiency. This rationalisation of primary distribution has now been taken a stage further within the UK as retailers implement Factory Gate Pricing (Primary Distribution) with their suppliers. This strategy (ex-works costing) extends the retailers' control over the flow and transportation of goods from the supplier. The retailer decides which companies should be doing the transport and also the shape of the consolidation of suppliers and their products.
- (d) Introduction of Supply Chain Management (SCM) and ECR (ECR). Having improved the efficiency of their logistics operations, many retailers have

closely collaborated with suppliers to maximise the efficiency of the retail supply chain as a whole. SCM and ECR provide a management framework within which retailer and suppliers can more effectively co-ordinate their activities. The underpinning technologies for ECR have been well established in the United Kingdom, so conditions have been ripe for the application of this principle.

- (e) Increased return flow of packaged material and handling equipment for recycling/re-use. Retailers have become much more heavily involved in this 'reverse logistics' operation. This trend has been reinforced by the introduction of the EU packaging directive. Although the United Kingdom has lagged behind other European countries, particularly Germany, in this field, there remain opportunities to develop re-usable containers and reverse logistics systems to manage their circulation.

Whilst McKinnon's analysis was developed in the context of the United Kingdom, such trends are being found in many other countries. This diffusion of logistics approaches has occurred for two main reasons. First, the benefits from reconfiguring the supply chain are recognisable from the results achieved. As with much in retailing therefore, there has been a spate of 'copying' or replication. Secondly, the process of retail internationalisation has itself gone beyond simply opening shops in another country. As retailers have internationalised, so they have used their power and position to redevelop and export supply chain practices. Thus, the Tesco systems in Poland and Thailand are based on practices in the United Kingdom. For Wal-Mart, the ability to export its 'model' of business, including its supply chain, is fundamental to its chances of success in international markets.

It should be clear from the discussion above that the modern retail logistics system is heavily dependent on the use of information technology. Logistics now is as much about information movement as it is about product movement. Of course it remains true that products have to be distributed. Vehicles, packages, boxes and crates are still involved. But, increasingly data and its use drive logistics and organise what gets moved, when it moves and the form in which it is moved and stored.

Modern retail logistics no longer operate as a separate or functionally based activity. Within a company, warehousing and transport cannot exist as private separate operations. Instead logistics is all about integration, not only within a company, but also increasingly outside the business with suppliers, logistics services providers and customers. Partnership is a strong component of modern retail logistics and an ability to work with other individuals and other companies is fundamental to success. This of necessity will include discussions about packaging and handling systems.

It should also have become apparent that the 'reach' of retail logistics has expanded enormously. Originally companies had to manage their supplies and product from local warehouses. Nowadays, retailers are much more international and global in their outlook. Product is sourced from around the world, and so the interactions and movements involved in logistics are now equally international and global. Yet, at the same time, there is concern to enable local suppliers to participate in such systems and thus to add a point of differentiation.

However it must not be forgotten that logistics is eventually about the movement of product. Much work is undertaken on improving the mechanics and details of product movement and handling, including packaging. For example, a

modern supermarket contains good examples of packaging and handling standardisation, the best of which makes handling easier and allows customers to buy direct from the product packaging. Vehicle fleets may be equipped with GPS (Global Positioning Satellite) systems and advanced tachograph and communications equipment, allowing real-time driver and vehicle performance monitoring and linking vehicles to stores and other distribution points. The timing of deliveries into 'windows' is critical for product flow and labour scheduling. In distribution centres, voice activated or controlled picking has added a degree of accuracy and speed to the process. Shelf-Ready merchandising or other 'flow' based handling systems have also speeded up the processes involved. Such detailed analyses remain key elements of supply chain integration.

This section has highlighted many of the issues and topics involved with retail logistics and the supply chain in Europe and UK. It is the industry environment for the Tesco developments, which follow in chapters three and four.

## 2.4 The Example of Tesco

The example of Tesco is the platform for the detail of this thesis. Tesco is the number one grocery retailer in UK and now has an international presence. The supply chain and logistics in Tesco have evolved over recent decades. Some of the development has been ground breaking and demonstrated leadership in the industry. The author's operational experience was with Tesco during an extended period during which the supply chain grew in its complexity, scale and interaction with the suppliers and their transport providers. Tesco has, in reality, been a channel captain in retail supply chain change. This will be demonstrated in chapters three and four.

# Chapter Three

## Tesco

### Retail Logistics



### 3 Tesco Retail Logistics

Chapter Three introduces Tesco retail logistics and chapter four continues the process, examining primary distribution and then the fresh food supply chain. This chapter describes the evolution of retail logistics in the UK including interviews with senior Tesco distribution directors, who experienced the company's development at different stages. The chapter concludes with Tesco International growth, which has placed Tesco firmly as one of the three global grocery retailers in the world, alongside Carrefour and Wal-Mart.

The company is known internationally as a retailer. What is not so well known is its role in retail logistics and supply chain management. It has a long expertise in, and understanding of this critical success factor for its business strategy. That strategy is to 'serve customers to earn their lifetime loyalty'. This combination of retail success and supply chain expertise makes it a good candidate for further study in this thesis. It is selected for examination as an example of the role of retailers as channel captains in retail supply chain change.

It is logical to start with a short introduction, Tesco as it is today based on annual reports. This presents financial highlights from its 2006 results. It lists the detail of recent investments in retail logistics and supply chain management, both UK and International. It provides an insight into its continuing supply chain strategy. That does not explain how it reached this advanced state of expertise and practice. To understand that more fully it is necessary to examine the historical roots of its supply chain development. Those origins help to explain the conviction that Tesco has, as a retailer, that retail logistics and supply chain management are critical to its business success.

They lay the foundation for its transformation into the sophisticated modern supply chain structure and network that exists today. The journey through history includes an interview with a Board Director during the 1970s. This supports the base from which to take up the story under the theme; ‘behind the retail revolution there has been a distribution revolution’. This is based on a series of articles that the author wrote collaboratively with a colleague from Stirling University.

### 3.1 Tesco Today

Tesco today is a large successful international company reaping the rewards of its ten year strategy of International; core UK; non-food; and retailing services. The evidence is in the results for year ending 25 February 2006. This success explicitly recognises the alignment of the supply chain with the needs of the final consumer, for their lifetime loyalty (Table 3.1).

		Yr Ended 25 Feb 2006	Year on year change
Sales (inc VAT) £m	UK	32,657	10.7%
	International	10,480	40.7%
Sales	Total Group	43,137	16.7%
Operating Profit	Total Group	2,280	16.8%
No of Stores	UK	1,897	
	International (Asia 450, Europe 364)	414	
No of Stores	Total Group	2,711	
Sales Space '000s sq. ft	UK	25,903	44.1%
	International (Asia 16,114 Europe 16,720)	32,816	55.9%
Sales Space	Total Group	58,720	100%

Source: Tesco plc 2006, Preliminary Results 2005/6

**Table 3.1 Tesco 2006**

The scale of the modern Tesco supply chain operation is conveyed through some excerpts from the 2005 and 2006 Annual Reports (Tesco plc 2005, 2006).

UK: distribution: “(05 p12): *The company delivered 1.6 billion cases in the year through 26 distribution centres. There are new trunking stations in Cheshire and Hertfordshire. These receive stock from distribution centres and suppliers and organise deliveries to stores. A new centre at Daventry to coordinate non food imports. A new fresh food depot for meat and produce opens in Peterborough (October 2005) handling 700,000 cases per week for Christmas. (06 p10)*”.

UK Stores: “*1.5 million customers per week use self checking in 200 stores. There is more shelf ready packaging to speed replenishment of products and customers benefit from clearer aisles. Step Change £330 efficiency savings: introduced mobile display units for prepacked bread; new ways of managing stock in stores to increase the availability of products for customers, involving scanning gaps using hand held computers on a regular cycle, has significantly reduced out of stocks and also reduced costs.*”

International: “*Sharing skills (05 p 14) to help us server customers better wherever we operate, we share knowledge and best practice across the business. By transferring what we know in the UK about running our stores, buying and marketing our products, we are able to develop better ways of working, invest in price and improve the shopping trip for customers*”.

Hungary (05 p16): “*we extended our 430,00 sq ft Herceghalom distribution centre. To improve our fresh food offer we opened a new 225,000 sq ft fresh food distribution centre in Gyal. It uses radio frequency technology instead of paper to keep track of products and sort orders. It accounts for over 95% of the volume of our fresh*

*food. Poland (05 p 17): our new grocery, fresh and non food distribution centres in Teresin are now operational, handling around 95% of the volume. Slovakia(05 p 18): a new fresh food distribution centre under construction in Beckov will be operational by May 2005 and is another example of Tesco transferring world class knowledge to local teams for the benefit of our customers”.*

*Turkey (05 p18): “Kipa, we plan to introduce a new suite of IT systems called ‘Tesco in a Box’. These systems will run many key areas of our business including our supply chain and replenishment operation to help customers get what they want, when they want it. This implementation has been the model for subsequent rollout to Japan and China (06 p10). This ‘Tesco in a Box’ system was developed in India to standardise out IT systems to improve efficiency and reduce cost”.*

*Suppliers(06 p12): “We take a partnership approach to working with suppliers, sharing our knowledge and listening to suppliers feedback. This includes providing technical expertise, advice and insight into customer trends and making regular payments on time. Supplier viewpoint(06 p7): We aim to monitor supplier relationships through Supplier Viewpoint Surveys. The target is for over 90% of suppliers to view Tesco as trustworthy, reliable, consistent, clear, helpful, and fair; [achieved 94% in 2006 and 90% in 2005)”.*

*Tesco is a company that is integrated in its corporate culture and alert to the importance of its long term relationships with customers, suppliers and the supply chain. It is an international company with a clear strategy of being Flexible, act Local, keep Focus, operate Multi-formats and Capability (Terry Leahy CEO 05 p5). It is the*

subject for this thesis: The Role of Retailers as Channel Captains in retail supply chain change.

## 3.2 Retail Logistics

Retail logistics, in this thesis, is the term used for: the movement of goods from retailer controlled regional distribution centres to the retail stores. It might appear illogical to begin with end of the supply chain, when considering the flow of product from producer to consumer. The reason retail logistics is placed first is that it was the first segment of the physical supply chain that the retailers chose to control directly for themselves. Retail logistics is a well-established sector of retail control over the supply chain. The next section provides some data covering a twenty-year period establishing that this is a major trend.

### 3.2.1 Tesco 1984 – 2005

The Institute of Grocery Distribution (IGD) has provided annually valuable data on retail logistics. This provides a factual basis for statements about the development in retailers control over their distribution in the UK. For this reason it is a solid base on which to build the proposition that retailers are the channel captains in retail supply chain change. Let the facts speak for themselves. The 1984 results are reported in McKinnon (1989, p65). In 1984 Sainsbury had centralised 85% of its grocery volume; by 2005 (IGD 2006) that had increased steadily to 95%. During the same period, Tesco who had started from a lower centralised base of 50% of its grocery volume in 1984 volume; accelerated up to the same 95% by 2005 (Table 3.2). But that does not reveal the full scale of this transformation. The annual volume of cases throughput that Tesco now distribute through its centralised distribution network is 1.6 billion cases a year. That is almost twice the case throughput volume, of 810 million,

for Sainsbury. On initial examination of the percentage figures on their own, it would not be possible to identify Tesco as a leader, it appears more to be a late adopter than an initiator.

Company	% of Total Throughput	Annual Case Throughput	Total Warehouse Space	% Share	Total Number of Depots	% Centralised Distribution	% of Total Throughput in 1984	McKinnon
Tesco	34.70%	1,631,181,842	8,077,000	23%	28	95.00%	50%	
Asda	19.80%	931,615,000	7,168,000	21%	23	96.50%		
Sainsbury's	17.20%	810,000,000	5,772,000	17%	20	95.00%	85%	
Somerfield	7.40%	348,298,764	3,257,000	9%	14	90.00%		
Co-operative Group	5.99%	279,503,380	2,783,000	8%	22	85.70%		
Palmer & Harvey	3.80%	180,971,000	917,000	3%	15	100.00%		
Waitrose	3.70%	175,922,000	1,632,000	5%	8	97.90%		
Nisa-Todays	1.90%	91,100,000	700,000	2%	3	100.00%		
Budgens	1.00%	47,296,599	297,000	1%	1	94.00%		
United Co-operatives	0.40%	19,000,000	165,000	0%	1	65.00%		
M & S (Food)	3.30%		839,000	2%	7	97% chilled & ambient 100% frozen		
Boots			2,624,000	8%	24	95.00%		
Londis			382,000	1%	3	85.00%		
Safeway							93%	
Kwiksave							80%	
Waitrose							80%	
Fine Fare							45%	
Dee							40%	
Totals			34,613,000	100%	169	24.15%		

Source: IGD 2006; McKinnon 1989 p65

**Table 3.2 Warehousing Key Statistics 2005**

The rate of centralisation for Tesco is rapid. They had started from a lower base at the time of Operation Checkout in 1977. By 1984 they had put their centralisation plans onto an accelerated implementation programme. They were expanding their current depots, building on new sites, and contracting out in order to provide the capability to meet the company's ambitions centralisation targets. The first phase was the capital investment to expand the warehouse and distribution capacity.

The second phase was an intense stock reduction programme, called Corporate Replenishment. In order to free up sales floor space in the retail stores, the back up stock rooms needed to be cleared. That could only be achieved by introducing ever improving stock replenishment systems throughout the company, in retail, in distribution, in head office. The third phase was the ability to continue to increase the case throughput achievement with the same warehouse space. All this understates the technological transformations that took place in the early years of this period.

The strategy was a successful formula. These large centralised operations had the scale to handle ever-increasing throughput. The dry grocery model of centralised distribution was to be replicated in other product sectors; Beers, Wines & Spirits; Slow moving lines; Frozen foods. The speed of implementing centralisation in Tesco is demonstrated in the twenty-year trend from 1984 to 2005. This trend will now take place in the countries around the world that Tesco is establishing its stores. It is exporting its expertise in supply chain and logistics. Other major retailers are also implementing this. One example is Carrefour and others in Greece (Bourlakis and Bourlakis 2001).

The main point that is relevant to this thesis is that all the major UK grocer retailers have committed themselves fully to the principle of controlling directly the physical movement of goods from their regional distribution centres to the retail stores. In different ways, there is a similar story to tell. The centralisation process is a great advantage to suppliers. They did not have to invest in the capital or technological infrastructure. Delivering full loads into regional distribution centres reduced their transport costs. The direct delivery to retail stores was costly and inefficient. The suppliers had to contribute a discount on the product price for full vehicle loads into the

RDCs. McKinnon (1990, p76) reports on a recent survey of 50 major multiples who were operating 187 distribution centres cover three million square feet of warehousing. This is part of the evidence that centralised distribution is controlled by UK retailers.

Acknowledgement: the remainder of this chapter is based on previously published material that has been co-authored on a collaborative basis. (Smith 1998; Smith and Sparks 1993, 2004a, b, c)

### 3.3 Behind the Retail Revolution is a Distribution Revolution

Food retailing in the 1980s and 1990s went through a massive transformation. The most visible effects of this were the food superstores in the 1980s on which many food shopping trips are based and the return to a range of smaller formats in 1990s. Since the mid 1990s we have seen the impact of the international expansion of the big food retailers. The performance of the operations that underpin the retail outlets is vital. This chapter takes one such operation, the distribution process in one such company, Tesco plc, to illustrate how the retail 'revolution' has also been a distribution revolution.

Retailing has been relatively neglected as a subject of academic study, despite its importance in the economy as a provider of both goods and jobs. It is apparent that components of the 'retail revolution' (Gardner and Sheppard 1989) are worthy of detailed study, and one such component is physical distribution. While changes in retail location, outlet size, design and product range are obvious in a visual sense to consumers and academics alike, the development in distribution underpinning these retail changes are less apparent and less well understood.



This chapter aims to explain and account for the changes in physical distribution in food retailing. It develops earlier work both broadly (e.g. Fernie 1989, 1997; McKinnon 1989) and specifically (e.g. Sparks 1986) and gives a focus in particular on how one company, Tesco plc, has transformed its distribution operations in order to satisfy modern consumer and retail demands. The chapter argues that change has, and will continue to have, an effect on corporate operations as well as on consumers and manufacturers. The Tesco plc Annual Report for 1991 states:

‘The transformation of Tesco from a price-driven retailer into an integrated group of the highest quality has been measured, discussed and commented on all along the way. We could probably say that there has never been a more public repositioning of a company's image than ours.’ (p20)

However, for many consumers, commentators and academics, the crucial distribution transformation that underpins change is unrecognized.

### **3.3.1 The Challenges for Distribution**

The retail responses (Dawson and Sparks 1985) to the consumer and societal trends above require changes to the physical distribution strategy and operations of retailers. Table 3.3 links the earlier discussion of consumer effects on these responses. Each of these can be considered in turn.

The increase in store size that has occurred has seen the majority of food retailing concentrated on large superstores and supermarkets. The increase in scale of units has brought increased vehicle requirements at such stores and the need to handle larger volumes of a wider range of products. As the stores increased in size, so the

complexity of the back door increased and the potential for congestion and disturbance has been enhanced. The effect on distribution has been to force consideration of vehicle scheduling and how best to manage the large volumes needed by a modern superstore.

Consumer, Societal Change	Retail Change	Distribution Effects
Consumption	store size	vehicle scheduling and volumes
consumer behaviour	Location	ease of distribution
shopping behaviour	own brands	control of distribution
Individuals	Product extension	distribution complexity, specialist handling
Groups	Finance	cost of distribution
Society	service / value	need for consistent high-quality distribution
	technology	control by information

Source: Smith and Sparks 1993 p44

**Table 3.3 The Distribution Effects of Consumer, Societal and Retail Change**

Concomitant with the rise of the unit size has been the movement of such stores to off-centre locations. The movement away from the high streets has improved the distribution position in many cases. The new stores are located in off-centre locations, generally with good road access. Their newness means that in many cases they have been built with modern distribution requirements in mind. This has eased the problems of distribution. However, the increase in unit sizes and ranges means that congestion and volume handling remain problems, even at off-centre sites. A modern food superstore in an off-centre location has a very different physical distribution requirements from the stores it replaces, even where the replaced store is a first or second generation superstore rather than a number of small stores.

The retailer development of own brands has clear distribution effects. Since own brands are within the control of retailers for longer than manufacturer brands, closer control can be exercised throughout the distribution channel. Food retailers have invested heavily in food technology and product development (Senker 1989) and encouraged technological change in suppliers (e.g. Walsh 1991). This is well

demonstrated by the detailed involvement for example that Marks and Spencer and Tesco, for example, have with their suppliers and represents the movement from a physical distribution to a logistics orientation. Such involvement, particularly in own-brand development, provides distribution savings by better knowledge, information and co-ordination in the distribution channel. If a retailer has an own brand strategy, then manufacturer brands often have a greater battle to obtain shelf space. Individual manufacturers can gain by accurate adherence to delivery schedules and standards set by the retailers. Accurate and effective physical distribution thus becomes a competitive weapon for the manufacturers.

Own brands have been developed in existing and new product sectors. Product extension has been generated by consumer and technological changes. The development of frozen and chilled products exemplifies these interrelationships, as does the introduction of microwave cooked products. The development of new product types has increased the complexity of retail distribution. In many cases, the initial response was to allow specialist distribution companies to set up distribution channels for these products. During 1980s and 1990s, however, there has been an integration of such channels with the core grocery products, although the need for specialist handling has increased rather than decreased. The food industry as a whole has been heavily involved in legislation such as the Food Hygiene Act and throughout the distribution channel there are requirements on product handling. This is most apparent where products require special temperature environments and specific control procedures, e.g. Hazard Analysis of Critical Control Points (HACCP) (Smith and Sparks 2004a p133).

Finance is a key part of retailing, and with stores becoming more and more expensive, attention has turned to the costs of distribution. This has taken a number of

dimensions. The actual costs of the distribution activity have come under close scrutiny as their true nature is revealed by better accounting and finance information systems. At a simple level therefore distribution has to justify its expense. Obtaining the most effective system possible is a reasonable goal. However, distribution is also affected by the need to maximize selling space and avoid large distribution areas within stores. The stock therefore has to be held away from the retail location which places a premium on effective and consistent distribution. At the same time, stock holding can be expensive and wasteful and can hide proper consumer demand. The aim is to eliminate as much as is consistent with maintaining an appropriate service level. Purpose-built distribution centres themselves are expensive and retailers are concerned to make the best use of these costly facilities.

As has been indicated earlier, service and quality expectations held by the majority of consumers have increased. The need for distribution is therefore to perform the distribution activities at a 'consistently high quality level'. The move to centralized management and control is associated with the emergence of strategic planning and the adoption of a systems approach to retail operations, by the new management style among the leading retailers. As these strategies create a better focus on the consumer, so the distribution strategy and operations that underpin these corporate strategies have had to adapt to service this focus. Distribution strategy has become an important element of corporate strategy (Christopher 1997; Gattorna and Walters 1996; Walters 1988). Most strategies in food retailing focus on service and quality and thus the distribution quality must match the retail offering. The whole ethos of better service and customer care, however, means little if physical distribution is unable to get the foods to the shop in the right conditions, sizes, etc, and at the right time and at the right freshness (Smith and

Sparks 1993). Managing the retail environment and pleasing the consumer also implies better management of the distribution process and channels.

Finally, distribution is an aspect of retailing whose performance is enhanced by good information flow. This is the result of the substantial amount of technology that retailers have introduced into their operations at both store and head office levels which has delivered a major benefit for distribution. Technology enables control by management to remain effective in large stores and in chains of small stores. Laser scanning, with radio transmission to the computer control centres, is standard in warehouses and distribution centres, with the replenishment orders from the stores being transmitted electronically to suppliers and distribution. Communications and payment between retailers and suppliers were put onto a new level through electronic-data interchange systems, such as Tradanet (e.g. Hendry 1995; McKinnon 1990). The important point to note is that there is an increase in the level of control of all aspects of the operation, which is the result of technological data collection, transmission and interpretation. Technology has been applied throughout the distribution channel to facilitate rapid and accurate information flows to help with the timely product distribution. As illustrations, Walters (1988) and Belussi (1987), provide detail on the importance of technology for Benetton in linking retail sales, distribution and production. Distribution is now a part of retailing that is controlled by information rather than by just doing.

Following on from technology introduction at the point of sale is the better matching of products and product availability to consumer desires and needs. Examples abound, particularly but not solely in the fashion trade, of how technology is being used to ensure that the retailer is stocking in the store what is selling rather than what the

retailer hopes will sell. Retail buying and merchandising retain elements of retail knowledge and risk taking but increasingly consumer behaviour patterns are used to channel the knowledge and help decision-making. Merchandising and buying are becoming increasingly dependant on information technology assistance and this also then impacts on distribution practices, taking account of local variations.

The discussion above has demonstrated the range of effects and pressures that have faced retail distribution due to the changes in consumers, society in general and retailing. In addition to the effects noted above, it is also apparent that, as companies have grown bigger and become more successful, so the requirements on the distribution function have increased and the pressures, in terms of consistency and quality of performance, on running a multi-locational system have expanded. Stock has to be controlled not only in a horizontal dimension but also in a vertical dimension within the distribution channel. The managerial task in achieving this has become harder and more complicated as a result of the changes discussed above.

The main distribution responses to the managerial complexities have involved centralization and subcontracting. Centralization has involved the replacement of multiple stock-holding points by one larger stock-holding point. For example, the back-rooms of many retail outlets can be replaced by a centralized distribution centre. This centralization saves valuable retail land from being used as storage facilities but also allows the flow of products to be regulated to the stores. There are thus operational and control reasons why centralization has been an attractive option. At the same time this move to centralize facilities has allowed the subcontracting of distribution to be considered. Distribution specialists often merchandise for food retailers but they have now taken over many core operations. There are arguments for and against contract

distribution, but one benefit is that it has released food retailers from the direct issues of human resource problems and the financial issues associated with distribution. There has been a major expansion of the role of specialist distribution contractors in food retailing's centralized distribution.

In the same way as retailing has become more centralized, so too has the specialist distribution market. The effect has been to have distribution activity organized by a small number of large companies at the various stages in the distribution channel. This exchange among large companies has increasingly become computerized and electronic in nature. Electronic links promote closeness in the distribution channel and also help with delivery flexibility and the sharing of forward planning information. In this way the service and cost trade-offs can be better organized and a more effective and efficient distribution system is developed. The changes in distribution operations as a consequence of the changes outlined above can be illustrated through the extended discussion of physical distribution in Tesco.

### 3.4 Tesco Past: Establishing Control Over UK Retail Distribution

The development of Tesco is well documented through journalistic accounts of the company's history (Corina 1971; Powell 1991). Tesco is Britain's number one food retailer and Europe's number one with annual sales of almost £43bn in 2005/06 from 58 million sq ft of sales area in 2,711 stores worldwide, (Tesco plc 2006). Much of this sales area in the UK is in the form of 'conforming' superstores, i.e. off-centre, large, single-storey buildings with associated free ground-level car parking. Over 75 per cent of profits come from such stores. A conforming store stocks more than 16 000 products across all major product groups in food and grocery. While mostly self-

service, counter service is provided for departments such as delicatessen and fresh fish and other in store departments e.g. Bakery. Over 50 per cent of products are own brand with a particular own-brand emphasis in fresh food. Tesco recognise that customers want a range of retail formats for their various shopping needs. So there is a range of sizes and locations in addition to the edge of town superstore; the large Extra, with its full range of non-food; the city Metro store for the needs of the office worker, e.g. Covent Garden, London; and the fuel-linked Express, which appeals to the motorist on the move.

This view of Tesco is, however, far removed from the origins of the company. Tesco made its name by the operation of a 'pile it high, sell it cheap' approach to food retailing. Price competitiveness was critical to this and fitted well with the consumer requirements of the time. The growth of the company saw expansion throughout the post-war period until the early 1970s. The approach to retailing epitomised by Sir Jack Cohen was put under pressure at this time as competition and consumer values altered.

### **3.4.1 1970s Operation Checkout and Ambient Centralisation**

Since the heyday of the era of 'pile it high, sell it cheap' the number of stores has decreased, while the average size of store has risen. This has involved a transformation of the store portfolio into several formats: extra, superstore, metro and express. Tesco emphasizes high quality, freshness and responsiveness to the customer. By keeping in close touch with its consumers, Tesco argue that they can provide better for their changing needs and wants. Their strategy has been to invest in about 20 major new stores each year. There has been enormous increase in the scale of the business between the 1960s and the 2000s. The boost to turnover began in 1977 when the



company, through Operations Checkout (Akehurst 1984), stopped giving trading stamps, cut prices by 4 per cent but also started to move up-market. From 1985 the net margin and thus profitability has been driven higher as the new Tesco took over and business efficiency gains have occurred.

The changes the customer sees are obviously focused at the store, but behind the store revolution and the changing store portfolio (location, scale, type, age) lies a distribution transformation without which the success of the 1980s and 1990s could not have been achieved and the base for the current millennium would have been insufficient.

The distribution policies and strategies of Tesco have been the subject of previous study. This chapter extends this earlier work (Smith and Sparks 1993, 2004c; Sparks 1986, 1988). There have been five main phases in distribution strategy and operation. First, there was a period primarily of direct delivery by the supplier to the retail store. Second, there was the move, starting in 1970s, to centralized regional distribution centres for ambient goods and the refinement of that process of centralised distribution; it is this phase that has received most attention. Third, there has been the development of composite distribution starting in 1989. Fourth, the advent of retail vertical control up the distribution chain into primary distribution in 1990s. Fifth, the application of retail horizontal collaboration with other companies to achieve better operating efficiency.

The Tesco distribution system in the 1970s in the wake of Operation Checkout (Akehurst 1984) almost came to a halt. The volume of goods being moved by

Tesco proved too large to handle in the timescales required. As Powell comments, quoting Sir Ian Maclarin:

*'Ultimately our business is about getting our goods to our stores in sufficient quantities to meet our customers' demands. Without being able to do that efficiently, we aren't in business, and Checkout stretched our resources to the limit. Eighty per cent of all our supplies were coming direct from manufacturers, and unless we'd sorted out our distribution problems there was a very real danger that we would have become a laughing stock for promoting cuts on lines that we couldn't even deliver. It was a close-run thing.'* (Powell 1991, p184)

Powell continues:

*'How close is now a matter of legend: outside suppliers having to wait for up to twenty-four hours to deliver at Tesco's centres; of stock checks being conducted in the open air; of Tesco's four obsolescent warehouses, and the company's transport fleet working to around-the-clock, seven-day schedule. And as the problems lived off one another, and as customers waited for the emptied shelves to be refilled, so the tailback lengthened around the stores, delays of five to six hours becoming commonplace. Possibly for the first time in its history, the company recognised that it was as much in the business of distribution as of retailing.'* (1991, p184, emphasis added)

Operation Checkout provided a short-term shock to the distribution system. There were major problems in handling the peak weeks and the increased volumes, but generally the company coped, albeit through running multi-shifts in the distribution centres. Having weathered the distribution effects of Operation Checkout, it became clear that other changes to distribution would be needed as the new business strategy

took hold. In effect, by Operation Checkout and the move up-market that followed, Tesco were changing the mission, vision, strategy and culture of the company. This included distribution operations.

The decision was taken to move away from direct delivery to stores to centralization. The basis of this decision (in 1980) was the realization of the critical nature of range control on the operations. Tesco always had delivered some products centrally but the majority had come direct from manufacturers to stores. At its peak this reached a direct to store : warehouse ratio of 83:17. In addition to being inefficient for the store operations and being unable to cope flexibly with increased volumes and quality, the system allowed almost no control or standardization of the retail outlets and of store managers. Powell uses the euphemism of 'private enterprise' (1991, p185) to describe the pricing and stocking behaviour of individual store managers. With direct to store delivery, managers were 'encouraged' to 'buy-in' extra products on secondary lines to cover stock losses. The realization of the effects this was having on the business forced the decision to end buying in and managers' deal books and allow the introduction of true stock results and range control. Centralization of control was established for the modern business. Tesco head office had to have this control if the company was to be transformed: centralized distribution was one plank in the control strategy.

Tesco adopted a centrally controlled distribution service (Kirkwood 1984a, b) delivering the vast majority of stores' needs, utilizing common handling systems, with deliveries within a lead time of a maximum of 48 hours (Sparks 1986). Six key areas of this strategy can be identified. First, there was an extension and change to the existing fixed distribution facilities, including the building of new distribution centres.

The location of these facilities was aimed at more closely matching distribution needs to the store location profile and to changes in this profile. Second, lead times improved. Improvements in technology allowed faster stock turn, allied to which was the scheduling of vehicles at all points in the channel. Third, common handling systems were used at the distribution centres and stores to handle stock replenishment more easily. Fourth, the demands of modern retailing required multi-shift working. Fifth, computer software modelled company decisions, allowing the best use of all facilities. Sixth, dedicated i.e. contract, distribution was used to meet high levels of performance. The standards are set by Tesco and monitored by them. The contractors have to meet these specifications.

The effect of this strategy for Tesco has been to produce a more rationalized network of distribution centres, which are linked by computer to stores via head office. The proliferation of back-up stock-holding points has been reduced. These centres were the hubs of the network, being larger, handling more stock, more vehicles and requiring more efficient organization. Control of the system ensures the stores obtain the goods they require. The technology enabled this control, which in turn shaped the business strategy. The implications of these changes were to alter the spatial locations of the physical distribution structure and alter the transport patterns.

Tesco have handled dry grocery and non-food products via centralized distribution for a number of years. Many developments were made during the 1980s. For example, in 1983-84 Tesco moved from wooden pallets to roll cages and from a basic to a modern computer warehouse system (Dallas) which provides computer-controlled allocation of warehouse space and computer-calculated real time bonus for productivity.

Since 1984 the percentage of sales via central warehouses has increased from under 30 per cent to over 95 per cent. By 2003, the annual distribution volume had increased to more than one billion cases delivered, out of 25 distribution centres, covering seven million square feet of warehouse area, holding 9.9 days stock for stocked products, i.e. excluding the pick by line volumes. The size of the ambient distribution centre has increased to 500,000 sq ft, e.g. Thurrock, which opened in 2002, with a weekly assembly capacity greater than one million cases, with over 4,000 live lines. There is also a very large non-food national distribution centre in Milton Keynes with automation for selected product lines. The model is implemented as the business growth requires, not only in the UK but also in the other countries in Europe and Asia where Tesco now operates, (see later).

### **3.4.2 Donald Harris Interview**

This section summarises an interview by the author, in 2003, with Tesco Board Director, Donald Harris, who was in charge of Distribution during the late 1970s and early 1980s. He also had other responsibilities. It is an opportunity to see from inside the business rationale for the Tesco centralised distribution strategy that is so evident in the twenty-year data presented in the previous section. There are only a few direct quotations; the rest is the author's summary.

A sound way to start this summary is with a quote from Harris. "*I offer Harris's Law, which is that no company ever anticipates, wild, outrageous success*". He is referring to Operation Checkout in June 1977, Tesco had made the decision to stop giving Green Shield stamps because with the high rates of inflation they lost their value and customers were not able to exchange them for the goods they wanted.

McLaurin knew that customers now wanted quality and Tesco needed to move upmarket. Operation Checkout was a resounding retail success. Market share went up from 7.8% to 11.3% in three weeks. *“The story of stamps is well known, what isn’t well told is the disaster area that became of distribution”*. The suppliers at that time were delivering direct to the retail stores. The centralised volume was low, less than thirty percent for grocery. Most of the other product groups were delivered direct. The gap between the success of the retail strategy and the failure of the supply strategy was evident to the senior directors. A great deal needed to change from the retail store to the suppliers. *“Centralisation was an imperative, it was not optional”*. Centralised product delivery in full loads allowed Tesco to negotiate a discount with the suppliers.

The strategy gradually took shape. Corporate Replenishment was the programme for transforming the stock ordering systems in store, in head office, in distribution. Taking unneeded stock out of the retail store freed up sales floor space for retail sales. Capital investment was agreed to increase the capacity of existing and building new distribution centres. Agreements were made with logistics service providers for warehousing and distribution to cover areas of the county. Modern warehouse systems (Dallas) were specified and introduced. A plan was agreed for an aggressive increase in the volume of grocery centralised. (interview end)

The strategy for the future was made. There was internal cohesion within Tesco. The supply chain was aligned through the corporate replenishment programme to retail store development. The motivation was sustainable business development to gain market share and the lifetime loyalty of customers.

That summary of those years concluded the interview, but a reflective note from the author is appropriate. He was appointed general manager at Crick dry grocery distribution centre, M1 Junction 18, in 1984 to 1986. This was a modern 250,000 sq ft. warehouse completed with the Dallas system. There were double day shifts and the weekly volume was 300,000 cases. Within those two years a night shift was started, new productivity systems were introduced, new picking methods with labels rather than lists. Distribution professionals were recruited to continue the implementation of the strategy. It was the start of the mature phase within Tesco of centralised retail logistics for dry grocery and the other stocked products groups. Harris had set up the contract distribution network, which the author then controlled from 1986 to 1990 until composite was established, which is the subject of the chapter five.

### **3.4.3 1980s Composite and Contract Distribution**

In 1989 Tesco had 42 depots in total, of which 26 were temperature controlled. That in itself was a massive reduction from the plethora of small locations (including back-ups) found in the 1960s and 1970s, but was still capable of improvement. Fresh foods were basically handled through single temperature, single-product depots. These were small, inefficient and only used for part of the day. Tesco had reviewed the service the network gave the stores and implemented improvements in all product areas in 1986 and 1987. This meant, for example, in the short-life provisions network, that the stores received more frequent deliveries from a rationalized number of depots (from eleven to six). Investment was made in the Dallas computer system in the frozen depots and accounting and budget changes allowed a more accurate idea of the cost of distribution.

The tactics in the late 1980s were to make as many improvements as possible in order to give the stores a better service. But, there were still some disadvantages of the network. First, each product group had different ordering systems. Some were designed by the distribution contractor for their general use and not sympathetic to Tesco needs. This complicated distribution. Second, with so many sites it was prohibitively expensive to have on-site Tesco quality control inspection at each location. This meant that the standards of quality desired could not be rigorously controlled at the point of distribution. Third, because only single product groups were handled, each store's delivery volume was low. Hence, it was not economic to deliver some products to all stores to maintain the best quality, as some goods require a temperature-controlled environment during delivery. As single products in warehouses they had to be carried on separate vehicles, which meant that five vehicles were needed to deliver the full range of products to each Tesco store. This added complication and congestion, and was costly. Fifth, it was realized that the network would neither cope with the growth Tesco forecast in the 1990s nor, as importantly, would it be ready to meet expected high legal standards on temperature control in the chill chain. These factors combined to revise the changes necessary to meet emerging operational requirements

The produce depot at Aztec West in Bristol was opened in 1986 and represented the best of the old network. Tesco could have made further investment in the traditional single-product distribution systems, upgraded the depot and transport temperature control and put in new computer systems, but would still have achieved overall a poor use of resources and therefore less than optimal cost efficiency. Tesco decided that they needed a new dimension in their distribution strategy to provide an upgraded service to stores for all their temperature controlled products. The business



strategy had moved on from the watershed of Operation Checkout to take advantage of the new quality-driven demands. The strategy of composite distribution was planned in the 1980s to take effect in the 1990s. A subsidiary requirement of this development was the importance of ensuring continuity of service during the changeover period from old to new so that the transition was seamless.

The major change to the centralization strategy as presented above was that the company now concentrated its distribution further by focusing on the development of the composite distribution network. Table 3.4 identifies the position before and after the introduction of the composite system.

Distribution Trends	Pre-composite	Post-composite
regional depots	single temperature & small	large & complex
Centralization	about 70 per cent	increased to 85 per cent
stock holding	high in store	low in store & depot
delivery frequency	less than daily	daily
identify costs	some case rate	all costs known
chill chain control	single temperature	rigorous control for freshness
computerisation	half telesales	total integration

Source: Smith and Sparks 1993 p58

**Table 3.4 The Impacts of Composite**

Table 3.4 suggests that there is a more effective and transparent system of distribution in place and that the total efficiency of the chain has improved. Composite distribution enables temperature controlled product, chilled, fresh and frozen to be distributed through one system of multi-temperature warehouses and vehicles. Composite distribution used specially designed vehicles with temperature controlled compartments to deliver any combination of these products. It provides daily deliveries of these products at the appropriate temperature so that the products reached the customers at the stores in the peak of freshness. The insulated composite trailer can be sectioned into one, two or three chambers by means of movable bulkheads. There is

independent control for up to three temperature regimes. For example, frozen products at -20 degrees Celsius can be carried with fresh meat at +1 degree and bread and bananas at +12 degrees without affecting product quality. The size of each chamber can be varied to match the volume to be transported at each temperature. The composite distribution network in the UK, including Northern Ireland, now has ten centres, one of which, Southampton has a sortation system. Centralizing distribution of these products in this way reduced costs and improved sales and productivity through improved quality of product and service. These ten centres replaced the 26 single temperature centres in the previous network.

Each of the ten distribution centres services a region of the country and approximately 60 stores. The sites are all close to key motorway intersections or junctions, which allow rapid access. Of the ten composite centres, Tesco manage five. The remainder are operated by specialist distribution companies, three by Wincanton, two by Exel Logistics. This mix enabled a comparison of performance of the Tesco centres and the subcontractors as a league table of performance.

Composite distribution provides a number of benefits. Some derive from the process of centralization of which composite is an extension. Others are more directly attributable to the nature of composite. First, the move to daily deliveries of composite product groups to all stores in waves provides an opportunity to reduce the levels of stock held at the stores and indeed to reduce or obviate the need for storage facilities at store level. All short-life products are received by each composite distribution centre during the afternoon and evening and delivered to the stores before trading commences the next day. Tesco call this the first wave. Longer-life and ambient products, which are stocked lines, are delivered to stores on second wave, which is

between 8 am and 10 pm. All deliveries are made at prearranged times. Tesco composite distribution centres have achieved on-time delivery in excess of 95 per cent of occasions. They have done this despite adverse weather and traffic conditions. Given this operating procedure and performance level, the potential for stock reduction is clear. In aggregate terms, the changes in distribution stock position in the company have improved continuously. Over the 1980s, the changes have succeeded in halving the stock days in the system.

The second benefit of composite is the improvement of quality with a consequent reduction in wastage. Products reach the store in a more desirable condition. Better forecasting systems minimize lost sales due to out-of-stocks. The introduction of sales-based ordering produces more accurate store orders and more rigorous application of code control results in longer shelf life on delivery, which in turn enables a reduction in wastage. This is of crucial importance to shoppers who demand better quality and fresher products. In addition, however, the tight control over the chain enables Tesco to satisfy and exceed the new legislation requirements on food safety, (Smith and Sparks 2004c).

Third, the introduction of composite provided an added benefit in productivity terms. The economies of scale and enhanced use of equipment provide greater efficiency and an improved distribution service. Composite distribution means that one vehicle can be used instead of the five needed in the old network. The result is reduced capital costs and less congestion at the store. Within composite, changes such as inbound scanning and radio-linked computers on fork-lift trucks further enhanced productivity. In essence, throughout the system there is an emphasis on maximizing productivity and efficiency of the operations.

The introduction of composite was not a simple procedure. Considerable problems were encountered and solved. This has involved close examination of costs, which has enhanced the need to work closely with suppliers and distribution specialists. There are detailed performance measures, which focus on the improvement of service and cost against which specialists are measured. Fundamentally, the move to composites has led to the centralization of more product groups, the reduction of stock holding and its faster movement along the channel, information sharing via Tradanet, the reduction of order lead times and better code control for critical products.

There were certain issues that existed even post-composite. First, the development of computerized systems takes a long time and is costly. Second, there is a need to maintain continuity of service to retail, which means that the implementation of improvements must be invisible to distribution's customer, the retail stores. Third, the cost of primary distribution remained within the buyer's gross margin and was not identified clearly and separately. This cost had to be substantiated indirectly by talking to suppliers and hauliers. Finally and most importantly, certain sectors of the supplier base were fragmented and not fully organized to the needs of retail distribution. It was that fragmentation which made the task of securing further permanent improvements difficult.

The most significant operational issue concerning suppliers was the gap between the ideal and the actual supplier delivery profiles during the day and the impact this was having on the punctuality of first-wave deliveries to the stores. The operators had to forecast the hourly patterns of their staff in order to organize them into correct shift patterns throughout the day. Other important but related issues were the motivation

of the work-force during these changes, accurate planning for the peak week demand by hour through the busiest days and maximizing the use of capital investment in the warehouse and transport.

To address the problem of better scheduling deliveries to depots from suppliers, particularly fresh foods, detailed rotas were established to ensure that the composite centres did not receive all their products in a short time window at the end of the day. Close liaison and new methods of ranking products helped to overcome the problems of delivery compression (Smith 1992). Thus, the productivity of the composites and the effective capacity of composite depots is increased.

By 2003 not only were there ten large composite distribution centres in the UK, including Northern Ireland, each capable of assembling more than a million cases per week, but in order to increase the volume capability of those composites, Tesco had implemented a change to its frozen strategy by commissioning a new automated frozen distribution centre at Daventry in 2001 with 2,500 live lines. This national frozen centre serviced Tesco stores by delivering through the composite distribution centres. This strategy enabled the frozen chambers to be converted to chill chambers at the composites, thus releasing extra volume capability to service Tesco business growth. This national frozen distribution centre also provided Tesco with an opportunity to reorganise its frozen primary distribution network, (see later).

#### **3.4.4 Computer Data Flows**

The composite centres are linked by computer to head office to pass product demand and the data to monitor and control the operation. For all products handled by the composite centres, forecasts of demand are produced and transmitted to suppliers.

Composite distribution operates with no stockholding of the fresh products. The aim of the system is to allow suppliers to have a basis for preparing products. This is particularly important for short-life products where the aim is to operate a demand pull, just in time system from factory through the composite centre to the store. To meet such targets on delivery each supplier needs information on predicted replenishment schedules.

This sharing of information is part of a wider introduction of electronic trading to Tesco. In particular, Tesco built a Tradanet community with suppliers (Edwards and Gray 1990; INS 1991) for both direct to store and distribution centre deliveries. This provided a number of benefits. Improvements to scanning in stores and the introduction of sales-based ordering have enabled Tesco better to understand and manage ordering and replenishment. Sales-based ordering automatically calculates store replenishment requirements based on item sales and generates orders for delivery to stores within 24 to 48 hours. This information is used via Tradanet to help suppliers plan ahead both in product and distribution. Delivery notes, invoices and other documentation including e-mail can also be sent by Tradanet. An INS report, quoting Tesco, states:

*'This represents a further reduction in stockholding without any drop in service levels. Indeed the service often improves because suppliers are no longer dependant purely on their own forecasting - there are fewer surprises and we are developing a better understanding of each other's business.'* (INS 1991, p4)

In 1997 Tesco gave a commitment to share information with its suppliers. They could have the information they wanted; in return, Tesco wanted them to dedicate

resource to focus on Tesco customer wishes and then provide appropriate product offerings. This commitment complemented the change in commercial structure to focus on category management. Tesco wanted to move on from the traditional single point of contact with suppliers between the buyer and the national account manager to a more complex interaction with suppliers in which different functions worked together. This commitment to share information required system support to give the visibility of the same information to both Tesco commercial teams and their supplier teams. Tesco set up a strategic development with GE Information to create a commercially secure data exchange system based on Internet principles; it was called Tesco Information Exchange [TIE]. A limited number of key suppliers then joined the pilot phase before a phased roll-out was implemented. Promotion was a key area identified through Efficient Consumer Response [ECR] as an opportunity to provide a better offer to the consumer, a simpler operation to manage at all stages and a cheaper supply chain cost by avoiding the waste of overstocking or large fluctuations in demands

### **3.5 Present: Tesco Retail Goes International .**

#### **3.5.1 The International Retail Operation**

*“Tesco is now recognised as an International Group.”* John Gardiner, Chairman, (Tesco plc 2003, p2)

This process of becoming an international retail operation started in the mid 1990s, when Tesco embarked on a long term strategy of building a profitable international business of scale in Europe and Asia. Within ten years, by 2006, Tesco had successfully established that retail presence; in Northern Ireland and the Republic of Ireland; in Eastern Europe: Hungary, Poland, Czech Republic, Slovakia; and in Asia: Thailand, South Korea; Taiwan, Malaysia, Japan, and now China and USA. It has

already become the market leader in five of those international countries, in addition to being number one in the UK. By 2006 that overseas operation accounted just over half the Tesco Group retail space, 56%, (Tesco plc 2006). There is a big opportunity to leverage the scale of those markets and Tesco is applying itself to gain the dual benefits, of local market awareness, and the transfer of best practice from the UK.

One of the lessons that Tesco does not have to re-learn, is the importance of expertise in supply chain logistics in gaining competitive advantage. It has gained a great deal of ability through its strategy of learning the value of taking control over the whole length of the supply chain, from producer to consumer; as detailed in the earlier part of this chapter. This has provided Tesco with expertise, which it has transferred as best practice to support its international operations outside the United Kingdom.

### **3.5.2 Tesco.com**

In 1995 Tesco conducted a pilot in home shopping at Osterley Store near Heathrow. Customers could use a variety of methods: telephoning a customer service centre, fax, personal computer with CD ROM or the Internet. A menu-style screen gave the customer the choice of selection process for shopping, for example, by accessing a product category or new products etc. These orders were then picked at the store by Tesco staff and could be collected or delivered to the customer's home or drop off point. This pilot was extended to ten stores in the London postcode area in 1997. By 2003 the annual turnover of Tesco.com had increased dramatically to £447 million, reaching 96% of the UK population, serviced from local Tesco retail stores using a fleet of 1,000 temperature controlled vans delivering 110,000 orders per week, which is a 65% share of the UK internet grocery market. It is now established in the Republic of Ireland, where it reaches 70% of the population; and in South Korea, with



[www.homeplus.co.kr](http://www.homeplus.co.kr), where over 70% of the population have internet access. In the USA, Grocery Works, which is a partnership between Tesco.com and Safeway Inc, has established coverage in Portland, Oregon, San Francisco and the Bay.

In the UK, Tesco.com has 20,000 grocery lines, 1.2 million books, 25,000 videos, 7,500 DVDs and 1,800 electrical goods, as well as special sections for flowers and wine. The Tesco.com home shopping model uses personal shoppers to hand-pick all their customers' shopping in the Tesco Store, which is then delivered to customers homes, at their convenience.

This is clearly a successful model, which has thrived in contrast to competing home shopping models, such as Webvan in USA, which was in vogue in 1999 but quickly went out of business. The benefit of the Tesco.com model is that the local retail store provides a wider selection of products for consumer selection than any single distribution centre, since each distribution centre is specialised for specific ranges of product, e.g. fresh, frozen, grocery, wines, health & beauty. The retail store is the place where all these product channels come together in one place. The home delivery van is designed to load products at different temperatures, and the van drivers are part of the retail store team, so they know about the latest promotion information.

The contrasting model that was implemented by Webvan and their followers was a dedicated warehouse look-a-like shop set up solely for picking customers' orders. Such a facility has the advantage of being built at lower cost, in a warehouse-type location, where a higher productivity picking rate can be achieved. This model could work in a population of high home shopping density, such as London. Ocado, the

Waitrose version have opened a dedicated home shopping warehouse in Hatfield, north of London, UK in 2002. Only time will tell if that remains profitable.

### **3.5.3 Future Issue: The Environment**

The environment is a topic that increased in importance in the 1990s. There are two aspects to this topic: air quality and global warming. The first concerns the impact on air quality and health from vehicle emissions. For freight, which uses diesel, it is about low sulphur fuel with a trap to catch the particulates. The measurements are taken at a series of kerbside locations and it will be high priority to achieve the agreed targets. The second has its origins in the Rio summit when governments agreed to take action to reduce the causes of global warming. This was later confirmed at Kyoto 1998 with the agreements on targets for reducing carbon dioxide emissions. The target for Britain was a reduction of 15 percent by 2015. Both sets of targets will create external pressure on freight transport to implement appropriate solutions.

A part of the solution will come from research commissioned by DETR, DoT, through Heriot Watt University to identify a small family of key performance indicators [KPIs] that link freight operational performance with environmental impact. Traditionally, government has used tonnes kilometres as a measure of freight activity. This particular ratio, however, is not key driver of operational efficiency. The work conducted with industry has identified five KPIs that influence the transport business and the trends in freight performance and its impact on the environment. The five ratios are: time utilisation, space utilisation, empty running, predictability, and miles per gallon. The work started in the temperature-controlled sector and has now extended to other sectors (DETR 1999; DoT 2003a, b). The end result is an industry-based measurement that both drives efficiency and demonstrates environmental benefit.

Another part of the solution will be a review of city logistics to reduce traffic congestion, improve air quality and, where practical, consolidate part loads into fuller loads for inner urban deliveries. One option is to deliver during the night but that requires a solution to the major issue of noise and residents. Whatever is done in this area needs to be realistic and practical. There is some experience from the continent where cities protect their inner core.

### 3.6 Conclusion

The aim of this chapter was to understand and account for the changes in physical distribution in food retailing by examining changes both in general and in one company, Tesco, in particular. The basic premise is that the transformation of retailing that the food consumer sees, has been supported by a transformation of distribution methods and practices. In particular, there has been an increase in the status and professionalism of distribution as the time, costs and implications of the function have been recognised. Professionalism has been enhanced by the transformation of distribution through the application of modern methods and technology. Whether the retailer now focuses on quality or on price, the importance of distribution is undeniable. As retailers have responded to consumer change and moved up-market, so the need to improve the quality of distribution has become paramount. At the price-conscious end of the spectrum, the need for low-cost distribution is fundamental to reducing the operating cost of the business. This is not to say that quality retailers are not worried about costs or that discount retailers do not care about quality, but in each case there is a guiding strategy from the business that conditions the strategy of distribution.

The Tesco study demonstrates many aspects of this transformation. In response to the clear business strategy that emerged in the 1970s, 1980s, 1990s, and 2000s. The distribution strategy has been realigned. From a state of almost decentralization and poor control, the company has moved to centralization and then composites which has enabled control to be exercised stringently and led to new methods and relationships for distribution. This is summarised in Table 3.5, which is based on the changes in Tesco distribution from the 1980s into its modern international structure. These may be summarised as new benchmarks for stocking policy and locations; new distribution centre operations and systems; widespread use of technology; new material handling systems; different management structures involving specialist distribution contractors; and the export of supply chain and distribution expertise to Europe and Asia.

	<b>Centralised control</b>
Storage facilities	Specialized depots (bonds/fast moving) composite In house and contractor management Site location and scale Owned premises Two picking methods
Inventory management	Increased product range Bar coding, date coding Fewer investment buys Reduced stock holding
Transport	Bigger trailers, less deliveries Supplier collections Multi-temperature trailers Primary distribution
Unitization	Pallets, roll cages Plastic trays, dollies Pack sizes for merchandising Pre-packs
Communications	Computerised systems Electronic mail, electronic data interchange Sales-based order, checkout plus Depot on-line real-time systems Forecasting
International	Hand-held scanners with radio frequency Export of UK skill sets to Europe and Asia Supply chain 'Tesco in a Box' Distribution on UK model (after Smith 1998 p182 updated)

**Table 3.5 Distribution Changes in Tesco in 1980s 1990s 2000s**

The development outlined above and the transformation described are not the ultimate solution. As consumers change their needs, so retailing must and will respond. As retailing responds, companies will modify their operations, not least their distribution, or be placed at a competitive disadvantage. The pursuit of increased control described in this chapter has been enabled by technology, control by information has replaced control by 'doing'. Another factor has been co-operation with suppliers rather than confrontation, as in the past. In other areas of distribution, change can be contemplated or considered. This situation in distribution is a changing one. Focusing solely on the retail outlet conceals many of the fundamental business changes that have occurred and will continue to occur as shopping behaviour changes. Focusing on the consumer, on the other hand, creates alignment between retail strategy and supply chain strategy. Tesco is a model that other retailers can follow. It has expertise in the Role of Retailer as Channel Captain in retail supply chain change. The next chapter examines the other segment of retail control over the supply chain: primary distribution and the example of the fresh food supply channel.

# Chapter Four

Tesco

Supply Channels

## 4 Tesco Supply channels

### 4.1 Introduction

The background for this thesis has so far covered the topics of retailing and retail distribution. These have not only set the scene but also allowed the reader to go behind the scenes. They have explained the nature of some of the changes that have taken place in the structure of retail distribution. These developments have provided the retailer with a competitive advantage. Retail logistics was the first segment of the supply chain that the retailers controlled directly. The second phase of control concentrated on the movement of goods from the suppliers to the retailers' distribution centres, namely, primary distribution. This chapter will begin primary distribution. Then it will explore supply channel collaboration with Efficient Consumer Response (ECR) and go into the detail of the fresh food supply channel, as this is the immediate setting for some of the case studies in chapter seven.

This extension of supply chain control gained support from the wider collaboration that was taking place between retailers and suppliers. This is the establishment of ECR projects across Europe. The chapter includes a brief account of the benefits of this collaboration. It continues with a basic account of the 'push' and 'pull' supply chain. This sets the framework for examining the specialist supply channel that provides the retailer with fresh products. It is an example of a demanding supply channel. It illustrates how one retailer took control over the fresh food channel. The next chapter five will examine the issues of managing supply chain change.

## 4.2 Primary Distribution

Primary distribution is the control of the movement of goods from the supplier to the retailer's regional distribution centres. As will be shown later, Tesco and other retailers only started to get interested in controlling this segment of the supply chain once they were firmly in control of retail logistics and the delivery of goods to their stores. Primary distribution is part of the strategy to find cost efficiencies within Retail.

### 4.2.1 Enhancements in UK Distribution

There are significant enhancements currently taking place within Tesco logistics and supply chain in the UK in the early 2000's. They build on the opportunities that arise out of the success of the centralisation and vertical supply chain control that were implemented over the previous 25 years, as detailed in chapter three. Here we shall detail two specific enhancements that are at the forefront of Tesco logistics and supply chain strategy at the start of the millennium: Continuous Replenishment and Factory Gate Pricing.

*'Our Step Change programme has delivered over £230m of efficiency savings which we pass on to our customers. These programmes have focused on primary distribution, labour schedulers and Continuous Replenishment, which has been fully implemented in our stores. This makes the shopping experience better for customers and simpler for stores.'* Sir Terry Leahy, Chief Executive (Tesco 2003, p5)

*'Our step change programme has delivered £230m of new efficiency savings this year and over £600m in the past three years. This year saw great progress with Primary Distribution, allowing us to take control of product from the factory gates to*



*our distribution centres, improving efficiency and delivering cost benefits that we reinvest in customer initiatives. All products have now been transferred to our Continuous Replenishment system. This has delivered substantial benefits to the business and reduced the time it takes for a product to get from supplier to shelf. We are now able to order seven days a week, twice a day to ensure our customers get the right product at the right time.'* (Tesco 2003, p11)

#### **4.2.2 1990s: Primary Distribution**

Suppliers and manufacturers, logistics service providers and retailers work together in the supply chain and focus on the needs of the customer who purchases the product. In secondary distribution the industry had been successful with its focus on specific objectives. By applying established skills, the operators handled higher volume throughput and achieved improved unit cost of moving goods to retail stores. The trend is particularly significant because as well as absorbing inflation Tesco have made improvements in the service to retail. The business has shorter lead times, with more frequent and more punctual deliveries with orders transmitted by Electronic Data Interchange (EDI). This is the heritage and background to primary distribution, which can be defined as: the physical movement of the goods from the despatch bay of the factory to goods in at the depot. It is the transport and any associated consolidation of goods from groups of suppliers.

The initial idea started in 1990. The purpose was to identify and implement changes that were profitable to the whole supply-chain, supplier, logistic service provider and retailer; to identify solutions in partnership with logistic service providers and suppliers that provided lowest cost for the supply chain as a whole and not just for one section at the expense of the others. Frequently this was a shared user solution,

which is different from the dedicated solution found in secondary distribution where there is total visibility of costs. Primary distribution required a change in approach and style; Tesco had to let go of that direct control and allow the appointed hauliers and consolidators greater freedom with more empowerment over the shape of the solutions.

Traditionally Tesco have bought goods from suppliers at a delivered price. There was no visibility of the distribution element of the total cost of the product. Once the scale of the cost of primary distribution had been calculated, then there was a business motivation to apply logistics resources to identify opportunities to make improvements in the organisation and structure of the inbound flow of goods. The purpose was to organise domestic UK, European and world-wide distribution networks based on analysis of those regions from which there was a high level of purchasing and the best centres of distribution excellence in those regions. Once this analysis was complete, it was then possible to appoint and set up primary networks in the United Kingdom, Europe and around the world. This was a second revolution in retail distribution but one that does not require much capital outlay; capital that was better directed to retail store development. Tesco were then able to be proactive in negotiating more competitive distribution rates as a result of the negotiation scale, the command of the sourcing of products and their expertise in distribution operations. These factors all contributed to enhanced operational efficiency and supply-chain profitability. There was a valuable cost contribution that could be made by involving the operators in identifying more efficient ways of organising primary distribution and then to helping bring those insights to the surface and create solutions that worked for all the segments of the supply chain. It was important to work in a cross-functional style within the different functions of Tesco: the buyers, supply chain, distribution. The primary distribution managers sat in the commercial areas with which they were working, for example, the

primary manager for produce sat among the produce buyers. This created a united focus on achieving good results for the business. This created the foundation for Factory Gate Pricing.

#### **4.2.3 Factory Gate Pricing**

Primary distribution had its origins and its special demand on the relationships between retailers, suppliers and logistic service providers. It emphasises the need for cooperation, with all parties working together to identify and implement good quality solutions for the whole of the supply chain. This aspect of the supply chain is being lifted to a new level of vertical control by the retailer through the strategy of Factory Gate Pricing. Factory Gate Pricing is a term that summarises the method of controlling the primary distribution segment of the supply chain, from the supplier despatch bay to the goods in bay of the retail distribution centre, by separating out the cost of that transportation from the purchase price of the product itself, and putting it into a separate primary distribution budget, which can then be controlled directly.

Prior to this, the commercial buyer used to purchase products at a price, which included the delivery by the supplier into the retail distribution centre. The gross margin, on which buyers are measured for performance, is the difference between this purchase price and the price charged to the consumer at the retail store. Hence, as can be imagined, removing the transport cost element from that purchase price, impacts on the way the gross margin is calculated and the commercial buyers have to adjust their targets accordingly. It is a major financial development within a retail organisation to implement such a change and still retain strict control over the disciplines of making individual buyers accountable for achieving the new level of gross margins during the period of transition. Factory gate pricing is a strategy that requires the cooperation of

the whole of the supply chain including the retail commercial buyers. This Tesco achieved by bringing together cross-functional teams and by the full endorsement of the policy from senior directors including the chief executive.

Naturally, the suppliers, and their transport service providers, went through quite major changes to their arrangements for the delivery of their goods to the retail distribution centres, as they implemented this policy. A policy where the detailed plans were put together by the primary distribution team at Tesco. It became a topic at industry seminars, at which not only Tesco but also Sainsbury's communicated a similar policy. This is a good example of retail moving into an area of control that had traditionally belonged to the manufacturer and the supplier. It is not surprising, therefore, that there was some adverse reaction in the industry, especially from those transport operators that had lost work as a result. The case they put forward focused on the consequences of the fact that they had lost not only the Tesco but maybe also the Sainsbury's business from a supplier or manufacturer. As a result the remaining volume from those suppliers and manufacturers, which they still had to deliver to other retailers, was no longer at a volume and delivery pattern that it was economical to do without raising the cost to the suppliers and manufacturers. This, they said, was the direct result of the primary distribution decisions made by the retailer to reorganise the consolidation of product delivery. It was now the retailer, not the supplier, who appointed which transport and distribution companies would do this work; at a price negotiated directly between the retailer and the logistic service provider.

The case put forward by the retailer, was that to maximize competitive advantage, the whole supply chain needed to be aligned with the demand patterns of consumers, and that this must now include primary distribution. They further argued

that they saw no justification that other retailers should benefit from the economies of scale derived from the major retailers who ordered the majority of the volume.

Factory gate pricing is a sign of a very mature retail supply chain. It provides both full visibility of the costs and also, the accountability to organise how the primary network is structured. It required a high level of cooperation between suppliers and retailers to leverage the benefits of a fully controlled supply chain, where the transport and logistics are organised by the retailer rather than the supplier.

#### **4.2.4 Total Supply Chain, Partnership Logistics,**

The relationship between the supplier, logistic service provider and retailer was focused to achieve a total supply-chain perspective from the supplier through to the consumer. This was called 3D logistics (CILT keynote address, June 1996). Tesco appointed a Supply Chain Development Director with this broad objective of looking ahead three to five years reporting to the Chief Executive. One of the objectives was to structure the hourly flow of goods both into and out of the distribution centres to create as big a capacity as possible without building more depots and balancing the capacity of primary and secondary distribution, this was called pipeline distribution.

An important part of this retailer and supplier relationship is the supplier collection programme within a depot's geographical delivery area. A supplier collection is where a Tesco vehicle collects product from a supplier on its way back to the depot following a store delivery. In a full year, 1996-7, this saved 3 million miles of empty running which saved 4 600 tonnes of carbon dioxide emission (DETR 1997) [Best Practice Award]. In addition there was the supplier onward delivery programme to the retail stores. This involved suppliers' vehicles which had delivered to depots or were

conveniently in the area taking goods to Tesco retail stores on their way back to their base. In 1997 Tesco initiated the programme with a three-year target of achieving the same level of benefit as supplier collection.

The drive towards partnership required a change in skills. One aspect that required some review covered decisions about when to cooperate. There are three levels of collaboration that are possible between companies : operational, middle management and strategic. The most powerful is the strategic, where there is joint agreement on areas of mutual importance. Within Tesco, the Supply-Chain Development Director was involved with major suppliers about the future shape of the supply chain together with the Commercial Directors who were increasingly focused on the importance of the long term partnership with major suppliers for product development and the scale of sourcing to support the growth of the business. This created a new framework for the strategic discussions with the logistic service providers.

This was new because traditionally the focus had been on the two-way relationship: either the retailer with the supplier; or the supplier with the logistic service provider. Tesco as a retailer viewed the hauliers as the total responsibility of their suppliers. If there was a problem with the delivery being short or late, then the retailer would phone the supplier and expect them to address the remedy with the haulier, rather than get involved in the detail of the issue that was their problem. The change was influenced by the realisation that without the involvement of the retailer, many of the solutions could not be put in place; it required three-way collaboration. Adopting such a partnership style with suppliers and the distribution industry became a conviction that was held deeply by the primary distribution team in Tesco.

Once the principles of the strategic business relationship have been agreed, then middle management can collaborate within specific functions. The most valuable were promotion planning, new product development, forecasting peak trading volumes, electronic data interchange, inventory management and exchanging information on the unit cost of distribution. The third level of collaboration is the operational focus on the efficiency of the day to day operation and listening to the issues raised by the operators. For example, one of the biggest opportunities that can be unlocked is by exchanging information on the peak and slack periods of vehicle use. Businesses are interested in improving their return on the capital invested and in having the smallest size of core fleet to meet their needs. There are peaks and troughs in the volume of demand, with the result that there are periods in the week and even in the day or night when vehicles stand idle. Each company can only go so far in terms of its own efficiency. The next step change was by mutual collaboration because by working together there was more that companies can achieve. Anything that helped to identify opportunities to take cost out of the primary distribution segment of the supply chain was a topic for the sharing of information and objectives.

The joint objective for the industry was to create the conditions in which the unit cost of primary distribution reduced year on year and, at the same time, the return on the capital invested in vehicles increased by better co-ordination and stronger confidence in the planning information. The purpose was to identify and implement profitable change: profitable to the whole supply chain - supplier, distribution operator and Tesco. The result was an important strategic alliance between primary and secondary distribution, which examined the peaks and troughs in vehicle utilisation to find those there were complementary. By using the advantage of the right sort of

information, companies could act to their mutual benefit. One way of creating an opportunity was to examine the movement of equipment such as cages and trays which could release these other opportunities.

There was one particular aspect of this collaboration, which had great potential. It was the onward delivery of assembled orders from the RDC's to the retail stores. It required some changes in trailer design. The dry freight trailer delivered goods on wooden pallets into the depots. If the distribution operator retro-fitted strapping equipment in the trailer to secure the cages of assembled stock, then it created the possibility of delivering to retail stores at peak times. This was not a new concept but it was proving to be one that was difficult to get the industry to implement. The industry needed to generate a critical mass of 1500 such trailers. The application in the temperature-controlled environment required a bulkhead and a second evaporator. A critical mass of 500 was needed to generate confidence among the transport operators that the right equipment was available when it is needed. They had to depend on this in their transport operations.

These developments, in the decades preceding the millennium, took Tesco as a retail distribution operator from a position of being in far less control than its rivals into the very forefront of logistics expertise. Tesco distribution and supply chain became world-class leading edge in the design and implementation of such complex and large scale organisations delivering tangible competitive advantage to the retail operation in their focus on consumers for their lifetime loyalty. This expertise proved to be one of the major strengths for Tesco as it embarked on its international expansion into Eastern Europe and Asia. The UK company was able to transfer best practice skills to the local management, from store design and operation; the adaptation of the product



offering; right through to supply chain and logistics. At the same time the UK operation continued to implement major step change enhances.

#### **4.2.5 Continuous Replenishment**

The process of centralisation reached a mature stage in the UK by the early 1990s, and this, together with the huge developments in information technology and data network flow capacities had, by the mid 1990s, positioned Tesco supply chain operations capability at an excellent level of competence and expertise. The synergy created by these two major strategic drives made it possible to start to think about a further step change in supply chain logistics: Continuous Replenishment.

Continuous Replenishment is the synergy of scale that arises out of the high level of consumer demand combined with a centralised supply chain and a nationwide data flow capability. The recipient of the benefits of this synergy is the better availability of products for the consumer, matched to the anticipated daily demand, which itself varies according to the day of the week, e.g. Monday has low demand and Friday has high demand. The issue facing the retail ordering system is the need to match product supply with consumer demand, and achieve the twin requirements of providing continuous availability whilst at the same time eliminating overstocks and product waste which occur when too much stock is delivered on a particular day.

In addition to this daily and seasonal variation in demand there are other drivers of high and low demand for products; for example, promotions of a particular product line or pack size. Promotions not only create surges in demand for the promoted product line but also suppression of demand for the rival product lines or alternative pack sizes. When consumer demand surges, as in promotions, product needs to flow

through the supply chain faster and in higher volumes. In contrast, when consumer demand dries up or withers, as the demand switches away from the non promoted rival product line or pack size, then the product flow needs to be reduced to prevent product wastage or money being tied up in overstocks. This conundrum has been around for a long time and retailers keep looking for new solutions by examining the structure of their current ordering methods and any limitations that has on allowing good flexibility to match supply with demand.

Tesco examined its supply chain and the legacy of the information systems used in retail ordering. The major change in retail operations has been the move to 24 hour, seven day a week opening of the retail stores and the need to place daily orders on suppliers. The legacy system had originally been designed for a five day, 8 am to 6pm retail store opening, which allowed computer maintenance shut down overnight and at weekends. Various enhancements had been implemented to upgrade the systems for 24 hour, seven day a week live operations, not only for the stores, but also for the suppliers ordering processes. The time had come to take a radical review.

This review covered the full range of product types that the company was selling; both fresh and stocked items. In order to convey the limitations of the legacy system, Tesco used the imagery of city traffic lights, in which queues are formed while the lights are on red, waiting for the system to allow movement when the lights turn to green. This represents the batch system of order processing which is based upon a structure of placing products into product groups, and then taking the group as a whole and releasing the orders at the designated time. This legacy system treated each product in a product group in an identical way. Although this still allowed products to flow through according to the different levels of demand, there were limitations on its

flexibility. This sometimes resulted in either product not being available for consumers, or too much product being delivered, so there was stock left over which was in excess of the requirements of consumer demand. This stop – go structure existed at several places along the supply chain; waiting for all the orders from all the stores to be received at Head Office, waiting for all the product to be produced by the suppliers, waiting for all the product to be delivered into the distribution centres, etc. When added together, all this waiting time became a significant opportunity for improvement, but it meant that there would have to be expensive systems rewrites to achieve this step change in the supply chain.

The new model, Continuous Replenishment, uses the imagery of a motorway flowing freely without any queuing caused by traffic lights. The key difference in perspective was to identify products by their consumer demand characteristics, rather than view them as items just belonging to products groups, e.g. yogurt as dairy, and baked beans as tinned grocery. Then the company could restructure the organisation of the supply chain, in a way which allowed products to flow through freely, at the rate appropriate to their consumer demand characteristics. For example, a product on promotion needs a rapid, high volume, responsive supply. In contrast, a product that is adversely affected by another product being on promotion, needs their supply cut back quickly to a minimal level. While a product that is on its average or normal demand, needs an average or normal level of re-supply.

It is all a matter of setting the right pace; that is appropriate to each product, which matches supply with actual demand. Tesco and their suppliers have worked together to remove stock from the supply chain so that it is at a bare minimum and then

rely on customer demand forecast information coming down daily to drive product supply through distribution to retail store.

There was already a great deal of progress that had been made with the introduction of Composite Distribution, when new ordering systems were developed for the fresh food products. These products were not held in the distribution centre as stocked items, but ordered daily from suppliers in the exact quantities required to meet retail demand. The system developed is called Pick by Line or Pick to Zero, (see the earlier section on composite distribution). The order cycle on those products was 48 hours, which was the minimum time the suppliers needed to process the fresh foods, especially fresh meat and poultry. The basis for the order given to the suppliers is the anticipated retail demand, which is calculated using actual customer demand and then making some adjustments through applying a range of factors, e.g. day of the week, weather, etc. Tesco, later, went to a higher level of mathematical sophistication: it took a further order from the stores 24 hours before delivery, which was used for the specific store allocation, when the product arrived from the suppliers. Like all excellent recipes, the precise formula remains confidential to Tesco.

This represented a major step change in the structure of the ordering process between the consumer and the producer. For the first time the producer received anticipated consumer demand rather than a pipeline order, triggered by stock levels from a stockholding distribution centres, which is the normal basis for the orders for stocked items, e.g. canned baked beans, wine, washing powder.

All this, in a system where the scale is huge and the product variety is enormous. In many ways, this represented an ideal pipeline flow process; but it did put

great pressure on the suppliers not only on their production processes but also on their logistics. It is an important example of the supply chain and logistics being an essential part of marketing, by delivering the retail promise: product variety, freshness, availability, all at a good price.

A new category of supply chain characteristic has emerged as a result of the move towards continuous replenishment; it is a category titled Flow. This is the most interesting development to arise from continuous replenishment. It applies to fast moving long life product lines, e.g. 2 litre lemonade, UHT milk cartons. These Flow products only remains in the distribution centre for less than a day. The level of stock in the distribution centre is no longer one of the triggers for the order quantity, which the supplier receives. As a result the supplier is directly in tune with consumer demand. This is one of the ultimate goals of any supply chain.

This is a dramatic example of the changing pace in the supply chain; but a pace that is geared to what is appropriate for the consumer demand. Not every product line has to be rushed at the highest speed to the consumer; that urgency is reserved for those product lines where it is truly important because it delivers the maximum benefit to the consumer, the retailer and the supplier.

It is evident that this level of development has been driven by the retailer. The retailer is the leader in organising the supply chain, in cooperation with the suppliers and the logistics service providers, who run the transport and distribution centres. The focus is the consumer. If the consumer wins, everyone wins.

*“It is all a matter of the aligning the whole of the supply chain with the consumer”.* (Stuart Ross, Supply Chain and Distribution Director, Tesco; Interview, 2003).

Another aspect of this development is the cost of labour within the retail store itself. This analysis of the allocation of costs along the length of the supply chain from supplier to retailer reveals that the development of secondary and primary distribution in UK food retailing has reached a stage of excellence and maturity. This has positioned the retailer to examine more closely the next important component of the total supply chain: the labour cost of the last 50 metres, which gets the product from the delivery vehicle to the customer at the shelf at the retail store. This 46 percent (Tesco 2030) of the total cost is not a sign of failure, but rather of success. The world class excellence of the supply chain up to the retail store, on the one hand reveals the opportunity of seeing the cost of labour in the store replenishment function, and on the other hand, provides the means and flexibility to provide solutions earlier in the supply chain, that will assist in reducing the labour cost in the retail store. An excellent example of this is the use of the dolly with fast moving products, e.g. Irnbru in Scotland. The unit is the orderable quantity from the store, it is wheeled through the whole supply chain: supply dispatch bay, the distribution centre and to the retail selling point in the store a minimal labour effort. These are good examples of collaboration between retailer and suppliers. A collaboration promoted by the industry through Efficient Consumer Response.

#### **4.3 Efficient Consumer Response**

The Efficient Consumer Response (ECR) programme has delivered benefits over its first decade since 1996 through a series of projects. It consciously approaches

its task on a collaborative basis. Their motto is “Working Together to fulfil consumer wishes, Better, Faster and at Least Cost”. The programme is co-chaired by a retailer and a supplier. During its early years the supply chain director from Tesco co-chaired with the director from Bird’s Eye Walls. In 2006 the ECR UK Executive Board Co-chairs are: The Group Supply Chain Director, Nestle UK and the Group Logistics & Business Systems Director, Somerfield Stores plc. The programme is supported by the Institute of Grocery Distribution, <http://www.igd.com/ecr>. The intention here is to provide a brief account. This will be followed with a contribution from a retail buyer. Both will place the supply chain change in the broader context of retailer – supplier collaboration.

#### **4.3.1 ECR Summary and Benefits**

ECR UK was established in 1996 and is managed by Institute for Grocery Distribution (IGD). It had begun in USA in 1993. It arrived in the UK in a market that was characterised by confrontational working relationships where businesses focused on creating value and efficiency within their own four walls. As well as a focus on customers, ECR attempts to break down barriers between trading partners and internal business functions; barriers that stop an organisation working effectively. The initiative is supported by leading UK retailers, suppliers and wholesalers, who participate in industry working groups. It also has conferences, such as the Supply Chain Summit in 2006. It offers free blue books on areas including Retail Ready Packaging and On-Shelf Availability to help businesses understand best practice within the industry. It has played a leading role in the collaboration movement with the grocery supply chain over the last ten years. Twenty-three countries throughout Europe and including South Africa have their own ECR Initiative.

Collaborative Learning is a new initiative designed to help trading partners apply ECR collaborative practices to encourage change in behaviour, and accelerate improvement of business results in key areas. The free ECR UK blue books cover important issues. 'Availability – Closer to the Shelf', describes the further efforts of the UK Food and Grocery Industry to ensure products are available on the shelf. 'Retail Ready Packaging', deals with Branded and Own Label suppliers working jointly with retailers. 'Synch and Swim', Provides a straightforward introduction to data synchronisation that is a seamless sharing of information, enabled by technology. 'Transport Optimisation', helps understanding of key cost drivers, analysis of supply chain costs and how to develop an appropriate distribution strategy. All these examples demonstrate that the work of ECR UK with IGD is practical and available for the whole industry to access. In 2005 the projects taking place were: Value creating beyond price; Optimal Shelf Availability (OSA); Shrinkage; and Consumer Relationship Management (CRM). Further information is available are [www.ecrnet.org](http://www.ecrnet.org); and this information was gathered from <http://www.igd.com/secondlevel.asp?menuID=87>. Accessed 27-08-2006.

An illustration of this collaboration is given in the Fresh Food Sector, which will be examined for fully later in the chapter. This interview with the retail buyer for produce from the mid 1990's demonstrates how attitudes were changing.

#### **4.3.2 Retail Buyer View**

In this section the author summarises an interview with a Tesco Produce Manager with a trade magazine (Retail Week) in 1995. The summary will include direct quotes from the buyer, Andrew Grant. The purpose of this inclusion is twofold. The first is that it is a snapshot in time during the evolution of the Tesco trading structure. The second is that it represents the buyer's changing attitude towards



suppliers that is contemporary with the work the author was doing with primary distribution. It informs the background to the cases in chapter seven. The company financial turnover in 1995 was ten billion pounds. Ten years later in 2005 it is thirty seven billion. In 1995 the Tesco fruit and vegetable sector was worth £3.9 million, vegetables, £2.3 million and fruit £1.6 million. The biggest selling line was bananas. The company sourced from 188 suppliers based in 60 countries worldwide. The average product spend per person was £3.80 per visit on an average of 36 visits per year. Produce accounted for 8.5% of Tesco shopping sales space.

At the time the national fresh fruit and vegetable sector was valued at £4.5 billion. In 1995 it was predicted that by 2000 the supermarkets' share would reach 80%. The commercial reality was that over two thirds of the fresh product sold in the UK was controlled by less than a dozen retail groups. The buyers travel the world to arrange their programmes and often negotiate directly with the suppliers. At the time it was noted that: *“Improved ordering systems are working their way along the distribution chain as retailers become more responsive to consumer demand through information gleaned directly from the checkout.”* At the same time larger logistics companies were buying up family haulage businesses delivering produce. The Sheerness Product Terminal was inaugurated late in 1995. It is a deep-water port that received ships from around the world and handled 350,000 tonnes in 1994. Trade sources estimate it is the largest investment ever seen in fruit and vegetable handling and distribution systems. The producers were finding themselves working more closely with the big retail chains as they bid to reduce costs, but also seek faster distribution and retail flexibility.

The Trading Manager for Tesco vegetables, Andrew Grant describes his dual role. *“Half developing the long term produce business strategy; half checking the produce needed is in depots”*. He describes his goal, *“for Tesco to be and to be seen as the very best and biggest fresh produce retailer in the country”*. He explains the competitive situation: *“We are just ahead in volume terms, though AGB puts Sainsbury’s ahead in value”*. There have been major changes; *“Produce at Tesco has gone through a revolution over the past two years. We were very much second players, but the days of ‘pile it high, sell it cheap’ are well and truly gone. Tesco is now the market leader in bananas, apples, pears, new potatoes, salad vegetables, root vegetables, tropical fruit and soft citrus. The key is having the best quality produce and having it consistently. It’s one thing to get good quality at the peak of the season, but not so easy to get it on the shoulders of the season. Now that we can do that and our customers recognise it.”*

The trading management structure had been reorganised on the principles of category management and multi disciplinary teams including technical advisers and marketing.

There had been an overhaul of the supplier base using the trading supplier scorecard. This created a more objective assessment of suppliers. It provided continuity of strategy because the assessments were formalised and handed on from one buyer to the next as they changed. *“Three years ago you could have looked at any major line we carried and seen we were getting it from 12 to 15 suppliers. Now we source from maybe just three or four suppliers, even for the big lines. Those suppliers benefit from massive volume increases and we can focus on the best ones”*. That raised the topic of partnerships, which in 1995 were very topical. This interview marks the end stage of the transition from ‘transaction based’ negotiations to ‘collaborative, non-adversarial’ negotiations. Tesco had been operating a partnership policy for the two previous years. Sourcing from fewer suppliers allows Tesco to get closer to each one.

Grant explains: *“Plenty of people see this partnership concept as cosy, friendly, let’s all hug each other sort of thing. It’s not like that at all. The relationship is hard-headed, clear cut and not necessarily pally. The purpose is to make sure the two companies are going in the same direction and have the same aims. We identify who are the best in their area. We are interested in forward-looking companies. We look at their management teams. If their philosophy fits with ours then the two businesses can fit.”* And what about that difficult issue of price, that is probably still adversarial. *“Discussions with suppliers on price always used to be vicious, but now there is much more talk about investment plans.”* (Retail 1995; Shapley 1995)

This links with the forward strategic planning task, which is a major part of his job. *“We have to look four or five years hence and make sure there will be enough class one produce in the world to meet demand and that’s why it is important we source from companies who are forward thinking, working out how much more land, machinery and pack house facilities they are going to need in the future and not just standing still.”* There had been strong growth in the first part of the 1990’s following the introduction of Composite Distribution with its temperature controlled supply channel strictly controlled from producer to consumer. Although Grant does not refer to distribution explicitly, the author knows from his operational experience that the support assisted sales growth. *“The produce business has grown between 25 and 45 per cent a year for the past three years. By the year 2000 we’ll be shipping Christmas week volumes every single day”.* Finally on the topic of plastic trays: *“We have built a whole series of recycling depots to deal with this move. Tesco has been using plastic trays for the past three to four years, but now it is the group’s policy to use them as much as possible. Most suppliers have been enthusiastic on the basis on the cost savings: a single carton can cost 60p while the plastic tray is less than 20p.”* There

was 15 percent of produce in trays at that time and the target was to raise that to 40 percent. The author was involved in assisting the achievement of that target in 1997.

This section on ECR and a buyer's viewpoint informs the broader context for several important changes taking place at that time. The first and most significant is the transformation of the trading structure and attitude. This comes across clearly in the interview, which is based on his direct experience. The second is that this change in behaviour and attitude by the buyers assisted the work of produce supplier logistics and primary distribution. This was a more collaborative approach with a greater willingness to get involved and help find the best solution for the whole supply chain and the end consumer. This comes across in the cases in chapter seven. The third point is that it portrays a retailer with an integrated approach to its strategy from source to consumer, including the supply chain. In that interview, Tesco as the retailer was clearly the channel captain in retail supply chain change. It conveys the conviction and confidence that existed at that time, which was shared by the author; but to feel it through the words of a buyer is an independent confirmation.

#### 4.4 Preliminary Concepts

There are two sets of preliminary concepts. The first relates to the types of supply channel, which are termed, push supply and pull demand. The second explores the change of pace within the supply channel.

##### 4.4.1 Push Supply or Pull Demand

The push and pull models of channel organisation represent two contrasting methods with dramatically differing consequences. In the *push model* the manufacturer that decides the quantity and timing of the movement of the various products. The

manufacturers, through the channels of distribution they have set up or chosen, push out the product. The consumer is quite passive and is presented with a range of products, decided by the manufacturer, from which to make their choice of purchase. Quite often it is the vested interests of the manufacturer that dictate the detail of this movement. The factors considered might be production capacity and efficiency or the desire to move the stockholding away from the manufacturer's site. The volume produced is decided by the manufacturer based on their assessment of the choice that should be placed before the consumer. There can be some adverse consequences of the push model, of which the most critical is the mismatch between product supply and consumer demand. This can lead to either a shortage or a surplus of stock of particular product lines. The product is produced before knowing the actual consumer demand. Unwanted lines remain in stock at the retail store and the manufacturer might have to bear the cost of price reductions to clear out these unwanted items. The manufacturer might list as advantages, the economies of production scale and that the stock is off their premises.

The *pull model* takes a very different starting point, namely the actual consumer demand as recorded by product line at the checkout, which is usually referred to as Electronic Point of Sale [EPoS] data. It is this actual demand that is used by retailers to calculate the precise quantity by product line for the orders that are then placed on the manufacturers and suppliers. In this way the demand for the product is pulled through by consumer sales from the production source. The manufacturers and suppliers produce to order on an agreed lead-time, which is determined by the type of product and the geographical distance. One consequence is that there is less stock held in the pipeline and less bullwhip effects, less stock outs and improved availability

(Kotzab 2001). In this pull model, it is the retailer who holds the key information that of the consumer demand.

There is much debate in the literature about using the terms supply or demand chain to describe the type of channel that is being used in particular cases. The push model creates a supply chain or channel; the pull model creates a demand chain or channel. In this thesis the term supply chain or supply channel is used in an inclusive way to refer to both models of product distribution.

#### **4.4.2 Just in Time**

*Just in Time and Just in Case:* the expression *Just in Time* is used in connection with a pull supply model led by consumer demand. It refers to the coordination of the logistics and retail activities. The objective is to deliver the proper level of the product to the retail stores so it can be put on the shelf just before it is required by the consumer purchasing activity. Just in Time is founded on the confidence that the quantity delivered anticipates accurately the quantity to be purchased by consumers. This model is sometimes also referred to as Quick Response. In contrast the expression *Just in Case* is used in connection with a push supply model, determined by a manufacturer's forecast of consumer demand. Stock is ordered in so that it acts as a safety factor to bolster the rather unsure and faltering confidence about consumer demand.

There are advantages and disadvantages in both approaches. Just in time provides the right quantity of stock on a timely basis, so there is less stock in the system. However the delivery frequency has to increase and the drop size, i.e. the quantity per delivery, for the same level of demand is smaller. For example a twice

weekly delivery to a store of 100 units is 50 units per drop; but five deliveries per week is 20 units per drop. However just in time reduces the total stockholding in the supply chain and makes consumer demand more visible. Where there are high volume operations, as in food retailing, there can be economies of scale. For example, one way to compensate for the smaller drop size per product line is to combine the delivery of many product lines to create an economical daily delivery volume. Retail distribution operations thrive on high volumes. The just in time model operates more efficiently if the retailers hold their stock in their regional distribution centres, rather than at their retail stores. Alternatively, it could also be held at the suppliers themselves, but the suppliers may experience this as an additional cost. The evidence, however, is that the fewer the number of stockholding points, the lower the financial investment in stock for a given service level. The stock can be moved effectively to those retail stores where it is in demand by consumers; this is an efficient use of stock holding. Just in Case creates a higher level of inventory in the supply chain, usually at the retailers' premises. This can also result in a high level of surplus or redundant stock that has to be sold off at a reduced price or moved to another retail outlet.

#### **4.4.3 Pace and Stockholding**

There are additional consequences that follow on from the type of supply model adopted. In the push supply model, with its just in case approach to inventory and less frequent deliveries in larger drop quantities, the physical storage requirements are high. High levels of storage have an impact on the design criteria for the warehouses in the supply chain. Stock will remain in one location for a longer time and the warehouse will require high density racking for the stock holding positions, for some products even narrow aisle, automated, random access, high bay storage and retrieval systems.

In contrast, there is a different emphasis in a pull supply chain model with just in time delivery of the precise quantity of products that consumers are about to purchase. The emphasis is on rapid handling and fast movement along the supply channel from supplier to consumer with minimum inventory standing still in the supply chain. The speed of product movement is faster and the warehouse design criteria are different to give a greater area of floor space for handling the rapid flow through of product rather than high level racking for the storage of reserve product. The delivery transport from the supplier to the retailer is organised for frequent deliveries coordinated to an agreed time schedule.

The fresh food sector contains a diverse and varied range of temperature controlled products. The vulnerable nature of many fresh products makes stringent demands on the manner in which they are stored, handled and cared for. Their journey from source to consumer can be complex, lengthy and open to risks. The retailer has a duty of care towards the consumer and hence the responsibility to ensure that these fresh products are delivered in a proper condition for consumption. It is this added intensity of caring for temperature controlled products that make this particular supply channel of great interest in this thesis. It is a deepening and development of the thesis topic.

The supply chain requirements for chilled temperature-controlled distribution are so intense that it is one of the most demanding disciplines in logistics. It is recognised as a leading edge sector within the logistics industry itself and is a critical sector for those retailers who are in an emerging economy or who are in the process of developing their retailing skills. It demonstrates the imperative of taking a whole



channel approach rather than an attitude of “*I’ve done my bit, let others do theirs*”. The fresh food sector is an important product sector for the retailer to get right in order to build consumer trust and confidence that the product quality will be tasty and fresh. The importance of the fresh food supply chain means that this chapter will reiterate some of the messages from earlier to re-emphasise their importance. This is heightened when dealing with fresh foods. It is like going up a gear in performance that can provide the retailer with a greater competitive advantage.

There can be service benefits at the same time as making logistics more effective and efficient. The integration of demand and supply, through information technology and appropriate handling systems, allows retailers to provide a better service to consumers. For example, it enables having fresher, higher quality produce arriving to meet consumer demand. The role of logistics and the way in which logistics are changing in fresh food retailing are central components of this chapter. This includes a detailed examination of a key element of fresh food supply, namely the requirements of Temperature Controlled Supply Chains. It is intended as an illustration of a very intense and demanding supply channel, which is also the environment for some of the case studies in chapter seven.

Acknowledgement: The author wishes to acknowledge that section 4.5 reflect earlier work completed on a collaborative basis (Gustafson et al 2006; Smith 1998; Smith and Sparks 1993, 2004 a, b, c).

#### **4.5 Temperature Controlled Supply Chains**

A quick examination of any full-range food superstore immediately brings home the importance of fresh food to the consumer. The modern consumer expects the

fresh food in the store to be of good quality, to have a decent shelf life and to be fit for purpose. Similarly, if the retailer can present products attractively and extend their shelf life then there is more chance of the products being purchased and satisfying consumer needs. Managing the supply chain to maintain quality and 'fitness' therefore has direct cost and service implications. This process of logistics management however is not simply a question of moving box A from field B to store C. Many dimensions have to be managed. One of these dimensions is the need for a proper temperature regime. A food superstore contains products supplied and retailed at a number of different temperatures. Failing to maintain an appropriate temperature control can adversely affect the product's appearance or shelf life, at one end of the spectrum, or could potentially make consumers ill or even kill them at the other end. Temperature controlled supply chains could be said to be a matter of life or death (Kuznesof and Brennan 2004).

CH Robinson Worldwide Inc/Iowa State University (2001) argue that Temperature Controlled Supply Chains are more important than 'ordinary' retail supply chains as they have inherently more complexity and complications:

*“The (Logistics) challenge is more formidable when the materials and products require temperature control. The shelf life is often short for such products, placing even greater importance on the speed and dependability of the transportation and handling systems. Temperature controlled products also require specialised transportation equipment and storage facilities and closer monitoring of product integrity while in the logistics system.*

*Adding to the logistics complexity is the seasonal demand for many temperature controlled products...arising from natural production conditions and consumer demand...In addition, carriers of temperature controlled products confront unique requirements and incur greater costs than carriers of dry products” (p1-2)*

Some of the uniqueness and increased costs derive from this need to ensure temperature control. There is extra cost incurred in the requirements for handling temperature-controlled products, and also in the need to monitor temperature regimes in the supply chain.

#### **4.5.1 What is a Temperature Controlled Supply Chain?**

At its simplest, a Temperature Controlled Supply Chain is a food supply chain, which requires that food products are maintained in a temperature controlled environment rather than exposing them to whatever ambient temperatures prevail at the various stages of the supply chain. This basic description hides however an essentially complex and potentially complicated and expensive process. The length and complexity of such a supply chain is determined by the natures and sources of the products, the legal and quality assurance requirements on food safety, and the distribution facilities available from production to consumption.

There are several temperature levels for food to suit different types of product groups: for example they might be classified as frozen, cold chill, medium chill and exotic chill. Frozen is minus twenty five degrees Celsius for ice-cream; minus eighteen degrees for other foods and food ingredients. Cold Chill is zero degrees to plus one degree for fresh meat and poultry, most dairy and meat based provisions, most

vegetables and some fruit. Medium chill is plus five degrees for some pastry based products, butters, fats and cheeses. Exotic chill is plus ten to plus fifteen degrees for potatoes, eggs, exotic fruit and bananas. If a food supply chain is dedicated to a narrow range of products then the temperature will be set at the level for that product set. If a food supply chain is handling a broad range of products then an optimum temperature or a limited number of different temperature settings is used. Failure to maintain appropriate temperature regimes throughout a product's life can shorten the life of that product (it goes "off") or adversely affect its quality or fitness for consumption.

From the description of the types of temperature needed and knowledge of the supply chains in food retailing, it should be immediately obvious that the management process in Temperature Controlled Supply Chains is a complicated one. Chilling and freezing products is in itself hard, but maintaining this throughout a product's life and in both storage and transit is complicated. How, for example, can a retailer ensure that products are always under the appropriate temperature regime when they travel from a field in New Zealand to a refrigerator in a house in Auchtermuchty? How do bananas ripen so as to be available for sale? In addition to complexity however, we can argue that the Temperature Controlled Supply Chain is also an increasingly important channel, both in absolute volume terms and due to the risk assessment of the consequences should the integrity of the whole fresh food supply chain fail.

#### **4.5.2 The Importance of Temperature Controlled Supply Chains**

The Temperature Controlled Supply Chain in food is a significant proportion of the retail food market and one that has been increasing steadily (McKinnon and Campbell 1998). Frozen food in the UK has been increasing in volume

by 3-4% on average per annum for the last 40 years. Developments in products such as ready meals and prepared salads have further expanded the market. Per capita consumption of fruit has risen over the last twenty years in the UK. Analysts see the meal solution sector continuing to increase very rapidly (Gorniak 2002). 'Fast food' chains have captured a huge market share and are reliant on frozen product. The importance of products requiring temperature control, both to the consumer and to retailers has thus been increasing and seems set to develop further.

Even products that we take for granted require some form of temperature control. Sandwiches for example require chilled storage for their ingredients. These are then combined to make the finished product, which in turn requires temperature control storage, distribution and display (Smith, Davies and Bent 2001). Failure to maintain adequate control (for example placing prawn sandwiches in the sun) generates obvious risks. More subtly, an inability to maintain temperature control will reduce shelf life for the product, which is any case often very limited. This increases wastage and complicates the supply dynamics, adding costs.

This growth in temperature controlled products derives both from changes in consumer preferences and behaviour, and in the supply systems' ability to respond to these changes. For example consumer lifestyles and shopping patterns have altered dramatically, raising demand for convenience products. The creation, production and supply of an ever increasing range of ready to eat meals has been stimulated to match the desire of the consumer simply to heat up the food rather than spend time and effort in preparing that food. The ability to take a frozen meal from the freezer and microwave it to eat immediately is a response to the need to save time and for convenience. Ready washed and prepared salads fit the same requirement. Rising fruit consumption reflects

successive healthy eating campaigns, though in the UK the national diet is low on fruit and vegetables. At the same time greater concern over freshness of products such as fruit, meat and fish has focused attention on their handling in the supply chain.

On the supply side, there have been changes in the location from which product is sourced and the deliberate leapfrogging of wholesalers and importers by the retailers to deal directly with the growers themselves. During the 1990's in the UK there was the liberalisation of the Produce Boards, such as those representing producers in New Zealand or South Africa. This created more flexibility for retailers to deal direct with the larger producers. The consequence was the gradual removal of the produce wholesalers from the supply channel, apart from the non-supermarket outlets. This has had a major effect on the shape of the supply channel for fresh produce. In recent years, some retailers have reorganised the supply channel by appointing a lead category supplier with the responsibility of coordinating the procurement of fresh produce from suppliers worldwide.

Technological changes in production and distribution have also allowed a transformation of the supply network. As production and distribution technological capabilities have developed, so the ability for national and international, rather than local, sourcing and distribution has emerged. Products can be brought from across the world to satisfy demands for products 'out-of-season' or of an exotic nature, as well as for reasons of lower purchase or cost price. Internationalisation of supply of even indigenous products is common. The system developments needed to meet the demands for quality and consistency, including temperature control aspects, do impact on the channel composition. The handling systems to manage the air freighting of for example tomatoes from the Canary Islands, baby sweetcorn from Egypt or flowers from

Malaysia required considerable technological development. They also however represent a fundamental organisational and relationship shift.

As the number and range of temperature controlled products has increased, and a number of market failures have occurred, so the issue of food safety has become more central (Henson and Caswell 1999; Kuznesof and Brennan 2004). Failures of food safety in the UK (not all of course associated with failures of temperature control) are common on a localised and individual level. For example there is a high level of personal food poisoning in the UK, although the extent to which this is a result of product or channel failure rather than an individual consumer's lack of knowledge or care is unclear. More publicly notable however have been national events ('food scares') such as Listeria in cheese, Salmonella in eggs and chickens, BSE in cattle and E coli 157 in meat. These national events raise concern and comment about food safety. There is thus a perception over the safety of supply of food and food chains, which in turn has focused attention on risk assessment and risk management. Temperature Controlled Supply Chains gain importance therefore from the risks associated with failure and from the steps necessary to minimise these risks. Some of the steps are voluntary and company specific; others are required by legal developments over the last decade.

As a consequence of risk assessments and the major problems in food safety, Temperature Controlled Supply Chains have become a focal point for the development of Food Safety Legislation across Europe. Although such legislation introduces requirements that cover a broad range of issues, one key aspect is the temperature conditions under which products are maintained. Such legislation combined with increasing retailer liability for prosecution has put great pressure on the

standards of control throughout the food supply chain, particularly in the case of temperature control. For these reasons, Temperature Controlled Supply Chains are often seen as a specialist discipline within logistics. To some extent this is understandable given the need for specialist facilities e.g. warehouses, vehicles, refrigerators etc to operate chilled or frozen distribution channels. This specialist market however is itself increasing in scale and scope, both as the market expands and as operational and managerial complexity increases.

The discussion above and comments in the introduction leads onto the identification of a number of key issues in Temperature Controlled Supply Chains. Here, three are identified for further discussion: the issues of costs; food safety and Hazard Analysis Critical Control Point (HACCP); and partnerships. As noted earlier, the integrity of temperature controlled supply chains is important for food safety. This places an obligation of care and duty of implementation on the suppliers, the retailers and the logistics service providers. In the UK, for example, the Food Safety Act of 1990 defined the storage, handling and transportation requirements for food products including temperature control for certain categories. One of the requirements of the Food Safety Act 1990 makes it an absolute offence to sell food that is unfit for human consumption. Clearly, food that has ‘gone off’ due to inadequate temperature control can fall into this category. The Act however allows for a defence of ‘due diligence’ against any charges. Thus a business may be able to mount a defence based on evidence that all reasonable precautions had been exercised to avoid the commission of the offence. If we think about temperature control, then this implies that there needs to be a system of control maintenance, monitoring and recording (for evidence) of the temperature regimes in the supply chain.



It is important in the application of the disciplines of an integrated temperature controlled supply chain to understand the principles of the obligations of suppliers, retailers and logistics service providers.

**All have a duty of care for the product.** In order to meet this duty of care they must demonstrate that they have applied Due Diligence in the structure and execution of their operation i.e. that they have taken all reasonable methods to ensure the care of the product.

One of these reasonable methods is Hazard Analysis Critical Control Points (HACCP) and is central to the discipline of chill chain integrity in logistics. The Quality Assurance department conducts a survey of the supply chain under their control with the objective of identifying those circumstances where the product might be exposed to unsuitable conditions, i.e. hazards. They rank these hazards according to the importance of their risk, e.g. high, medium, and low. Procedures are then put in place at an appropriate level to prevent that risk.

So to express this differently: identify the hazards, analyse their importance, identify which are critical and set up control procedures at these points.

Once HACCP is put in place it becomes a strong argument that Due Diligence is being practiced.

For temperature controlled supply chains, there are big benefits from putting the physical and operational procedures in place along the **whole length of the supply chain**. This investment reduces a high risk to a low risk. By stabilising the temperature throughout the life of the product suppliers and retailers can concentrate on other aspects, which can add value to the product, e.g. growing varieties.

Here is an example: The movement of chill goods from DC to Retail Stores on multi-temperature vehicle.

Risk to food safety – High; Risk of occurrence – High

Critical Control

Temperature setting stated on load sheet and run sheet

Loader checks load sheet and sets temperatures for compartment

Loader secures bulk head

Loader switches refrigeration on and ticks relevant temperature on load sheet

Once loading complete a supervisor checks settings and switches against load sheet and signs off if correct

Load sheet handed into goods out office

Driver checks digital readings (usually at the front of the unit, visible in rear view mirror) against load sheet. If correct, signs off and hands in to goods out office

Goods out clerks checks if temperatures on load sheet and run sheet match and if correct allows vehicle to leave

Goods out supervisor does daily checks to assure compliance

Source: Author interviews, 2003

#### Figure 4.1 Hazard Analysis Critical Control Points (HACCP)

The Food Standards (Temperature Control) Regulations of 1995 made it an offence to allow food to be kept at temperatures that could cause risk to health. This again implied a tightening of systems in the chain. This was effectively codified by the General Hygiene Act of 1995, which required all food businesses to adopt a risk management tool such as Hazard Analysis Critical Control Point (HACCP) (Figure 4.2). Loader and Hobbs (1999) see this as a change in philosophy, representing a move away from an end product food safety inspection approach to a preventative, scientific focus with the responsibility for risk management placed on the food business proprietor. As

a result, HACCP and other systems (Sterns, Cordon and Reardon 2000) have been vital to establish process controls through the identification of critical points in the process that need to be monitored and controlled.

These Acts in the UK were in essence national responses to approaches being recommended in Europe and codified in the EU legislation. The food scares in the UK of the late 1990s also brought forward a response. The Food Safety Act 1999 created the Food Standards Agency (FSA) in April 2000. The Act was intended to induce all those involved in the food supply chain to improve their food handling practices, including temperature control. There is no doubt that the FSA will continue to play a strong role in Temperature Controlled Supply Chains (<http://www.foodstandards.gov.uk>).

This onus on due diligence and the responsibility of businesses had a major effect on systems of control and monitoring of performance. It also however had an effect on the business relationships and governance in place. If a retailer for example wishes to be protected from claims, then they have to ensure that their suppliers are undertaking good practices, in addition to their own practice. This is not only true for retailer brand products, but for all sourced products. As such, traceability and tracking become more fundamental and good partnerships become crucial. As costs rise in introducing new systems, increasing the depth and quality of partnerships is both a safeguard and offers possible cost benefits. As a result, partnerships expanded considerably post 1991 in the UK (Hughes 1994; Fearne and Hughes 2000; Loader and Hobbs 1999; Wilson 1996a, b). Food retailers today are keen to have such partnerships and to use them in their marketing, as seen in the numerous 'farm assured' type schemes. Such partnerships and changes in organisation of the supply chain are not

restricted to UK suppliers. Dolan and Humphrey (2000) show how in Africa, the requirements of the leading UK retailers have transformed the horticultural sector in scale and operational terms, leaving smaller producers in a precarious position. This scale dimension is linked closely to the legal requirements and the costs of compliance and potential chain failure.

However, it is not all cost and regulation, as there are operational and commercial benefits to be gained from proper Temperature Controlled Supply Chain management. These benefits might include an increase in shelf life and freshness, better in-store presentation to the customer and thus better customer perception of products and the retailer. This increase in product quality and perception is the direct result of maintaining the correct temperature for that product group steadily and constantly throughout its supply chain journey. One major effect of an increase in shelf life and freshness has been that consumers can notice the difference between product supplied through a fully temperature controlled supply chain and that supplied through a partially temperature controlled supply chain, and so, make product and retailer choice decisions accordingly. Whilst it is generally the case today that the major food retailers maintain chill and cold chain integrity and thus have totally controlled Temperature Controlled Supply Chains, this has not always been the case. Temperature Controlled Supply Chains have thus changed considerably over the last two decades.

The issues in Temperature Controlled Supply Chains outlined mainly in terms of the UK above are also found in other developed countries. The legislative position might be different but the net effect is the same. Such concerns are also spreading internationally for reasons considered in other contexts earlier. As points of production become more international so the need to ensure consistency and safety is

increased, particularly when production is occurring in developing and low-cost economies where the infrastructure may be less than anticipated. Similarly as retailers internationalise their stores, so they need to ensure compliance in stores and supply chains in these other countries. In some cases they will use their investments in these areas to emphasise the quality and safety of their operations, including their food for sale. As consumers react to this, so the 'bar' for local retailers is raised. These issues are thus becoming more important in many countries.

#### **4.5.3 Changes in Temperature Controlled Supply Chains**

The temperature controlled supply chain has developed and changed since the 1980s. In the past in the UK, the supply chain consisted of single temperature warehouses dedicated to narrow product ranges of food, e.g. butters, fats and cheeses at plus five degrees Celsius, dairy based provisions, meat based provisions, fresh meat and poultry, fruit and vegetables and frozen products. The design, equipment and disciplines were only partially implemented so that there was incomplete integrity of the temperature control. Products were exposed to periods of high ambient temperature, which affected the shelf life and the quality of the product. Single temperature systems also meant that many more deliveries were needed. Such systems were essentially inefficient and ineffective.

Such a situation existed in the 1980s in Tesco (see Smith 1998; Smith and Sparks 1993, 2004a, b, c; Sparks 1986). In the mid 1980s the Tesco temperature controlled supply chain consisted of a large number (twenty-seven) of small single temperature warehouses, each specialising in the storage, handling and delivery of a narrow product range. Examples of these sets of product ranges were: Fresh Produce; Fresh Meat and Poultry; Butters, Fats and Cheeses; Chilled Dairy Provisions; Chilled

Meat Provisions; Frozen Foods. Each set was managed by a different specialist logistics service provider organised on behalf of the manufacturer and supplier. The deliveries to the retail stores took place two or three times a week with the temperature controlled vehicle going from one store to another delivering the appropriate number of pallets of products. The delivery notes and product checking were conducted at the back door of the store and the cost of delivery was included in the price of the product. Fresh Meat and Poultry was controlled on an individual case basis and charged by weight as each case had a different weight (variable weight charging).

There are several limitations of this model of a Temperature Controlled Supply Chains. It was expensive to expand to meet large increases in overall growth in volume, as it requires the building of more and more single temperature warehouses. The retail delivery frequency was limited. The delivery volume drop size per store was small and vehicles used were 'under-sized' because of problems over retail access. At that time there also was not full awareness of the importance of maintaining total integrity of the chill chain.

The strategy that Tesco decided upon was to build a small number (seven) of new large multi-temperature 'composite' warehouses that would store, handle and deliver the full range of product sets, all from the same location. The composite temperature regimes are Frozen at minus twenty five; Cold Chill at plus one degree; and Exotic Chill at plus twelve degrees. The manufacturers and suppliers of all the product sets make daily deliveries into the Composite Distribution Centre. The Composite delivery frequency to the retail stores increased to daily. The delivery vehicles had movable bulkheads and three temperature controlled evaporators so that up to three different temperature regimes could be set on the one vehicle. The benefit was

improved vehicle utilisation and improved service to retail. Chill chain integrity disciplines were implemented rigorously from supplier to retail shelf.

There are other aspects to this change. Distribution and retail agreed a policy of not checking the goods at the retail backdoor which improved the speed with which the goods could be transferred into the temperature controlled chambers at the store. This improved chill chain integrity. The goods were delivered in reusable plastic trays, on 'dollies', or on roll cages, which improved handling at store, both in terms of speed and quality. New store designs permitted the use of full length vehicles, so improving efficiency.

Another major change in supply chains between the 1980s and 2000s has been the increasing pace of the order and replenishment cycle (McKinnon and Campbell 1998). Today with many fresh products there is no stock held in the retail distribution centre overnight. Leadtimes have continued to be reduced. One of the key drivers of this increase in pace has been the development of information technology which has enabled a large volume of data to be collected, processed and transmitted at faster speeds. Today data are collected from the point of sale and used in calculating future customer demand, which in turn forms the basis of the orders placed on suppliers. The scale, control and skill of the retail logistics operation has improved so that even distance sourced products can be rapidly transported to their destinations at the Regional Distribution Centres. An example of this is the sourcing of produce from Spain direct from the growers into the Composite Distribution Centres. These changes, encouraged by information technology amongst other factors, required changes in supply chain facilities and operations to ensure chill chain integrity.

Following the implementation of centralised distribution, the attention turned to the condition of Temperature Controlled Supply Chains for the inbound product sets from the supplier and manufacturer into the regional distribution centres. The examination of the logistics of the inbound supply chain revealed that there were huge opportunities to improve transport efficiency. The increasing pace of the retail supply chain had resulted in most suppliers of temperature controlled product sets sending their vehicles long distances, but only partly filled, to the various retailers' regional distribution centres. So for example, suppliers' vehicles carrying fruit and vegetables from a supplying region like Kent, were following each other to distant regional distribution centres in Northern England and Wales, each with a partially full vehicle to the same destination. Clearly there was an opportunity for the consolidation of supply.

Year	Retailers	Data related to consolidation
1995	14	No reference to consolidation centres
1997	16	First mention of Primary Distribution, ref Tesco
1999	16	64 consolidation centres listed

*Source: IGD Annual Retail Distribution Surveys 1995, 1997, 1999*

**Table 4.1 Retail Consolidation Centres 1990s**

This process of consolidation saw the appointment of designated logistics service providers in the appropriate regions to manage and operate temperature controlled consolidation centres (Table 4.1), accumulating full vehicle loads of temperature controlled products to despatch to the composite distribution centres.

These consolidation centres also conducted quality assurance testing of the product. There were two benefits of placing the quality assurance function in the consolidation centres. The first was that they were close to the suppliers so that any problems could be dealt with face to face where required.

Stage	Soft Fruit	Top Fruit	Veg.	Temperature Controlled Supply Chain Status and Improvement Action
Pre 1980				Single Temperature Produce Centres [Three]. Ambient and plus five degrees Celsius. Code dates not a legal requirement. Shelf life managed at Retail. Retail ordered from local suppliers without any technical support.
1980 to 1986				Two further produce centres. Operating procedures remained the same. Suppliers normally loaded in yard or from ambient bays. Many vehicles have curtain sides.
1986				Notice that code dates to become a legal requirement for produce. Produce Technical Team established shelf life and introduced QC checks at distribution centres. 78 / 48 hour ordering cycle to retail
1987	2 CD + 2 CL = 4 days Total	5 CD + 2 CL = 7 days Total	3 CD + 2 CL = 5 days Total	Code dates (CD) introduced for loose and pre-packed produce. In addition to the selling code dates there were additional days where product would be at its best. This time was called "Customer Life" (CL). QC in produce depots to enforce specification. Two further produce centres. Code of practice introduced for suppliers include distribution centre controls and vehicle standards, e.g. no curtain sides.
1989	2 CD + 4 CL = 6 days Total	5 CD + 6 CL = 11 days Total	3 CD + 5 CL = 8 days Total	Six Composite Distribution Centres opened. Separate temperature chambers of +3, +10, +15 for produce. Composite multi-temperature trailers deliver at +3 & +10 degrees Celsius loading from sealed temperature controlled loading bays. Customer life extended by 2 days for soft fruit, by 4 days for top fruit and 3 days for vegetables. No increase in code dates. Consumer demand for Fruit and Vegetable <b>doubled</b> as a consequence of the introduction of strict temperature control disciplines throughout the supply chain.
1990				Food Safety Act: To meet due diligence HACCP [Hazard Analysis Critical Control Points] analysis introduced throughout the supply chain. The result was more consistent shelf life but no increase in days. Retail stores only allowed to buy from suppliers with Technical approval.
1995	2 CD + 5 CL = 7 days Total	5 CD + 10 CL = 15 days Total	3 CD + 6 CL = 9 days Total	Produce temperature controlled consolidation hubs introduced. Six further hubs added over next three years. QA control introduced at hubs so quality checked before produce despatched to the composites. Hubs located close to supplier regions so prompt resolution of problems with supplier management. Shelf life review shows increase of one day across all vegetables, soft fruit and stone fruit. Salads become inconsistent because of harvesting during the night before dew point. But there was a greater benefit of starting despatch earlier, especially from Spain. Retail order lead time 48 / 24 hours
1997				Composite Distribution Centres change produce chamber temperatures to +1 and +12 degrees Celsius with tighter variation of +/-1 degree from +/-2 degree before. There was no change to shelf life because the supply chain disciplines fully in place.
1998	2 CD + 5 CL = 7 days Total	6 CD + 10 CL = 16 days Total	4 CD + 6 CL = 10 days Total	Technical Departments given targets to increase produce shelf life. One potential improvement was to introduce USA type variety control. The benefit is only possible because of the very strict total supply chain temperature control. One extra day of Code life for stores.
2000				Continuous Replenishment introduced. The benefit is split deliveries into retail stores with different code dates for retail without any loss of customer life
2002	2 CD + 5 CL = 7 days Total	7 CD + 10 CL = 17 days Total	5 CD + 6 CL = 11 days Total	Further supply chain improvements in shelf life to extend code dates by one day, no change to customer life to improve availability on selected lines, i.e. core vegetables, top fruit, stone fruit but not salads or soft fruit. Three potential methods are: a) atmospheric control especially during the three day delivery from Spain; b) humidity control; c) ethylene control.

Source: Author Interviews 2002

**Table 4.2 Enhancements in Shelf Life – Tesco**



The second benefit was that these vehicles did not then need to undergo quality assurance checking when they arrived at the composite distribution centre. This improved the turnaround time of the inbound vehicle, increasing its productivity and profitability and also enabled the handling operation to commence earlier and so keep the goods in bay clear for the next set of deliveries. This was especially important in the early evening when a very high volume of produce harvested that same day is delivered.

Some of the effects of these changes to the Tesco supply chain are considered in Table 4.2. This summarises the last 15-20 years of temperature control supply and the ways in which this has changed. Over that time period the shelf life for these products has increased considerably, and in the case of vegetables and top fruit, it has doubled (Figure 4.2).

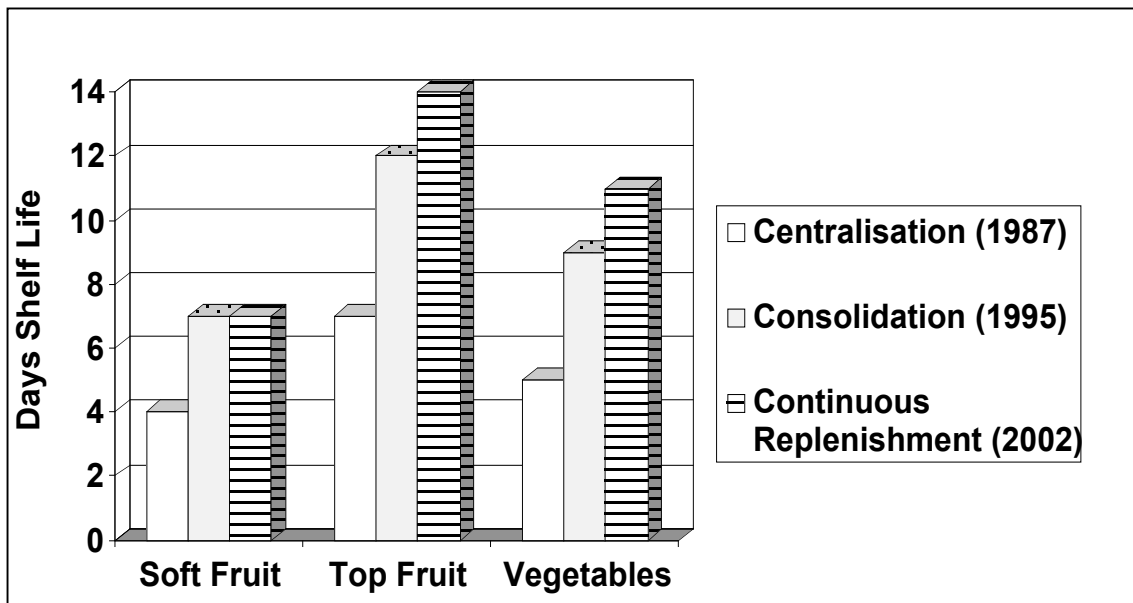


Figure 4.2 Shelf Life in Fresh Food in Tesco 1987-2004

This provides better product for longer for the consumer and is more efficient for the retailer. It does, as the table indicates, require a major reorientation of the supply chain and a dedication to achieving high standards in the whole operation. The overall effect however has been to provide fresher product more quickly and at lower delivery cost to the retail store and to lengthen the shelf life and quality of the product for the consumer. Packaging logistics systems, by implementing alterations to the handling and packaging methods, has had an important role to play in this.

The discussion above has been centred on developments in Tesco. Similar operations and developments have been introduced in other major food retailers. These have been needed to handle the massive expansion of demand in the temperature-controlled sector in recent years and to compete with the market leader. Not all the changes and developments can be outlined above and in the tables. Changes to packaging, e.g. the handling systems and transport environments, such as vacuum or other atmosphere controlled packaging, have also extended the shelf-life of products and improved in-store quality.

The application of this study of Temperature Controlled Supply Chains to illustrate some of the aspects of concern in retail logistics shows the level of detail at which businesses need to operate if they are to deliver fresh food at the right freshness, Smith (1992). Information systems have become widespread, integrated and complex. Technology is a logical response to aspects of control, whether this is data capture or process monitoring. However, all aspects of the supply system have come under such scrutiny as retailers have used their increased power and expertise to work with manufacturers, suppliers and logistics services providers to improve the quality and consistency as well as capabilities of all food supply chains. Such alterations and

approaches are going on across the world as the search for supply efficiency and effectiveness continues.

## 4.6 Summary

This chapter has examined Primary Distribution and change in one particular supply channel, the temperature controlled supply of fresh food. The scale of change in retail control over the supply channel reflects the growing influence of retailers. There has been a general rise in power and use of that power by retailers. In many countries and most retail sectors, retailers have increased their scale and power in relation to their suppliers and manufacturers. The retailers have used this increased power to demand, structure, implement and control changes in operational practices. They have taken over as the channel organisers. They have speeded up the pace of movement along the supply channel. There has been a restructuring of many aspects of retail supply networks.

Some of these changes have effectively been 'ordered' by retailers. Manufacturers and suppliers have simply had to comply in order to maintain the business. The timing and presentation of suppliers into retailers' distribution centres is one example of this. However, the extent and ability of retailers to order total change is constrained by their inter-dependence with their supply partners. Absolute power only works in some circumstances and for a certain period. Retailers have to continue working with suppliers and manufacturers. Adversarial relationships have only a limited ability to achieve supply chain objectives. Many changes have therefore been collaborative and channel transformative. This is demonstrated by the success of the ECR programme. The inter-dependence of food retailers and their suppliers leads to a

search for potential benefits for all parties. Efficiencies in the supply chain are the result of collaborative effort rather than unilateral demands.

Supply chain management is a critical success factor needed by companies to deliver products to the consumer and so fulfil their marketing or brand promise. In today's complex supply chains and supply networks, supply chain management involves a global reach. Companies may view themselves as being in direct competition with other companies in the same market sector. Even retailers and their suppliers can regard each other as competitors and rivals. However, the full nature of competition is evident from a different perspective; that of the supply chain. Supply chains competing with each other. The more effective supply chain team delivers to the consumer rapidly and reliably. That supply chain is effective, efficient, and productive. It operates at low unit cost, a fast pace, that adapts to market demand. The vitality of the supply chain has a strong influence on the health of those companies who together are reaching out and meeting the needs of the consumer by good anticipation and coordination.

Supply chains, supply networks, supply channels do not just happen by accident. They are created and put together consciously by those who have a stake in their success. This chapter has looked at some of the broader trends that have taken place in the development or evolution of the retail supply chain. It has described the temperature controlled supply channel designed to suit modern consumer requirements. This has been a descriptive chapter. The next chapter picks up the theme of 'channels compete'. It examines the changing skill sets needed to manage the modern supply chain change. Retail business strategy should drive the supply chain decisions. Relationships in the supply chain depend on the broader relationships between the

retailers and the suppliers. Those relationships are changing. Companies are taking an integrated approach to their strategy. They are appointing Supply Chain and Logistics Directors to the Board. Chapter Five: 'managing supply chain change' provides a selection of related theories. One of the outputs will be a short list of ten success characteristics as a key word shortlist. This list is the benchmark for the cases that follow in chapter seven.

# Chapter Five

## Managing

## Supply Chain Change

## 5 Managing supply chain change

The previous chapters have considered retailing and its demands on retail logistics and the re-structuring of supply channels. The supply chain is organised with a purpose; a strategic business purpose that relies on an ability to manage change. This ability to manage change successfully requires further reflection. This chapter will refer to a selection of theories about the nature of supply chain change. The selection examines related disciplines; change management, supplier partnerships, supply channel characteristics, leadership and negotiation models. The intended outcome is to produce a shortlist of ideal characteristics for supply chain relationships. The key characteristics can then be used as a benchmark for the cases in chapter seven. A fuller analysis of these cases will be conducted in chapter eight, using the theoretical bases presented here. The intention is to add to academic knowledge by reviewing the role and behaviour of a channel captain from the learning gained from these principles.

There are a variety of ways of handling and implementing change. This can be influenced by the scale and size of the parties involved. They might range from the small to the very large. They will probably have differing company cultures and contrasting management styles. The individual members of the supply channel may have specialist skill sets and different contributions to make to each other. The retailer can supply customer data. The manufacturer brings an in-depth knowledge of customer tastes and preferences for their product range. The logistics service provider is skilled at moving products in the appropriate manner. Organising this cooperation requires leadership and direction. However, navigating through the supply channel leadership role is quite complex. Doing this and implementing organisational and channel change, is a challenging task. Furthermore, it is not enough to make a decision, it must be

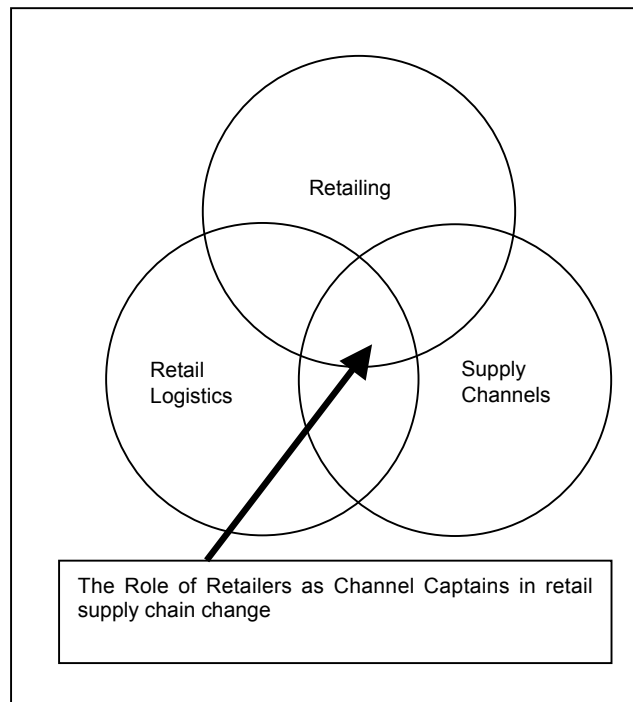
carefully planned, accepted and successfully implemented in order to achieve the desired organisational and channel results.

How then is this supply channel collaboration acquired, achieved and sustained? How are supply channels created, initiated, evolved, and developed? What sorts of barriers exist and how are they overcome? Who are the enablers of success in managing supply channel change? What might be the qualities and role of a channel leader? These questions face those companies working on re-engineering their retail logistics and their supply channel solutions. Obviously adding to the complexity and difficulty, is that within a food supply channel it is not enough to have a successful change process going on within just one or a few of the companies involved in the supply chain. The change process, to be effective, must involve *all* actors along the supply channel in order to achieve the full consumer benefits and business profitability. Those companies that work in unison and pull together can create competitive advantage in their service to their customer. The challenge is to lift the debate from the level of the individual company level to that of the supply chain as a whole. The inference is that supply channels compete with each other as whole channels.

## 5.1 Channels Compete

A competitive advantage is generated when all the companies in a supply chain choose to align their strategies to satisfy the demand from the end consumer. One way to visualise this is to present the three main components; retailing, retail logistics, and supply channels, as interlinked circles. The segment in the centre where the three circles overlap with each other represents this strategic alignment between the business and the supply chain (Figure 5.1).





**Figure 5.1 Retailing Supply Channels and Managing Change**

This strategic alignment is a core premise on which this thesis is based. The issues for change management arise at two levels. The first level is this strategic alignment. The second level is the more practical implementation to achieve that alignment in the supply chain operation. These practical implementation issues are the primary the focus for chapters six, seven and eight. However, their validity is dependent upon the presence of the first level, that of strategic alignment. If there is no strategic alignment, it will frustrate the hard work taking place at the second level of practical implementation. The practical work will only produce excellent results within this broader framework of strategic alignment, which seeks to integrate the components of the supply chain with enhanced customer service (Gattorna 1998, Figure 5.2).

The principle of strategic alignment is present in the practitioner development of ECR. This cohesion motivates retailers and suppliers to work collaboratively in these detailed and practical projects. The projects not only take

unnecessary cost out of the supply chain but also provide a better service to the end consumer. In this way, they benefit the different members of the supply chain.

Companies are now competing globally and traditional barriers between industries are breaking down. To cope with these changes and achieve superior performance, business leaders are moving towards new business paradigms that allow their companies to work more closely with their traditional and new business partners to adapt to the rapidly changing marketplace. **This improved integration is the very essence of supply chain management.** Supply chain leaders are reconsidering the linkages, not only between functions within their own company, but with other organizations up and down the supply chain.

The traditional view of logistics was very narrowly defined. It focused on the physical movement of goods and (more recently) information, from suppliers to customers and their consumers. This led to a preoccupation with internal functions and processes within the firm in the name of increased efficiency.....This narrow definition of logistics takes no account of different customer types and the different demands they place on the business.

It is our contention that a new framework is required that integrates the formulation of logistics strategy with the human factors that both create demand outside the firm and form the core capability inside the firm to deliver the prescribed strategy to the marketplace. We argue the need for a **Strategic Alignment Model** that brings together the external market's dynamics, the firm's strategic response(s) and the firm's internal capability to execute this desired alignment, through the appropriate subcultures and leadership style(s) built into the organization.

Source: Gattorna1998, p 1-2 [Emphasis added]

**Figure 5.2 Strategic Alignment Model (Gattorna 1998)**

### 5.1.1 The Whole Channel Competes: McCarthy 1981

**The whole channel competes with other channels (1984)**

Our captain, the producer – for convenience only (1981)

We cannot overemphasize the importance of a whole channel system viewing itself in competition with other systems. Without this view, one firm might adopt policies clearly unfavourable to another member of the same system. In the short run, the stronger firm might succeed in forcing policies by sheer weight of market power. Yet – In the long run – this might lead to the failure, not only of a weaker channel member but of the whole team.

A good example of how not to act as a channel captain is the manufacturer who loads retailers with excessive inventory. The manufacturer may make money in the short run – but will not be welcomed back by the overloaded firms.

The person or firm that helps direct an integrated system of action is the leader. We will consider that person our channel captain. Identity may change from time to time – depending on the success of product development or promotion efforts, financial reserves, or management personalities – but this does not change the concept or its impact on marketing.

For convenience, we will assume that the channel captain is the producer. Remember, though, that the middleman may play this role too.

Source: McCarthy and Brogowicz 1981 p351-6 [Emphasis added]

**Figure 5.3 The Whole Channel Competes (McCarthy 1981)**

The conviction that whole channels compete with other systems was present earlier in the American marketing literature (McCarthy 1981, 1984, Figure 5.3). The difference in the headings between the seventh edition (1981) and eighth edition (1984) is a sign of the deepening awareness of the need to emphasize the whole-channel way of

thinking. The words of the text itself in both editions remain the same. This is the framework for the concept and role of the channel captain. In 1981, it is the person or firm that helps direct an integrated system of action who is the leader or channel captain.

The channel captain role was identified earlier (McCarthy 1960, Figure 5.4). The motivation for that channel captain role had remained the same, although then it is expressed in the marketing framework of the 4 Ps: Product, Pricing, Promotion, and Place. One of the roles the channel captain needed to perform was to develop place policies and consider how the functions should be divided within the marketing channel.

**D5 Transporting, storing and financing**

Transporting, storing, and financing are basic marketing functions, which must be provided throughout most distribution channels. They are of common concern to nearly all channel members.

**When a channel captain is developing place policies, he must consider how these functions are to be divided within the channel.** Assuming that the team captain is a manufacturer, he may have already decided to use some type of wholesaler and retailer, but this does not automatically decide how the functions of transporting, storing, and financing are to be shared...

These functions are vitally important to Place, since they are required in the production of time, place, and possession utility. Their interaction with the other three P's – especially Price for the cost of the service and Product for the service itself – must be born in mind.

Source: McCarthy 1960, p429. [Emphasis added]

**Figure 5.4 Channel Captain (McCarthy 1960)**

There has been a consistent development of the importance of planning and organising the channel, which brings benefits to all the members of the channel (McCarthy and Brogowicz 1981, Figure 5.5). In earlier times that was conveyed in the marketing style of thinking. In recent times, the concept is extended to the supply chain and put into a supply chain management expression of behaviour. There is this strong link between the two sets of academic thinking on the importance of whole channels competing.

**A coordinated channel system can help everyone**

A channel system in which members have accepted a common product – market commitment can work very well – even though not everyone in the channel system is strongly market – oriented. As long as someone, say, the channel captain, is market – oriented, it may be possible to win the confidence and support of production – oriented firms – and make the whole channel work effectively...

Ultimately, a successful *channel system* must deliver the goods and services desired by target customers – at reasonable prices.

**Conclusion**

The chapter has discussed the role of Place – and noted that Place decisions are especially important because they may be difficult to change.

The importance of planning channel systems was discussed – along with the role a channel captain. It was stressed that channel systems compete with each other – and that **vertical marketing systems** seem to be winning out in the marketplace.

**Question No. 7**

Explain how a "channel captain" could help traditional independent firms compete with a corporate (integrated) channel system

Source: McCarthy and Brogowicz 1981, p351-6 [Emphasis added]

**Figure 5.5 Coordinated Channel System (McCarthy 1981)**

The role of the channel leader or captain has been expressed in a variety of ways. This will become apparent as the chapter progresses. The views about the channel leader are linked to a wider consideration. The relationship between the members working in the channel is central to its success.

### **5.1.2 Democracy, Mallen 1963**

This contribution provides various insights into the marketing thinking of the time. The first is the description of the structure of the relationship options as autocracy, democracy, anarchy (Mallen 1963, Figure 5.6). Anarchy exists when there is so much conflict that no one member is able to establish a strategy. The autocrat commands without consulting. The cooperation from the members that results is subdued conflict that could erupt at any time into open conflict. The democrat leads by helping the channel members to cooperate willingly and voluntarily because they are in agreement with the direction of the strategy and the detail of the implementation. They have been consulted and involved in the decision making process. They have had the opportunity to make their contribution.

**Autocracy, democracy, anarchy**

This paper will show that between channel members a dynamic field of conflicting and cooperating objectives exist also that if the conflicting objectives outweigh the cooperating ones, the effectiveness of the channel will be reduced. Thus, the efficient distribution of consumer goods will be impeded.

The channel members can meet this problem in three distinct ways. First, they can have a **leader** (one of the channel members) who "forces" members to cooperate; this is an **autocratic** relationship. Second, they can have a leader who "helps" members to cooperate, creating a **democratic** relationship. Finally, they can do nothing, and so have an **anarchistic** relationship.

If anarchy exists, there is a great chance of the conflicting dynamics destroying the channel. If autocracy exists, there is less chance of such happening. However, the latter method creates a state of cooperation based on power and control. This **controlled cooperation is really subdued conflict** and makes for a more unstable equilibrium than does voluntary democratic cooperation.

But how does a supplier **project itself into the channel**? How does it make organization and channel into one? It accomplishes this by doing many things for its retailers that it does for its own organization. It sells, advertises, trains, plans and promotes for these firms... The big supplier can act as a management consultant to the members, dispensing advice in all areas of their business.

Source: Mallen 1963, p24-33 & 54 [Emphasis added]

**Figure 5.6 Autocracy, Democracy, Anarchy (Mallen 1963)**

The word democracy has a normal political meaning of 'the representation of people through a democratically elected government'. Clearly that is not the meaning used here. Democracy can also mean 'the control of an organization by its members who have a right to participate in the decision making process'. The use of the word democracy or democratic in this latter sense can cause misunderstanding in this marketing channel context.

**Summary**

An **autocratic** relationship exists when one channel member controls conflict and forces the others to cooperate.

A **democratic** relationship exists when all members agree to cooperate without power play.

An **anarchistic** relationship exists when there is open conflict, with no member able to impose his will on the others.

For maximization of channel profits and consumer satisfaction, the **channel must act as a unit**.

This has led to the concept of the channel as an extension of the firm's organization.

It is argued that this concept is actually the marketing concept adapted to a channel situation

The mass **retailer** appears to be best adapted for leadership under the marketing concept

Source: Mallen 1963, p24-33 & 54 [Emphasis added]

**Figure 5.7 Democracy Summary (Mallen 1963)**

The definition used here is quite specific. There is a leader of the channel but the style of that leadership is consultative rather than democratic. The leader consults with the members of the channel for their input and commitment (Figure 5.7). This is quite distinct from the members having the right to participate in the decision

making process, or taking a vote on policy. The leader organises and plans through consultation and participation. It is with this particular meaning that the word democracy is included in the list of key word expressing important supply chain characteristics in this thesis.

<p><b>Retailer as channel leader</b></p> <p>The usual pattern in the establishment of channel relationships is that there is a leader, an initiator who puts structure into this relationship and who holds it together. This leader controls, whether through command or cooperation, i.e., through an autocratic or a democratic system.</p> <p>Too often it is automatically assumed that the manufacturer or producer will be the channel leader and that the middlemen will be the channel followers. This has not always been so nor will it necessarily be so in the future. <b>The growth of mass retailers is increasingly challenging the manufacturer for channel leadership, as the manufacturer challenged the wholesaler in the early part of this century.</b> The mass retailer is next in line.</p> <p><i>Pro-Retailer.</i> This writer sees the mass retailer as the natural leader of the channel under the marketing concept. The retailer stands closest to the consumer; he feels the pulse of the consumer wants and needs day in and day out. The retailer can best undertake consumer research right on his own premises and can best interpret what is wanted, how much is wanted, and when it is wanted.</p>
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Source: Mallen 1963, p24-33 & 54 [Emphasis added]

**Figure 5.8 Retailer as Channel Leader (Mallen 1963)**

There is a further insight from this contribution. It is that it identifies the changing power base in the marketing channel. Early in the twentieth century the middlemen were the powerful brokers while the manufacturers were small businesses and unable on their own to access the market place. Then manufacturers grew in scale and power and the middlemen became the less power member of the marketing channel. By the middle of the twentieth century, the mass retailers were growing in scale and power. They were identified as the ‘natural leader of the channel under the marketing concept’ (Figure 5.8). Yet most of the other literature was still heavily engaged in promoting the concept of the channel captain and directing that at the large manufacturers. What is revealing in this excerpt is the use of the term ‘natural leader’ in connection with the retailer rather than the explicit channel captain that is used with the manufacturers. It is as though the term is being fine-tuned: channel captain for

manufacturers; natural leader for the mass retailers. This could be a contributory factor for the gradual reduction in the use of the word channel captain.

Democracy is the first of the supply chain characteristics chosen for the short list. This shortlist of key words will be used as a benchmark for the cases in chapter seven and will be derived from the literature as the chapter progresses.

### 5.1.3 Retailers as Product Innovators: Moyer 1975

The proposition that ‘channels compete’ combines with the increasingly powerful position of the ‘mass retailers’ to shift the balance of power away from the manufacturers towards the retailers (Figure 5.9). One technological influence on this power balance was the introduction of automated front ends in retail.

**Retailers as product innovators**  
**Captained channels have “high vertical programming potential”.** In retailer-led marketing channels, an attractive use of that potential is to absorb some of the manufacturer’s product planning function through **specification buying**. But here the merchant’s paucity of market information becomes increasingly a penalty. In unambitious forms of private branding, retailers can get by on simple “knockoffs” of supplier’s makes. Most do. To date then, private branding has required the ability to imitate rather than innovate. **But if retailers are to grasp their full potential as channel captains, they will need to develop forms of specification buying that can generate something more than “me too” products.** Then there will be a new need to discover unique, wanted, product features. As has been shown, the price of progress is that they lack that capability. However, if through market research and automated front ends retailers could steep themselves more deeply in consumer’s unmet wants and needs the retailer-managed marketing systems could more fully exploit that vertical marketing potential.

Conclusion  
 In an era of advancing vertical marketing systems, **it is increasingly realistic to see the channel of distribution as a unit of competition.** If these units are to be truly responsive to public needs and expectations, they must be led by channel captains who are well tuned to their constituencies.

In the marketplace, mass retailers are important channel captains, and in academia they are usually favored ones. Yet they are often less understanding of their environments than has been commonly thought. Their unresponsiveness stems less from lack of will than from fundamental changes in the retailing industry. However, the retailer’s capacity and credentials for channel captaincy are correspondingly diminished.

Source: Moyer 1975, p 8-15 & 112 [Emphasis added]

**Figure 5.9 Retailer as Product Innovators (Moyer 1975)**

Ideally, this technological breakthrough should give the mass retailers all the data they needed to enhance their power position relative to the manufacturers.

They could have used that customer purchasing information to improve their 'private brand' product range. 'Specification Buying' is the term given to this process of a retailer telling a manufacturer exactly what to make and even how much it should cost to produce. As will be explained later 'Specification Buying' is a powerful tool in establishing retailers as channel captains. However many retailers were not aware of the potential advantage of this technological innovation. Their lack of awareness limited their ability to establish control over the marketing channel.

There is now a clear link between mass retailers as channel captains and the technology power to see the 'channel of distribution as a unit of competition' in an 'era of advancing vertical marketing systems'. This demonstrates the enabling power of information technology to alter the member in the channel that is the natural leader. This use of information and technology is an influence on supply chain change that is external to the relationship dynamics between the members. Yet it does affect directly the balance of power between the manufacturers and the mass retailers. There was the potential for a big switch in the point of control over the 'channel of distribution as the unit of competition'. The insight provided by this contribution reveals a pivotal change that was then taking place in supply chain change.

#### **5.1.4 Associative Relationships: Dawson 1990**

Relationships within the supply chain are closely linked with the style of relationship between retailers and suppliers. A centralised buying function can operate in an aggressive competitive style, playing one supplier off against another as though they were interchangeable and transient. This is a 'transactional' style. There is a different form of relationship that is 'associative'. In an 'associative' relationship,



participants jointly undertake the necessary activities in a value adding partnership (Figure 5.10).

**Associative Relationships**  
 A fifth type of channel relationship may be observed which again is **intermediate between the transactional and corporate integrated extremes**, but which is associative. In this type of relationship participants jointly undertake the necessary activities in a value adding partnerships (Johnston and Lawrence, 1988)...The form of the relationship has been present in horizontal markets for some time, whether at the consumer level through consumer cooperatives or at retail level with buying consortia and joint ventures.

**A radically different management culture is required for these associative relationships than is commonplace in the highly aggressively competitive transactional relationships or power exploitative administered and contractual systems**.....members of co-operative groups with shared objectives should not be the first to play 'competitive' games, nor should they seek to gain an upper hand on other members of the association. Such almost altruistic behaviour can be culturally painful for managers who have been encouraged, throughout their career and development, to compete. It requires a different approach to insiders of the associative relationship than to outside competitors.

Associative systems are enabled by networks which allow simultaneous sharing of information among network members but exclude non-members (Miles and Snow, 1987). These allow co-ordinated responses to the environment outside the channel and to the activities of non-members of the network. **These networks of shared information also work positively to increase interdependency and efficiencies of member of the network such that new cost economies of network membership arise which become exclusive to the particular vertical relationship.**

The vast majority of retailer-supplier relationships is of one of the four more widely recognised types. There appears to be an increase in the proportion of administered systems of channel relationships at the expense of the two extreme positions. Such a move to channel relationships which have explicit power and dependency component is quite distinct from the creation of associative relationships.

Source: Dawson and Shaw 1990 [Emphasis added]

**Figure 5.10 Associative Relationships (Dawson 1990)**

The relationship style in an 'associative' relationship is radically different from the aggressive, competitive style found in 'transactional' buying. It is a more open sharing of information and the avoidance of 'competitive games'. This 'associative' relationship style is found in some supply chains. The ECR Movement seeks this style of relationship between retailers and suppliers in managing supply chain change. For this reason 'associative' is the second characteristic chosen for the shortlist of keywords that will be used as the benchmark for the cases in chapter seven. As this will be an extension of the use of the term, it will be applied to specific circumstances. These circumstances will be situations where information and assistance is provided to supply chain members on an open and voluntary basis for the good of the whole supply chain.

This often is alongside a more structured relationship that may exist between two or more members of that supply chain. This will be the manner in which this characteristic is applied in the cases.

This concludes the section on ‘channels compete’. It has provided two supply chain characteristics, ‘democracy’ and ‘associative’. These two key words will be part of the benchmark for the cases in chapter seven. This journey about channels competing as whole channels bridges America and Europe over a period of several decades. Within this ‘channels compete’ framework for the supply chain, it is logical to examine the dynamics within the channel to establish further key characteristics for the benchmark exercise.

## 5.2 Channel Dynamics

Channel dynamics is a complex topic. Recent business developments have radically changed the way organisations operate. This section begins with a short account of the transition from ‘function’ to ‘process’. This type of transformation in company behaviour opens up new opportunities for the management of supply chain change. This will set the scene for a closer examination of four key supply chain characteristics. The task is to take concepts evolved in one business environment or discipline and place them in the supply chain change framework. This extends the knowledge base for academics and practitioners. It applies learning from one arena to that of the supply chain. This is one of the purposes of this thesis. It is intended as a bridge. This section is a contribution to that purpose.

### 5.2.1 Function to Process: Christopher 2003

Supply chains evolve so that they become faster and more responsive to customers actual demand patterns. This is a major component of supply chain change. In order to achieve this responsiveness there has been transition away from conventional functional structures, which create silos within and between organisations. The emphasis is on controlling the processes related to the flows of information and material from source to consumer. This process control requires all the relevant disciplines to work together in a multi-functional team (Figure 5.11). This change in relationship behaviour is a challenge for a traditional organisation to break down the barriers to integration. Making that transition from function to process is important in modern supply chains. It is essential to have the involvement of the different members in the decisions about changing the process so that a benefit to one member does not result in a counterproductive effect on another member. Such impacts can negate the benefit of the change proposed for the supply chain.

**Function to Process**  
 These **cross-functional linkages** should follow the materials and information flows that connect the customer with the business and its suppliers. They are in fact the core processes of the business. In the responsive organisation the emphasis is upon the management of processes.

One of the thought leaders on **process re-engineering**, Thomas Davenport, has defined a process in an organisational context as:

- Any activity or group of activities that takes an input, adds value to it, and provides an output to an internal or external customer.
- The characteristics of business processes include the following:
  - They have customers for whom they create value
  - They typically cross functional boundaries
  - They are team based
  - They have strategic goals
- The challenge to the organisation is to break down the functional barriers to integration and instead become a market-facing business.

*Source: Christopher and Peck 2003, p107 [Emphasis added]*

**Figure 5.11 Function to Process (Christopher 2003)**

The transition from function to process is built on the partnership relationships that need to exist in the modern business environment. It is a change from transactional to collaborative mode (Figure 5.12). Supply chain management is a

critical capability to which a firm must have access. If that is outsourced, there is the task of retaining control over the activity, while a third party is conducting its executive. That ability to control external activities is one of the elements in supply chain change.

**Partnerships (a)**  
 In the past, business organisations tended to perform most activities **in house**. In the era of vertical integration, companies would seek to control through ownership of their entire value chain....**Today, the thinking has undergone a 180-degree change, with corporations seeking to focus on core competences and outsource everything else.** By definition, the more companies focus on those activities they believe they have a differential advantage in, the more they need to rely on others. As these external dependencies increase, it becomes vital that the nature of the relationship switches from the arm's length transactional mode to a collaborative partnership mode.  
 We would argue that there are three critical capabilities to which any firm must have access: 1) Customer relationship management; 2) Innovation; 3) **Supply chain management**.  
 The business itself may lack the competencies and skills to master all of these, and will almost certainly need to rely upon others to provide some (or all) of the key elements of these processes. The danger in outsourcing anything is the loss of control. In fact, **outsourced activities must be even more closely managed than if they were performed in house. The maxim must be, outsource the execution of a process but never the control of that process.**

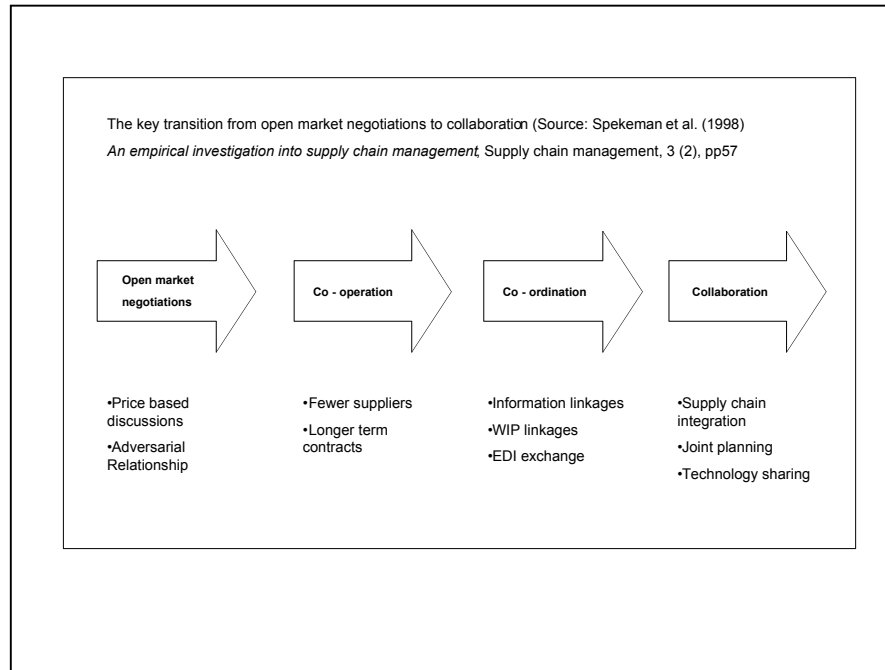
Source: Christopher and Peck 2003, p 28-29 [Emphasis added]

**Figure 5.12 Partnerships (Christopher 2003)**

The new style partnership approach to channel management challenges much of the conventional thinking about buyer-supplier relationship. The extent and nature of this challenge is a component of assessing the degree of difficulty in implementing supply chain change.

### **5.2.2 Collaboration: Spekman, Kamuff and Myhr 1998**

Collaboration is one end of a long journey from transactional relationships. It is identified as a goal to be achieved in the supply chain (Figure 5.13). Collaboration supports a sustainable long-term supply chain strategy. There is a clear distinction between the levels of co-operation, co-ordination and collaboration. Their description is provided in (Figure 5.14). The foundation of collaboration is 'trust and commitment'. It leverages the 'skills, expertise and capabilities' of the firms in the network. 'Collaboration' is one of the key supply chain characteristics that are part of the benchmark for the cases in chapter seven.



**Figure 5.13 Collaboration Diagram (Spekeman 1998)**

#### **Collaboration**

Collaborative behaviour engages partners in joint planning and processes beyond levels reached in less intense trading relationships.

**The essence of supply chain management is as a strategic weapon to develop a sustainable competitive advantage by reducing investment without sacrificing customer satisfaction.** While reduced cost is typically a result, supply chain management should emphasize leveraging the skills, expertise and capabilities of the firms who comprise this competitive network referred to.

**Managers have long acknowledged the importance of getting close to their key customers.** Now that this logic has extended upstream as well, it is also important to forge close ties to one's key suppliers. **A sustainable supply chain strategy extends these linkages upstream and down.**

Effective supply chain management in the new competition suggests seeking close, long term working relationships with one or two partners (both suppliers and customers) who depend on one another for much of their business; developing interactive relationships with partners who share information freely, work together when trying to solve common problems when designing new products, who jointly plan for the future, and who make their success interdependent.

Co-operation, whereby firms exchange bits of essential information and engage some suppliers/customers in longer-term contracts, has become the threshold level of interaction. That is, **co-operation is the starting point for supply chain management** and has become a necessary but not sufficient condition.

The **next level of intensity is co-ordination** whereby both specified workflow and information is exchanged in a manner that permits JIT systems, EDI, and other mechanisms that attempt to make seamless many of the traditional linkages between and among trading parties. Trading parties can co-operate and co-ordinate certain activities but still not behave as true partners. Again, this evolution is a necessary, but not sufficient, condition for total supply chain management.

**Success is no longer measured by a single transaction; competition is, in many instances, evaluated as a network of co-operating companies competing with other firms along the entire supply chain. Supply chain management is built on a foundation of trust and commitment**

Source: Spekeman et al 1998, p 53-67 [Emphasis added]

**Figure 5.14 Collaboration and Networking (Spekeman 1998)**

There are considerable benefits to be gained through partnership style relationship (Figure 5.15). This is the motivation to achieve that style of relationship in supply chain management

<b>Benefits gained from working closely with suppliers</b>
The supplier is given long term motivating to invest and improve A close relationship is a pre-requisite for just in time [JIT] implementation Waste between companies can be eliminated; paperwork, transportation problems, quality expectations The opportunity to eliminate inbound goods inspection as the supplier is developed to be 100% quality capable and zero inspection is required The opportunity for vendor managed inventory joint research and development opportunities for new products and processes in both companies The opportunity for common electronic data information [EDI] standards development True final consumer demand sharing to eliminate artificial demand distortions Preferential pricing over market based supply Preferential supply in times of short supply to the marketplace
Summary: These combine to allow the serving of customers with better products, faster and at a lower price than through maintaining transactional supply relationships
Quote from the article: "The literature on supply chain, operational, strategic and logistical management over the past two decades has repeatedly emphasised the benefits that can be gained from companies working closely with suppliers and forming long term relationship: Womack et al 1990; Womack & Jones 1996; Saunders, 1997; Bailey et al, 1998; Bicheno 1998; Christopher 1998; Hines et al 2000; Reeves, 2001; Kotzab, 2001; Jones, 2001".

*Source: Hines, Holweg, Piercy and Richl 2002*

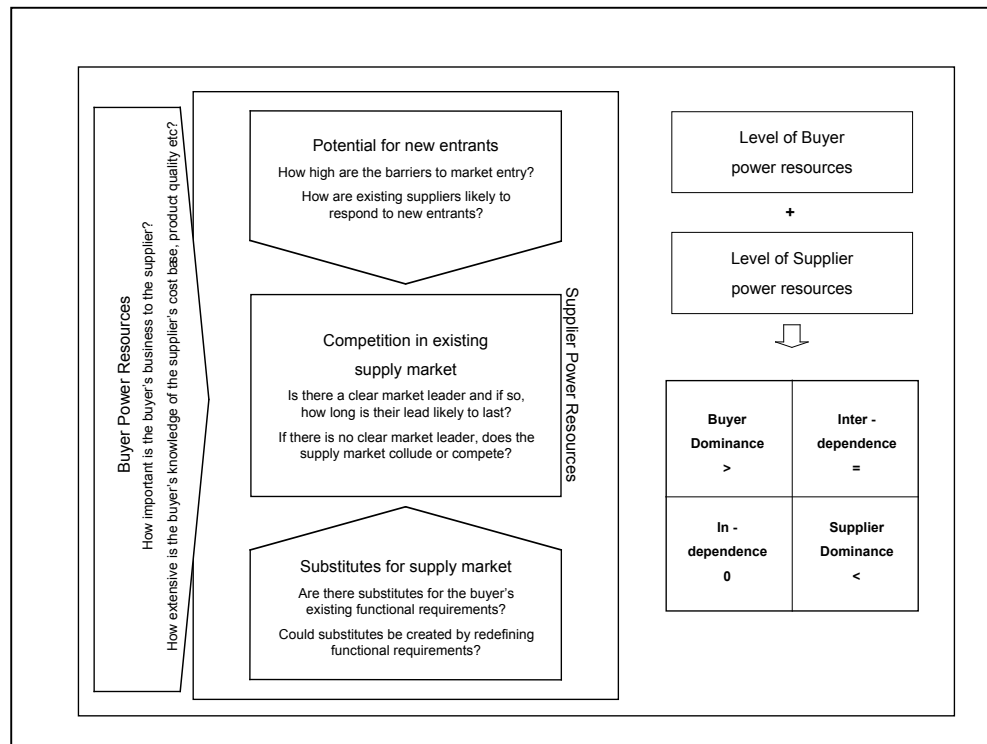
**Figure 5.15 Supplier Relationships – Benefits (Hines 2002)**

These benefits from good supplier collaboration partnerships provide evidence of the success of this type of relationship.

### **5.2.3 Interdependence: Porter 1980**

‘Interdependence’ is used to express a balanced relationship between buyer and supplier in which the rewards are equal (Figure 5.16) (Also Kumar 18996 cited in Fernie 2004a). “The buyer and supplier are said to be interdependent if the relative utility and scarcity of resources held by each party is high”. This is an ideal position for partnerships but occurs in limited circumstances. Where there is Dominance by either the buyer or the supplier, they will take a large portion of the reward. The assumption could be that ‘interdependence’ would not apply between large and small businesses. There are circumstances when the two form a complementary relationship despite their

differences in size. Even in these circumstances, it is appropriate to use the term ‘interdependence’. This key characteristic ‘interdependence’ is therefore included in the shortlist for the benchmark because it represents an ideal outcome for the two parties.



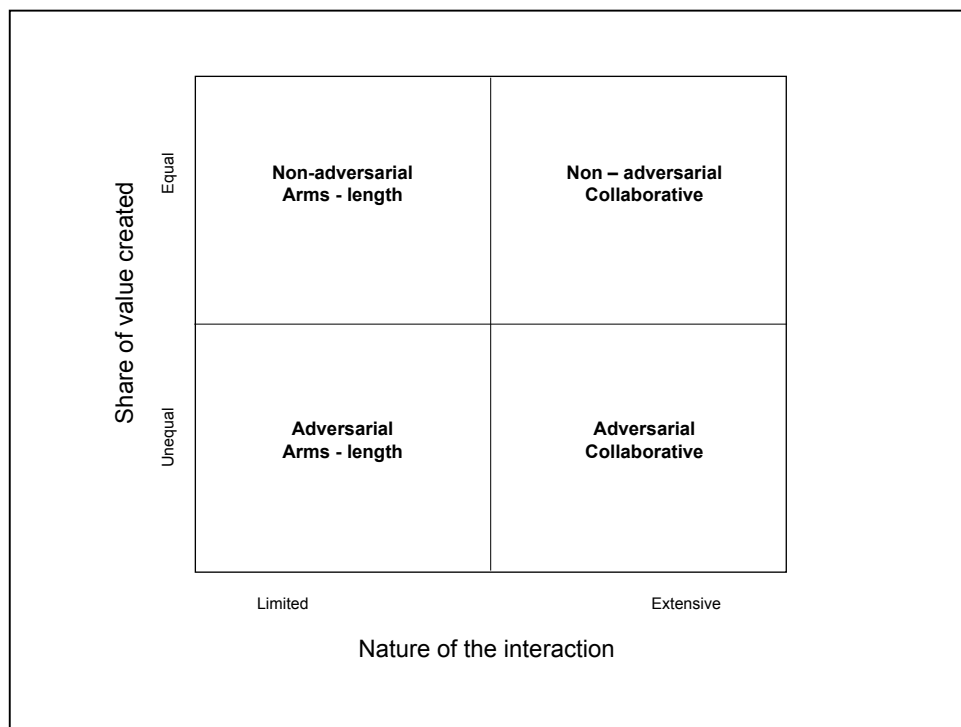
**Figure 5.16 Power and Competition Analysis (Porter 1980)**

#### **5.2.4 Non-Adversarial: Lonsdale 2002**

There is a view that even adversarial relationships can be collaborative. (Lonsdale 2002, Figure 5.17). However, an ideal relationship is that which is collaborative and non-adversarial. For this reason ‘non-adversarial’ is included in the shortlist of key characteristics for the supply chain benchmark.

The supply chain application will be linked to the buyer – supplier relationship. If the latter is adversarial, it is probable that the former will also be

adversarial. Conversely, if the buyer already has a non-adversarial relationship with the supplier, there is a high probability that the supply chain relationship will also be non-adversarial. A different combination might also apply. Parts of the relationship may be adversarial, perhaps relating to a price on a specific product. Other aspects of the relationship may be non-adversarial. Both parties are able to work well on supply chain issues. These are the judgements that will be made when considering how to apply the key word ‘non-adversarial’ in the cases in chapter seven.



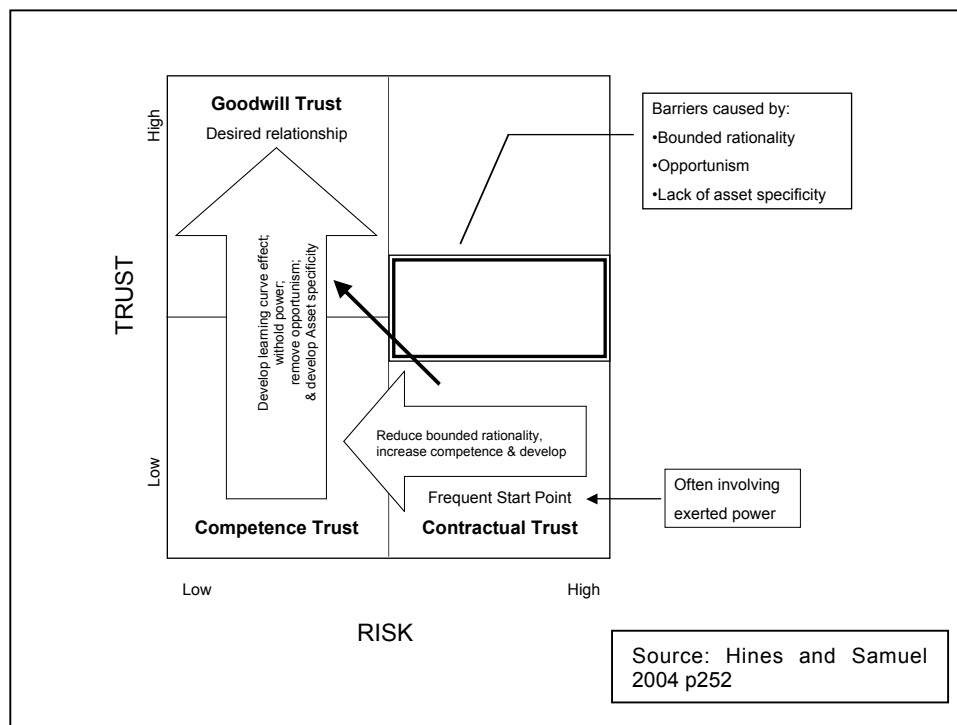
**Figure 5.17 Adversarial – Collaborative. (Lonsdale et al 2002)**

### **5.2.5 Goodwill Trust: Hines 2004**

Goodwill Trust is a key characteristic of supply chain relationships. It is included in the shortlist of key words for the benchmark exercise. It is selected because it is a desired relationship. That goodwill trust represents a bridge between a small and a large member in the supply chain. It is founded on ‘withheld power’. This is an important concept. It represents the integrity of one member not to exploit the



opportunism that presents itself from another member. That type of exploitation is a great risk between members of unequal power. Clearly, the model (Figure 5.18) is complex. It is a recent contribution to academic debate about change in the supply chain. It explores the two-stage transition from the frequent starting point to the desired relationship, from contractual, through competence to goodwill trust.



**Figure 5.18 Model of Integrated Supply Chain Management (Hines 2004)**

In the cases, there are situations where there is a small niche supplier working with a large national supermarket operator. This term ‘Goodwill Trust’ will be applied to those circumstances where the large retailer has withheld ‘opportunistic’ power. This is withheld in order to nurture a relationship. In some instances, the niche supplier may be providing a quality product that adds high value to the category in which it is placed.

This concludes the section on channel dynamics. It has identified further key characteristics for the benchmark: collaboration, interdependence, non-adversarial, and goodwill trust. The next section considers channel champions.

### 5.3 Channel Champions

The earlier sections demonstrated that there is a role for a leader in the supply chain. In the American marketing literature, the leader is called the 'channel captain'. Mostly that refers to the manufacturers but there was recognition of the rise in power of the mass retailers. In the era of advanced vertical marketing systems, the retailer was a strong contender to take over the leadership of the marketing channel. This was founded on not only their size and scale but also their access to consumer information. This access was the result of technology at the front end of the retail store. This was linked to the value of 'specification buying' for retailer branded products. In ECR, there are calls for champions in the supply chain.

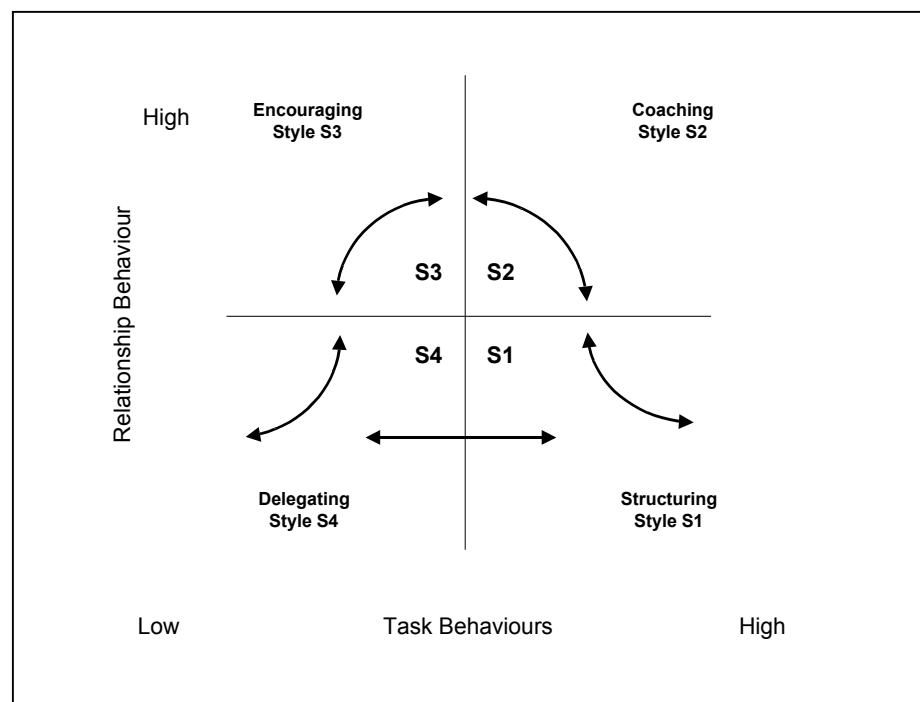
This section explores a limited set of topics. The first is Situational Leadership. As this is a broader reflection that applies to all the cases in chapter seven, it is not included in the benchmark shortlist. The next three topics are included in that shortlist. The win-win of the negotiation styles, the presence of a dominant designer and finally 'specification buying'.

It is recognised by the author that there are many other models of behaviour that could be brought into debate, but two frameworks concerning situational leadership and negotiation are sufficient to help to inform an assessment about the range of skill sets required for a channel organiser, leader and captain. They can be used to evaluate,

review, critique and develop leadership success, which is a demanding task given the complexity of the retail channel.

### 5.3.1 Situational Leadership: Hersey & Blanchard 1997

The role of leadership is complex. How individuals, companies or other bodies relate to each other in leadership is a relevant topic for consideration at this stage in the chapter. Research reveals that no particular style of leadership is best. On the contrary, effective leadership behaviour is that which is appropriate for the specific situation that exists in the environment in which the leader is functioning (Figure 5.19).



**Figure 5.19 Situational Leadership Style (Hersey and Blanchard 1977)**

**S1 Structuring.** Here the leader takes a major role in deciding how the task can best be accomplished and then giving those instructions, including demonstrating how it is to be done.

**S2 Coaching.** This focuses on interaction, since the leader–subordinate relationship revolves around two goals, accomplishing the task and developing task–relevant ability and commitment, so the leader explains the why and how with realistic targets, helping the person and recognising and rewarding performance.

**S3 Encouraging.** This seeks to ensure that subordinates are increasing in their confidence and ability in an outstanding and independent fashion, by facilitation, listening and two-way communication.

**S4 Delegating.** This assigns tasks to appropriately skilled subordinates and allowing them to proceed on their own with minimal involvement.

The styles S1, structuring and S4, delegating are less demanding in terms of the manager’s time and emotional involvement. In contrast, style, S2, coaching and S3, encouraging, demand a higher level of time and emotional involvement.

The arrows show the various routes of progress or regression that people can take place over time and which determine how the leader could deal with those situations. In the context of this thesis such a model, which is applied in people leadership, can also be extended to exploring how leadership styles might need to adapt in managing change in a supply channel between companies; the same principles apply. Table 5.1 provides information about the people and tasks for which the particular styles are most relevant or least appropriate.

This topic of situational leadership style applies to all the cases in chapter seven. It will be used as part of the analysis in chapter eight, as a general point. It is not a specific key characteristic for the benchmark shortlist.

MOST appropriate when managing	LEAST appropriate when managing:
<b>S1 Structuring management style with persons who:</b>	
<ul style="list-style-type: none"> <li>• are new or have little experience in doing a task</li> <li>• are not self-motivated or willing to do a particular assignment</li> <li>• feel insecure and lack self-confidence</li> <li>• are performing well below standard</li> </ul>	<ul style="list-style-type: none"> <li>• are skilled and experienced in doing a task</li> <li>• are self-motivated and confident in their ability to meet or excel performance standards</li> <li>• Where it is difficult to measure production in the short run</li> <li>• Where time pressures are not critical</li> </ul>
<b>S2 Coaching management style with persons who:</b>	
<ul style="list-style-type: none"> <li>• bring to the task some skills and experience but are performing below standard</li> <li>• respect you and your knowledge and position</li> <li>• want to share responsibility and work with you in an interdependent way</li> <li>• Where time is not a critical factor</li> </ul>	<ul style="list-style-type: none"> <li>• are very skilled and experienced in doing the task</li> <li>• are highly motivated to do their best</li> <li>• do not need your hands-on involvement to do a good job</li> <li>• have little or no skill, experience, or confidence in a particular work assignment area</li> </ul>
<b>S3 Encouraging management style with persons who:</b>	
<ul style="list-style-type: none"> <li>• are quite skilled and experienced in doing an assignment</li> <li>• are self-motivated and takes responsibility for the task</li> <li>• are performing at or above standard</li> <li>• Where there are a number of different ways to go about getting the task done</li> </ul>	<ul style="list-style-type: none"> <li>• are not performing up to standard</li> <li>• lack sufficient knowledge or experience to perform satisfactorily without direction</li> <li>• do not show initiative in this area</li> <li>• do not take responsibility for outcomes in this performance area</li> </ul>
<b>S4 Delegating management style with persons who:</b>	
<ul style="list-style-type: none"> <li>• have all the required knowledge, skill, or experience needed to do an outstanding job</li> <li>• are self-confident and highly motivated</li> <li>• take pride in excelling and is performing well above standard in this particular area</li> <li>• A person who initiates action and accepts responsibility for a task</li> </ul>	<ul style="list-style-type: none"> <li>• are new, inexperienced, or unskilled in a particular task</li> <li>• are unwilling to take responsibility for their own planning and productivity in a work area</li> <li>• do not feel comfortable or confident in doing the task</li> <li>• are not performing the assignment above standard</li> </ul>

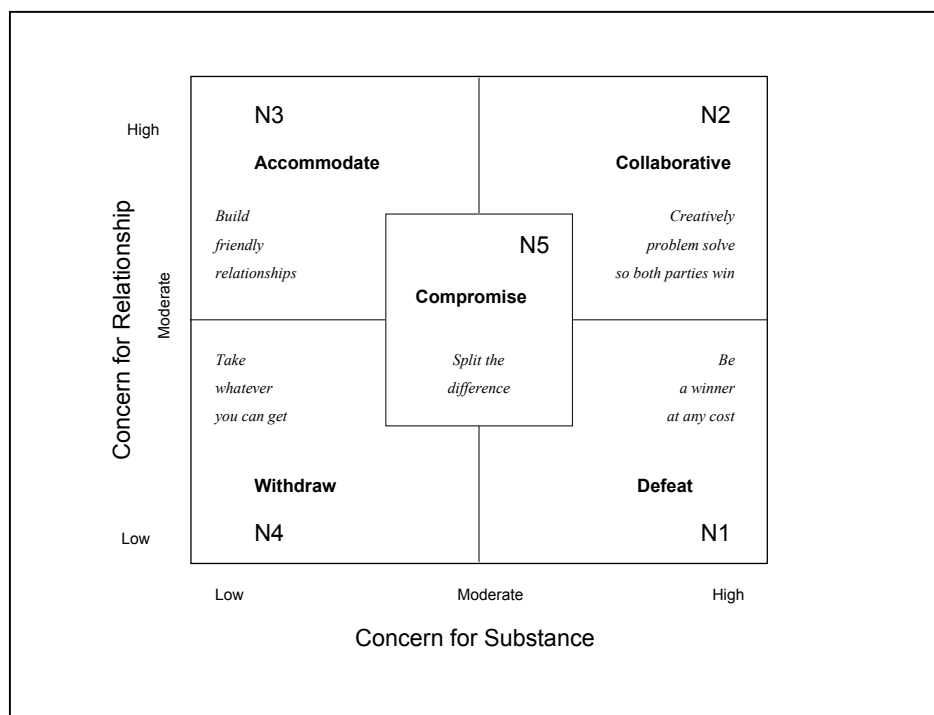
**Table 5.1 Situational Leadership Styles (Hersey & Blanchard 1977)**

### 5.3.2 Negotiation Styles: Glaser & Glaser 1991

Similarly, there is a model for the various styles that can be used in negotiation. Every participant in a negotiation has two important concerns during the negotiation process. The first concern is with the substance or outcome of the agreement. The second is a concern with the relationship with the other parties in the negotiation. People have varying degrees of interest in these two behavioural dimensions.

One person through his or her determination to drive the best bargain at any cost, for example, might express the concern for substance. Only the substance or getting the best deal matters. Others have somewhat less concern for substance. There are people who are willing to accept whatever can be gained and make little or no effort

to influence directly the outcome of the process. The second concern every participant to a negotiation has, is for the relationship with the other party. Does the other person want to have certain needs fulfilled? Does this person like me? Is my behaviour offensive? Will this person negotiate with me in the future? What kind of relationship should we build before and during our discussion? How will it affect this person's willingness to carry out our agreement, if one should be reached? An individual's concern for the substance and concern for relationship with the other negotiating partner may both be graphically represented on a continuum ranging from low to moderate to high (Figure 5.20). This model of negotiating styles shows how the two concerns interact to produce the five characteristic negotiating styles.



**Figure 5.20 Model of Negotiating Styles (Glaser and Glaser 1991)**

There are five negotiating styles. First, N1; defeat the other party; a pattern that is characterised by win-lose competition, pressure, intimidation, adversarial relationships, and the negotiator is attempting to get as much as possible for themselves despite the cost to the other party.

Second, N2; win–win outcome; here a high degree of concern for both the substance of the negotiation and the relationship with the other party is expressed; characterised by searching for common interests with the other party, problem solving behaviour, and recognising that both parties must get their needs satisfied for the outcome to be entirely successful.

Third, N3; accommodate the other party's needs, where the focus is on building compatible relationships in the hope that the negotiation will be successful, characterised by avoidance of substantive differences, yielding to relationship pressure above the fairness of the outcome.

Fourth, N4; withdraw, where there is a low concern with both the substance of the negotiation and the relationship with the other party, characterised by feelings of powerlessness, indifference to the outcome, resignation, surrender, taking whatever the other party is willing to concede.

Finally, N5; compromise, where there is only a moderate interest in the substance or the relationship, characterised by compromise, meeting the other party half-way, looking for trade – offs; conflict reduction is valued over synergistic problem solving.

A negotiator may choose variations of each style because it may be appropriate in certain conditions. However a consistent application of the N2, collaborate style, offers the greatest probability of producing negotiation results of the highest quality and most enduring satisfaction to the parties involved. This win – win

collaborative style will be highly successful in the right context if it approached with the right skills and the manner (Figure 5.21).

The 'N2 win-win' negotiation style is a key characteristic of good supply chain management. It is on the shortlist for the benchmark of criteria for the cases in chapter seven.

<b>Interpersonal skills identified for win – win N2 negotiation style</b>
Assertive behaviour Supportive climate – building Active listening, empathetic responding Non verbal behaviour sensitivity Using probes to raise receptivity Confronting and working through differences
<b>Method of approach to help achieve win – win N2 negotiation style</b>
Comprehensive preparation An appropriate opening to set the tone of the negotiation Exploring each party's needs Creating development of alternatives Use of objective criteria to evaluate agreements Appropriate closing to define the agreement Critique of negotiated outcomes

**Figure 5.21 Negotiating Styles: Interpersonal Skills (Glaser and Glaser 1991)**

### 5.3.3 Dominant Designer: Koehorst et al 1999

The concept of a designer is readily understood. The application of the term 'dominant' refers to the party that is able to insist on the application of their design concept. Normally this is the producer of the product (Figure 5.22). Occasionally it is the purchaser of the product.

<p><b>Dominant Designer</b>            When the initiator of a new standard has a considerable market share, one may call him the dominant agent: an agent that is in a position to enforce his initiative on others (Braunstein and White, 1985). Typically, however, the <b>dominant agent concept</b> is reserved to describe the role of a producer as against user-initiated standardization as is here the case (and in Dankbaar and VanTulder, 1992).</p>
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*Source: Koehorst, de Vries and Wubben 1999, p95–101 [Emphasis added]*

**Figure 5.22 Dominant Designer (Koehorst 1999)**



Some of the cases in chapter seven have been selected because they represent a dominant designer situation. It is the retailer who is the dominant designer in these cases, which are not related to consumer products. They relate to aspects of the supply chain, for example, plastic tray design and temperature controlled trailer design. Dominant Designer is one of the key words in the benchmark of characteristics.

### 5.3.4 Specification Buying: Kelley 1954

The concept of specification buying goes back to the 1930s for the American great department stores. It illustrates both vertical integration and process control over suppliers (Figure 5.23).

**Specification Buying**  
 The definition of 'specification buying' however, contains the idea that the purchasing firm exercises a rigid control over the quantitative and qualitative characteristics of a given item. Since this control aspect is such an important attribute of the arrangement, it well reflects the complex of ideas presented below.  
 There are many examples in which the great department stores of the latter part of the 19<sup>th</sup> Century integrated vertically into the manufacturing field.

*Source: Kelley 1954, p 255–265 [Emphasis added]*

### Figure 5.23 Specification Buying (Kelley 1954)

There are two reasons for including this in the list of key characteristics on the benchmark short list. The closeness of the relationship between those original retailers and their suppliers provided the great department stores with competitive advantage. The first is that it is a link to the past. It is not a term that is used in Europe. The second is that there are instances in the cases that can be described as 'specification buying'.

## 5.4 Channel Types

**Acknowledgement:** The author worked on the content of this section 6.4 with his co-authors, particularly at Lund University Packaging Logistics Department

(Gustafsson et al 2006, Ch. 5). At that time of writing, there were two purposes. One was for the book; the other was for this PhD. The way of working was to nominate one writer as the lead author for a chapter with all the others contributing to the input and output.

The term 'Integrative' is included in the shortlist of benchmark characteristics. It is an issue that assists the alignment of the supply chain with the business strategy. It facilitates and reflects collaborative style of relationships both internally and externally. The topic is explored first at a company level and based on this learning is then extended to the supply chain. This combination provides a useful tool to map the circumstances of supply chain change.

#### **5.4.1 Integrative, Segmentalist: Kanter 1984**

Decision-making and change within businesses and companies is a complex process where there often are several options to consider and many issues to negotiate. There are two types of organisational attitudes or company cultures. Their cultures and attitudes shape their disposition towards the change process. They are the *integrative* attitude and its opposite the *segmentalist* attitude (Kanter 1984, 1994). This applies at the company level. Later this context is extended to the supply channel level (Sections 5.4.3 & 5.4.4).

*The integrative company* is a company where employees have access to many types of useful information, collected from both internal and external sources. There is open communication and collaboration between departments, where decentralised decision-making results in team-building, entrepreneurial spirit, less control and more focus on visions for the future. Problems are treated with a holistic

perspective, where attention is given to the consequences in the analysis of different problem-solving actions. Top management encourages innovation and gives support to many change processes. Integrative companies are more proactive than segmentalist companies are. An integrative organisation shows an openness to the surrounding environment and so able to notice the early signals of change in the market. Employees are expected to report to the management on such early signs of change.

*The segmentalist company* is more hierarchical, conservative and traditional. Only the few managers at the highest level make decisions. A fear of change is prevalent and problems are dealt with in a manner that focuses on details rather than trying to get the fuller picture. “Walls” between departments restrict communication and there is little cross-functional team working, the classic silo management culture. Innovation is as Kanter describes it “something given to the R&D department to take care of so no one else has to worry about it.” Control systems allow management to keep a detailed check of the company’s past and present operations but this information is not shared with the workforce. Segmentalist companies with a stable market share, well-running operations and a high profitability are the least likely to support new ideas. Employees who try to point out the emerging threats are considered disloyal. This type of segmentalist company is most vulnerable because of their inability to react to a major change that is emerging rapidly in their market place.

#### **5.4.2 Enablers, Barriers.**

There are three requirements for successful change management. First, the availability of *information*; second, having sufficient *resources* allocated to the change project; and third, support from *senior* management, not only in terms of economic resources but also in the form of a strong commitment to the vision and objectives of

the change project. In addition, there is a fourth requirement. Senior management effort to *gain acceptance* from personnel and all the companies in the supply channel.

There are skilled people who have the insight, experience, knowledge and understanding of the need for change. Sometimes these *enablers* have already initiated the change process. These *drivers* of change are entrepreneurs who have the ability to see through the obstacles. They understand the full picture without losing the detail. They are good communicators, as well as good listeners. They have the capability of sharing their early vision with others. They can handle tension, and they know how to deal with the barriers of change.

There are a range of *barriers* and obstacles. Opposition and resistance can be active or passive. There are two time frames for opposition. Early opposition can be seen as scepticism, as well as reluctance to commit time and resources. Later opposition can emerge unexpectedly, to challenge details in the plan. Active opposition may be easier to handle. It is often possible to discuss with people say they are against proposed action. The verbal argument can be better than silent opposition.

#### **5.4.3 Supply Chain Application: Gustafsson et al 2006**

The discussion above has contrasted integrative and segmentalist companies and how their characteristics affect their ability to change. This concept is extended to the supply chain (Gustafsson et al 2006). It can operate at both the company and the supply chain level. It is argued that change processes are more successful in integrative than in segmentalist organisations. The supply channel perspective is complicated by the diversity of member companies. For example, how do segmentalist companies survive in an integrative supply chain? This theory of segmentalist and integrative

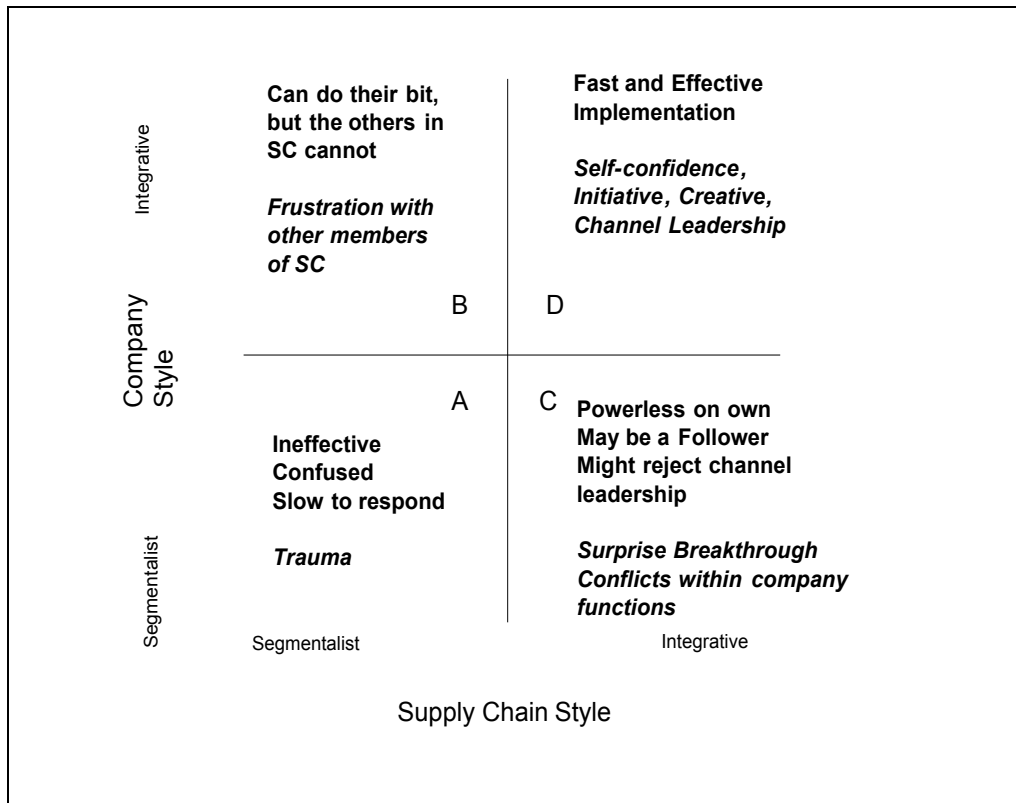
styles can be placed in two dimensions, namely at the company and at the supply chain levels. In this way, it is possible to consider the change management process with the companies in the supply channel as a matrix.

#### **5.4.4 Quadrant Characteristics**

In this matrix (Figure 5.24 a, b; Gustafsson et al 2006), the company style is on the Y-axis and the supply channel style on the X axis. This creates four quadrants, identified as A, B, C, and D representing the various combinations of company, supply channel and their styles. Quadrant A represents a segmentalist company in a segmentalist supply channel. Quadrant B represents an integrative company in a segmentalist supply channel. Quadrant C represents a segmentalist company in an integrative supply channel. Quadrant D represents an integrative company in an integrative supply channel. Members in each quadrant will have different characteristics, different behaviour and face different barriers and find different opportunities. Members can clearly choose how they wish to change or indeed, they may wish to stay as they are. These situations can now be examined in more detail.

The two company types, A and B, are within the segmentalist supply channel, and their information, also from Figure 5.24, provides a short description of the abilities and attributes of the companies and their organisational style. Later there will be a discussion of the options available for them to follow. Quadrant A is a segmentalist company in a segmentalist supply channel. This type of company will be focused on the silo benefits, e.g. marketing are divorced from distribution etc, and will have a single point of contact with suppliers. It will be fairly ineffective, confused about the broader implications and slow to respond. It would experience trauma when faced with supply channel change because it would be overwhelmed and out of its depth.

a) Abilities and attributes



b) Organizational styles

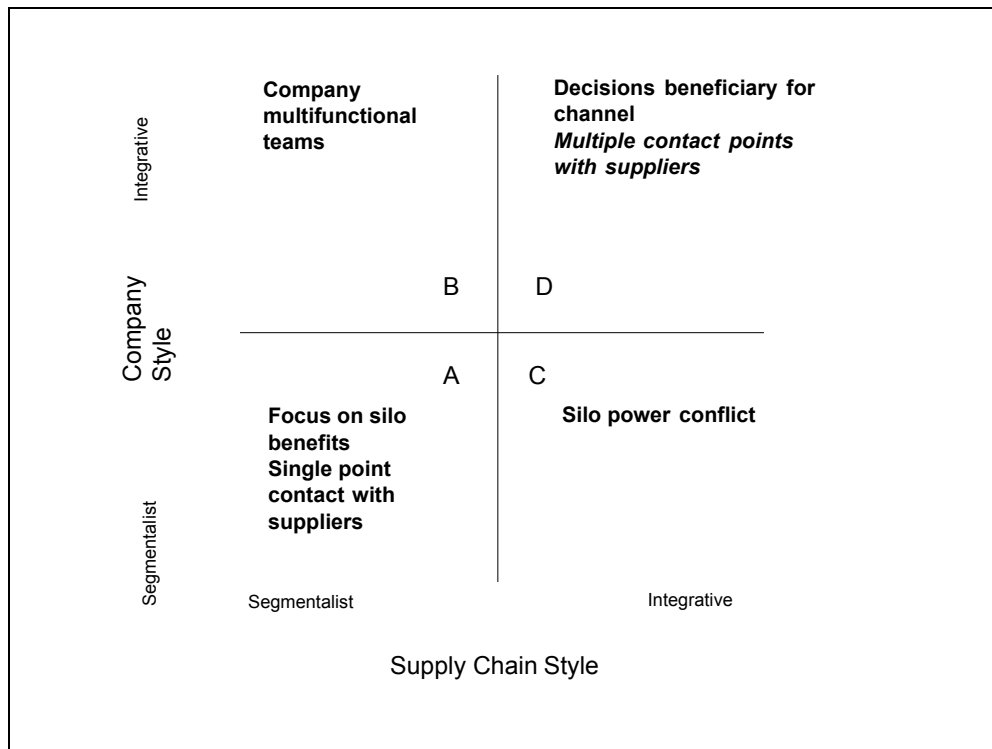


Figure 5.24 Integrative and Segmentalist Companies and Supply Chains

Quadrant B is an integrative company in a segmentalist supply channel. This type of company will already have multifunctional teams working together and understanding each other's goals and objectives. It will have experienced the benefits of this multifunctional collaboration in other areas of its business. However being located in a segmentalist supply channel it will experience frustration with other members of the supply channel because although individual companies can do their bit the other members cannot.

The other two company types, C and D, are within the integrative supply channel, and their information provides a short description of the abilities and attributes of the companies and their organisational style. Later there will be a discussion of the options available for them to follow. Quadrant C is a segmentalist company in an integrative supply channel. This type of company will be focused on the silo benefits, e.g. marketing are divorced from distribution etc, and will have a single point of contact with suppliers. It might be powerless on its own because it is not open to the collaborative approaches of the other companies in the supply channel. It could become a reluctant or willing follower, which this may depend on the nature of the contact. For example, a top-level contact with a powerful function would have a more positive effect than a middle level contact with a marginalised function. As this company still operates in a segmentalist style the different functions do not work collaboratively or adopt a mutual understanding of each other's goals, the company is more likely to have an entrenched hierarchical attitude with a clear view about which functions control the organisation and which are there simply to do as they are told. Even worse, there may exist strong conflicts between different company functions that can be destructive as well as wasteful in time and effort. Even if the integrative supply channel has good quality leadership, there is a probability that a segmentalist company could reject that

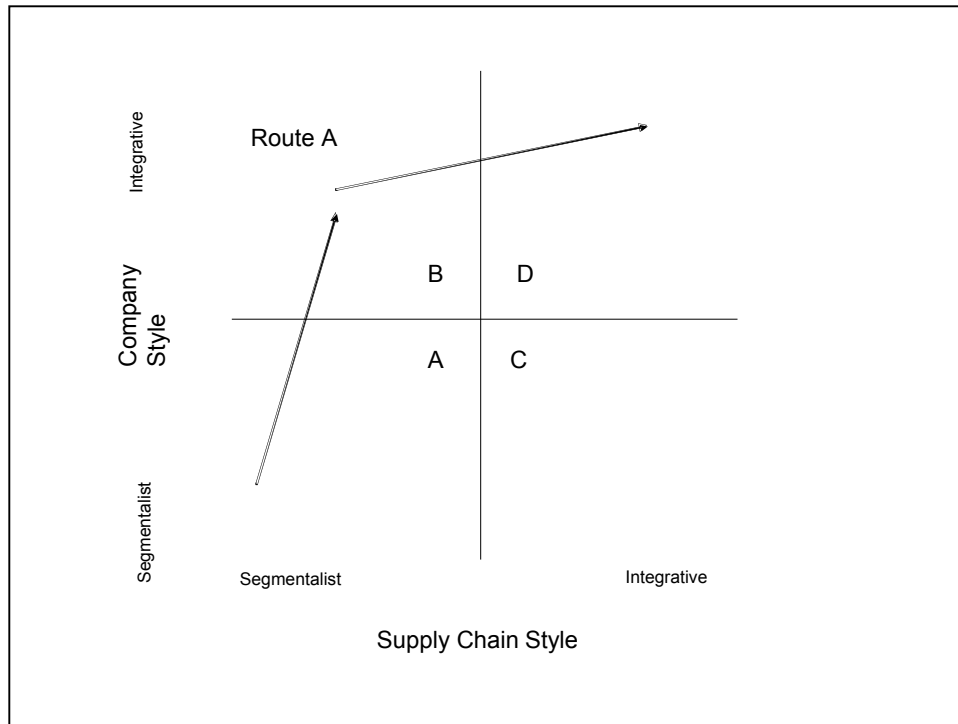
channel leadership, even though it might take some time for it to realise that the company itself has lost out as a result. In contrast, this company might suddenly break out of its segmentalist attitudes and make a surprise breakthrough into the benefits of participating in the integrative supply channel.

Quadrant D is an integrative company in an integrative supply channel. This type of company will already have multifunctional teams working together and understanding each other's goals and objectives. It will have experienced the benefits of this multifunctional collaboration in other areas of its business. It will be very active with its integrative supply channel with multiple contact points with suppliers. The decision-making will focus on the benefits for the competitive position of the channel members in the marketplace. It will be able to make fast and effective implementation of the agreed supply channel policies. It will possess self-confidence, take the initiative and be creative. It could be in a position to take the channel leadership shaping the supply channel. It could be a channel captain.

#### **5.4.5 Routes for Change**

We can now consider the various routes to implementing change in the different combinations of companies and supply channels (Figures 5.25 & 5.26; Gustafsson et al 2006). It can be assumed that integrative companies in integrative supply channels are more likely to succeed with their change processes than those in other combinations. This ideal situation is not always present in a retail supply chain, or generally in supply chains formed by the combination of separate companies. This could possibly be the result of an uncoordinated approach to supply chain development.



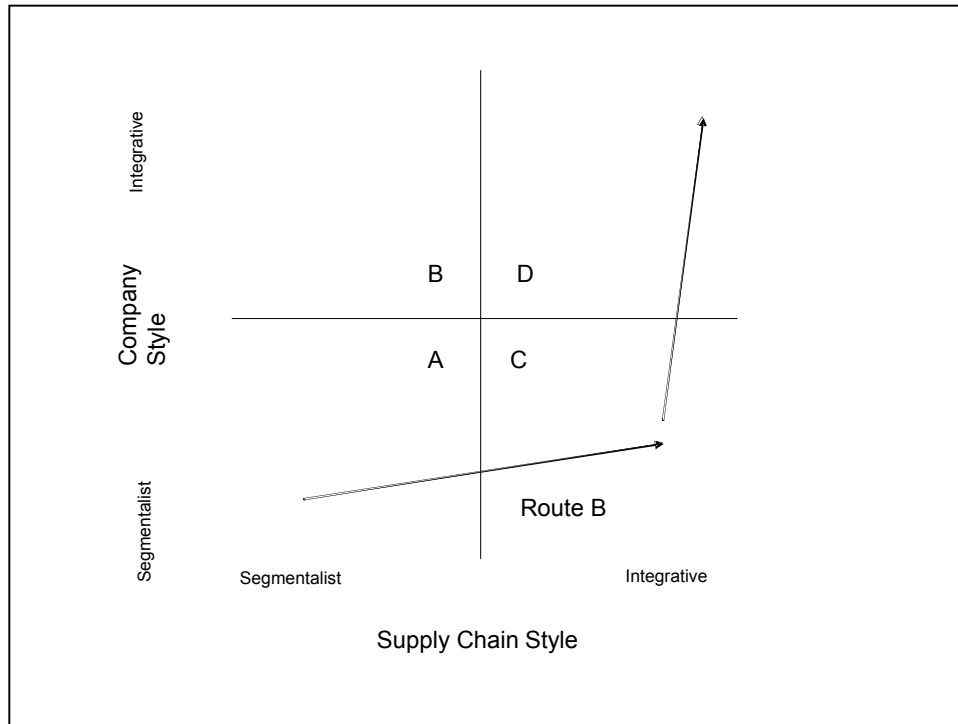


**Figure 5.25 Route A: Change Position in Supply Chains**

What then is the position of an integrative company in a segmentalist-influenced supply channel? How can an integrative company solve the problem of managing change with segmentalist companies in such a segmentalist supply channel? What is the role for that integrative company, which has the vision of improving customer value, product value or system value? If it is a large retailer, the chances of achieving success are better than if it is a small supplier. The large retailer can use their power of influence as being the supplier of customer demand data and information for the other actors in the supply channel. The situation however is not hopeless for the small supplier that is integrative and innovative and has visions for change. Being innovative, this company may identify other companies within the supply channel, who are defined as integrative and innovative. By forming an alliance with such companies, they can gain power and so increase their ability to gain acceptance for such ideas from the slower or less visionary segmentalist companies in the supply channels.

Take another scenario; what about the company with a segmentalist company style that decides to switch to the integrative attitude (Figure 5.25, in the case of Route A). The company has first to overcome its silo conflicts and then generate multi-functional teams to address its supply channel issues. This should result in an improvement of the company's position, enabling it to leverage any collaboration that is developing between other elements of the supply channel. This type of leadership is a model that can be applied when such a company acts as the nodal point or stimulus with colleague companies by encouraging cooperation within the supply channel. In some instances, that company could develop into an emerging channel captain role if it were to hold the balance of power within the channel and so influence the other players to adopt an integrative style in their business relationships.

A fuller channel captain role would be that taken by a company, which not only progresses through this process (Figure 5.25, Route A) but also acts as a catalyst for the supply channel to be transformed from segmentalist to an integrative cooperative whole. Such a company would be creative and identify the channel benefits early in the development process. It would become sufficiently influential to reposition both itself and the other players in the supply channel to realise and gain the benefits from channel cooperation. The whole supply channel would then gain a competitive advantage in the marketplace. Rather than companies competing with companies, it is more a matter of supply channels competing with supply channels; the better team wins. Thus companies think more strategically about their channel choices, e.g. to which channel do they want to belong? This is the context for the role of the *Channel Captain*.



**Figure 5.26 Route B: Changes Position in Supply Chains**

In addition, what might happen to a company with a segmentalist company style? It has a choice: either it can stagnate or it can develop (Figure 5.26). If it continues in its own silo conflict, power imbalance and power struggle, while the other elements in the supply channel are collaborating to gain channel benefits then the company could stagnate and isolate itself from the other players in that supply channel. Such a company could take on a *blocker role*. If so, it can be identified as a blocker by the others in the supply channel. They may choose to deselect it so that it is excluded from their supply channel and from access to their market place.

On the other hand, if a company is willing or even reluctant, it could evolve into a follower role, develop, and so benefit from the strategic reposition that is taking place in the supply channel to gain competitive advantage in the market place. To do this it has to overcome its internal silo conflicts so that it can gain these long-term advantages from the new position the channel has acquired (Figure 5.26, Route B). Note

that route B has two legs so there are two options or two phases of change the company could choose. Similarly, a segmentalist company could elect to change from its current segmentalist supply channel and join an integrative supply channel, and by so doing learn how to become more integrative in its style.

#### 5.4.6 Benchmarks

There are ten key words in the Benchmark shortlist. They are derived from the literature. In some instances, their application in this thesis is an extension of their use based on the learning gained by the author.

No	Characteristics	Author	Description and connections
1	<b>Democracy</b>	Mallen 1963	Autocracy, democracy, anarchy
2	<b>Associative</b>	Dawson and Shaw 1990	Voluntary joint action
3	<b>Collaboration</b>	Spekeman et al 1998	Trust, withheld power, cost reduction, customer benefit
4	<b>Interdependence</b>	Porter 1980	Mutual dependence
5	<b>Non adversarial</b>	Lonsdale et al 2002	Equal sharing of reward
6	<b>Goodwill Trust</b>	Hines and Samuel 2004	Withheld power, large – small
7	<b>Win – win</b>	Glaser and Glaser 1991	N2 negotiating style
8	<b>Dominant Designer</b>	Koehurst et al 1999	Usually producer led sometimes user led; Lee and Billington 1992
9	<b>Specification Buying</b>	Kelley 1954	Retailer specifies product
10	<b>Integrative</b>	Kanter 1984	Companies & supply chains
Categories 1 -3		Democracy; Associative; Collaboration;	
Categories 4-7		Interdependence; Non-Adversarial; Goodwill Trust; Win-Win;	
Categories 8-10		Dominant Designer; Specification Buying; Integrative	

**Table 5.2 Ten Supply Chain Characteristics**

All ten keywords are placed at the end of each case study and those that apply are underlined. The results are analysed in chapter eight (Table 8.1).

## 5.5 Summary

Managing change in supply channels is a challenging task and a demanding role of leadership. This chapter has presented a range of theories and explorations on the nature of supply chains. Chapter six explains the methodology used for this thesis and so prepares the setting for chapter seven, which contains twenty cases. Each case is based on a real event known to the author. These provide information about the location of channel decisions; what these decisions are about. It identifies the tension that results from channel changes. It shows the range of choices that are available to the channel players. The key characteristics that apply are identified for each case. The cases will be analysed in chapter eight in the context of the theories presented in this chapter five. The result should be a clearer understanding of the role of the retailers as channel captains in retail supply chain change.

# Chapter Six

## Methodology

## 6 Methodology

This thesis applies the methodology of Participant Action Research in a Case Study setting to this longitudinal supply chain development study of Tesco. Earlier chapters provided detail of its operational history and the ideas surrounding supply chain and channel captain. This chapter explains the reasons for choosing this methodology and prepares the groundwork to understand the criteria for selecting the twenty case studies. It provides an explanation of the structure for case study research and the process used to reassess theory from those results. Extended consideration is given to participant action research and to the case study research process. There is a shortage within the supply chain literature on these topics. Filling this gap in the literature could, however, create an opportunity to apply these methods with the current generation of professionals in the sector in order to contribute more to supply chain insight and theory from their operational experience.

### 6.1 Action Research

The phrase Participant Action Research is used in this thesis to emphasise which style of Action Research is being used in the methodology. As will become clear from the text, there are different forms of Action Research. Participant Action Research is a methodology for a researcher who is not only present in a case study but is also active in the work of the case study itself. This is quite different from the role in the established social science tradition of researchers acting as external observers, who study what is happening and then interpret the reasons behind the events that occur.

That tradition follows a principle of independence for the researcher, who is not there to change the behaviour of those being observed; in fact any interference by the researcher is regarded as inappropriate. For example, in a workplace environment, a time and motion study would be conducted by an external researcher, who assesses the current processes and productivity. The data from that study would then be analysed and recommendations made about changes to the processes to achieve better performance. This is one example among the many different types of study by external researchers that can add value in understanding and improving organisations.

Participant Action Research is different. It sets out to approach a specified environment using a different style. The researcher is not only present in that environment but is expected to take an active part in influencing the outcome of those circumstances. This is not a passive background role of observation. It is instead an interactive engagement with those persons involved with that environment. The researcher is active in changing the situation and influencing the behaviour of those participating in the event. The active nature of this type of research raises issues about the appropriate role for the researcher to adopt. It is these issues that are addressed in the methodology of participant action research.

A key issue that arises for participant action research is the value set that the researcher brings to the situation. In general, social science research is conducted with a clear awareness of such value sets, even when the researcher is acting as an external observer. It is the value set that provides the basis for the interpretation of the behaviour and the circumstances. Some of these values are known publicly to those involved and other values may be less obvious either to the participants or even the researcher. It is part of the methodology to make these value sets explicit, or to put it



another way, to provide an answer to the question, what are the ideas and objectives that are driving a particular piece of research?

In participant action research methodology, the researcher strives to develop awareness not only of these broader values, ideas and objectives but also the actual values that are revealed by the researcher's style of behaviour during the research. An example might be: a researcher is working with a self-help group in a community to explore their ability to work in a participative manner. If the researcher conducts this research by issuing detailed instructions to those taking part, without any opportunity for them to share their own ideas, then the behaviour of the researcher is not in harmony with the broader intentions of the research project. The researcher is therefore required to practise some self-reflection about the integrity of the practice of their personal value set and those of the intended project.

Participant Action Research methodology is first, about observing what is happening externally, 'out there', and second, what is happening internally through the style of the researcher's behaviour, or what is 'within here'. If the two are in harmony, then there is integrity. If the two are in conflict, then the researcher has a duty to reflect and amend their style of behaviour accordingly. This is not just a matter of behaviour, self-awareness and reflection, the methodology has guidelines for the evidence to support what has taken place in both the external and internal aspects.

The methodology for the evidence is that it must be provided for both the external and the internal dimensions. The external evidence of what happens would be documented publicly, as it is by a researcher acting as an external observer. The participant action researcher has also to provide evidence of their internal self-

awareness about their behaviour and its impact on the other participants. In addition, those who are participating can contribute evidence to the researcher about the impact of the researcher's own behaviour on the other participants in the project.

This has been a summary of the main differences of Participant Action Research Methodology from other social science research. Participant Action Research has been used extensively in Education (McNiff, & Whitehead 2000) and the underlying principles summarised (McNiff & Whitehead 2006). The term self study is used in the education methodology. A summary of the educational application follows, which will provide a base from which to transfer the main components to the supply chain study.

The background to some of this literature relates to the Irish Education System, which needed to make a transition during the 1990s from its established tradition to a modern approach. One route through this transformation was the application of a new role for the teacher. The teacher would experiment on different educational styles with the students and then review the outcomes. The teacher became a teacher – researcher. The results of these experiments were incorporated into education policy. The teacher as a practitioner had evolved into a teacher – researcher, whose conclusions were accepted as a critical contribution to policy development. The teacher was deliberately changing the situation with the students in order to find a way forward to a modern educational approach. The model is best explained in its original context, then it will be possible to adapt the model and apply it to the supply chain case studies.

## 6.2 Action Research in Education

The main literature and thinking that is relevant to this thesis is in the writings of McNiff and Whitehead. These were both involved in the promotion of Action Research for Education. Although the origins of Action Research go back further, these writings from 1990s and 2000s are contemporary with this thesis. The ideas they contain can be modified to apply to the supply chain. This section summarises their approach to and their application of Action Research, in a direction, which was developed for practitioners, such as teachers and principals, in Education. This summary draws heavily from their writings with references at key points. [Note: McNiff & Whitehead 2006 *All you need to know about Action Research*, Sage, London provides a complete guide as indicated by the title. ]

### 6.2.1 Action Research

Action Research is a form of enquiry that enables practitioners, such as teachers, to investigate and evaluate their work. They ask, ‘What am I doing? What do I need to improve? How do I improve?’ Their accounts of their practice show how they are trying to improve their own learning and influence the learning of others. (McNiff & Whitehead 2002). Action research aims to be a disciplined, systematic process. A model action plan would be:

- Take stock of what is going on
- Identify a concern
- Think of a possible way forward
- Try it out
- Monitor the action by gathering data to show what is happening

- Evaluate progress by establishing procedures for making judgements about what is happening.
- Test the validity of accounts of learning
- Modify practice in the light of the evaluation.

This can also be represented as a cycle of the following activities; observe, reflect, act, evaluate, modify and then move in a new direction. This is generally known as the action – reflection cycle.

However, within the action research family, different approaches have emerged. While all action researchers ask questions about influencing the processes of change, different perspectives ask different kinds of questions. Compare this contrasting question posed first by a social scientist: ‘Does management style influence worker productivity?’ and then by an action researcher: ‘How do I improve my management style to encourage productivity?’ To appreciate these differences we need to explore the idea of outsider and insider research.

Traditionally, social scientists tend to stand outside a situation and ask, ‘What are those people over there doing? How do we understand and explain what they are doing?’ This kind of research is often called spectator research or outsider research. Action researchers, however, are insider researchers. They see themselves as part of the situation they are investigating, and ask individually and collectively, ‘Is my/our work going as we would wish? How do we improve it where necessary?’ This difference in approach has its roots in the way social science research evolved.

### **6.2.2 Emergence of Action Research**

This section traces the emergence of action research from its beginnings in the 1930s and 1940s to its current position of world importance. It discusses the historical journey of action research through social science and educational research and places it within the emergence of different paradigms.

New forms of enquiry became established throughout the twentieth century. A shift took place in some quarters, away from a positivist view towards an interpretive view. Positivism held that the world was a ‘thing’, separate from an observer. It was possible to observe and comment on the world in an objective, value – free way. In the same way, knowledge was a ‘thing’, separate from a knower, so it was possible also to comment on knowledge in an objective, value – free way. This view led to a tradition in which the world and its phenomenon could be studied, experimented with and analysed and outcomes could be predicted and controlled by manipulating variables in the form of objects, people and practices.

The emergent interpretive tradition, however, held that people were part of and created their own reality, so it did not make sense to see the world as separate from the people who inhabited it, or practices as separate from the people who were doing them. Rather than study the world and practices as separate phenomena, the focus shifted to understanding how people interacted with one another and their environment. The purpose of such research therefore has shifted from a wish to control the environment and human practices by imposing change from without to a commitment to understanding and improving the environment and human practices by changing them from within.

Action Research, as modified for its application in Education, developed from these origins in social science during the 1930s and 1940s, through its application in the work of Lawrence Stenhouse (1975:165) with the idea of ‘teacher as researcher’. This then continued to develop in the work of Jack Whitehead with the idea of ‘living educational theories’ and in the work of Jean McNiff, with the idea of ‘practitioner as theorist’. There were different paradigms of Technical Rational, Interpretive and Critical Theoretic research (Ernest 1994 cited in McNiff & Whitehead 2006). Action Research developed out of Critical Theory.

*“Action research developed out of critical theory, and went beyond. Critical theory asked, ‘How can this situation be understood in order to change it?’ but aimed only for understanding, not for action. Action research went into action and asked, ‘How can it be changed?’ Some researchers, however, still like to locate action research within a broad framework of critical theory, emphasizing its participatory nature to combat relations of power.”* She goes on to explain. *“What distinguishes a living theory form of action research is that is grounded in the ontological ‘I’ of the researcher, and uses a living logic, that is, researchers organize their thinking in terms of what they are experiencing at the moment”* (McNiff 2006 p41-42).

A living theory is a set of ideas about what we claim to know and how we have come to know. If we can show that what we know (our theory) stands up to public scrutiny, we can claim that our theory has validity (has truth value and is trustworthy). By doing our research, we can claim to have generated our theory of practice, that is, we can say with confidence that we know what we are doing and why we are doing it. We are showing that we are acting in a systematic way and that we are developing a praxis, which is morally committed practice.

The best accounts show the transformations of practice into living theories. The individual practitioner asks, 'What am I doing? How do I understand it in order to improve it? How can I draw on ideas in the literature and incorporate them into my own understanding? How do I transform these ideas into action?' Asking these questions can help practitioners to find practical ways of living in the direction of their values.

New 'movements' such as postmodernism explain how researchers need to regard themselves as influenced by, and influencing, the situation they are investigating. Researchers such as John Law (2004, cited in McNiff & Whitehead 2006:19) explain that the stories people tell about research actually come to inform how they do research in the future. Action research has this self – transforming capacity. This has developed further to focus on self-study.

Self-study places individual researchers at the centre of their own enquiries. Researchers ask, 'What am I doing? How do I describe and explain my actions to you?' The individual 'I' is always seen to exist in company with other individual 'I's'. and each asks, 'How do I hold myself accountable to myself and to you?' The boundaries begin to dissolve, as researchers come to see themselves as sharing meanings, that is, developing a common understanding about what they are doing and why. Boundaries become permeable membranes (Capra 2003, cited in McNiff & Whitehead 2006:11)), where meanings and commitments flow between lives and people perceive themselves not as separate entities, though still unique individuals, but as sharing the same life space as others (Whitehead 2005). The idea of self-study has potential for generating personal, organizational and social change. Such practitioners show the reality of their

self-study by explaining what their values are and showing whether or not they are realizing them.

Personal theories are powerful for sustainable change. Sustainable change happens when people create and implement their own ideas rather than only accept and implement the ideas of others. Existing power relationships between ‘experts’ and ‘trainees’ are demolished and more democratic forms of working developed. While an external researcher may make suggestions about what a practitioner may do, it is for the practitioner to make decisions and stay committed to them.

Although the purpose of all research is to generate new knowledge, action research generates a special kind of knowledge. Action research has always been understood as people taking action to improve their personal and social situations. The potential of action research becomes real when ideas are linked with action. People can give meaning to their lives, because they stop talking about action research and start talking about themselves as action researchers. They communicate their ideas as theories of real-world practice, by explaining what they are doing, why they are doing it and what they hope to achieve. These personal theories are also living theories because they change and develop as people change and develop themselves. The purpose of action research is to generate living theories about how learning has improved practice and is informing new practices.

This section has set out some core issues in action research. It has explained that, unlike social science, action research places the individual ‘I’ at the centre of an enquiry. Different forms of action research have emerged over the years, which prioritize different aspects. Action research can be used to evaluate whether what the



researcher is doing is influencing their own or other people's learning or whether the researcher needs to do something different to ensure that it is. Action research is inappropriate for investigations that aim to draw comparisons or establish cause and effect relationships.

### **6.2.3 Assumptions of Action Research**

Action research is one form of research among many. Different forms of research are used to achieve different goals. Action research is used to find ways of taking action to improve learning with social intent. In order to understand how action research is different from other kinds of research, it is necessary to look at how the underpinning assumptions transform into different kinds of practice. Doing this reveals the main features of action research. All kinds of research, including action research, share common features, which distinguish them as research and not just activity (McNiff et al 2003).

- They identify a research issue
- They identify research aims
- They set out a research design (plan)
- They gather data
- They establish criteria and standards of judgement
- They generate evidence from the data
- They make a claim to knowledge
- They submit the claim to critique
- They explain the significance of the work
- They disseminate the findings
- They link new knowledge with existing knowledge

Where research traditions differ is how they perceive the positioning of the researcher (ontological commitments), the relationship between the knower and what is known (epistemological commitments), the process of generating knowledge (methodological commitments), and the goals of research in terms of how the knowledge will be used (social commitments). It is not only action research that is different from other kinds of research. All research methodologies are different from one another according to these underpinning assumptions. However, self – study action research has made a significant step change from other research methodologies, in that the researcher is placed at the centre of the enquiry, and accepts the responsibility of showing how they account for themselves.

This section has set out some of the main features of action research and its underpinning assumptions. The assumptions are ontological, epistemological, methodological and to do with social purpose.

The main *ontological assumptions* are that action researchers see themselves as trying to live in a way that is consistent with their values. These values are to do with the need to see oneself as in relation with others and how inclusional and relational practice can strengthen those relationships.

The main *epistemological assumptions* are that knowledge is always in process, so it is impossible to create final answers. Processes of knowledge creation involve social processes, so while knowing may be a property of the individual knower, all answers should be regarded as provisional and subject to social critique.

The main *methodological assumptions* are that action research is done by practitioners, who perceive themselves as agents, regardless of their social and institutional contexts. Their methodologies are open – ended and developmental as they ask how they can learn to improve social practices.

The main *assumptions underpinning the social purposes* of action research are that learning can be improved in relation to all social practices and that the way societies operate can be improved if their members reflect on what they are doing and hold themselves responsible for their own thinking and actions.

Action researchers undertake their enquiries for two main purposes, which are intertwined and interdependent: first, to contribute to new practices, which is the *action* focus of action research; second, to contribute to new theory, which is the *research* focus of action research.

The public acknowledgement of practitioners as practice innovators and theory creators is a key factor if practitioners are to be seen as legitimate participants in public debates about what is worth striving for in life and which lives are important. The researcher also has to take on a dual role; as a capable practitioner and as a capable theorist. So, what does it take to turn the practice into a form of theorizing? It takes two things: showing how the researcher learns to improve their practice and showing how the researcher's learning can stand as a contribution to new theory.

While we remain practitioners, our main concern is to improve practice. As soon as we become researchers, our main concern is to generate new ideas, knowledge, and theory. As a practitioner – researcher, our concern is to show how we are

connecting both our educational theorizing and our practice in a process of working to improve our practice. So there is a need to contribute to new theory and to learn how to make that contribution.

#### **6.2.4 Generating Evidence**

The self-study aspect of Participant Action Research requires the researcher to make explicit the researcher's own internal thinking, ideas and values throughout the research project from its inception, during its development and at its conclusion. This section explains how both aspects of generating evidence are progressed in an educational setting. Much of what is described can be applied in the supply chain study that is the core of this thesis. The section includes the feasibility study, the action plan, the types of questions appropriate at the different stages, the selection of that data, which constitutes evidence and finally, the demonstration of its validity and legitimacy.

The project begins with a feasibility study, which identifies some opportunities and any constraints plus an audit of what resources are needed. This should reveal any hidden pitfalls, which need to be known before the researcher commits to the project. Part of this process is learning how to negotiate difficulties and transform them into opportunities. These are questions what help to link the feasibility study to the proposed action plan.

- What is my concern?
- Why am I concerned?
- What experiences can I describe to show I am concerned?
- What can I do about it?
- What will I do about it?

- What kind of data will I gather to show the situation as it unfolds?
- How will I explain my educational influences in learning?
- How will I ensure that any conclusions I come to are reasonably fair and accurate?
- How will I evaluate the validity of the evidence – based account of my learning?
- How will I modify my concerns, ideas and practice in the light of my evaluations?

We now assess realistically whether we can address the questions and any ethical issues about involving others in our research. Before launching into our research we draw up an action plan. It will guide us through the process of asking and answering the question, ‘How do I improve what I am doing?’ This question often arises from a situation where we experience ourselves as a living contradiction when our values are denied in our practice. Whitehead (1989) expresses these ideas as follows:

- I experience a concern when some of my educational values are denied in my practice
- I imagine a solution to the concern
- I act in the direction of the imagined solution
- I evaluate the outcome of the solution
- I modify my practice, plans and ideas in the light of the evaluation

Whatever may be the starting point, this set of ideas can transform into an understanding of what action research involves: (McNiff et al 2003)

- We review our current practice
- Identify an aspect we want to investigate
- Imagine a way forward
- Try it out and
- Take stock of what happens
- We modify what we are doing in the light of what we have found
- We continue working in this new way
- Or we try another option if the new way is not right
- Monitor what we do
- Review and evaluate the modified action
- Evaluate the validity of the account of learning
- Develop new practices in the light of the evaluation

It is important to note again that Action Research involves two interrelated processes. First, we take action in the social world, by doing things differently in relation to the people we are working with. We carry out certain actions and monitor what happens. This can be seen as action in the social world ‘out there’. At the same time, we think about what we are doing as we carry out the actions and reflect on what we are learning. We are learning not only *about* the action, but also *through* the action. This can be seen as action in the mental world ‘in here’. The two sets of ‘out there’ and ‘in here’ actions go on during Action Research and are both intertwined and of equal importance. Most of the action research literature focuses on social action ‘out there’ and not too much on the learning ‘in here’, especially in terms of how learning arises from the action and feeds back into the action. The best action enquiries show the interrelated nature of learning and social action and how one interpenetrates the other.

Claims to knowledge need to be supported by validated evidence, so that the claim does not appear as opinion or supposition. Evidence is generated from data, so this means gathering quality data from which to select those pieces that can stand as evidence. The researcher has to monitor their practice and gather data without wasting time gathering data that is irrelevant. What is required is solely that data, which is relevant to the research question. As already stated, asking action research questions is complex. First, action research questions involve the generic question: 'How do I improve my work?' Second, any improvement happens over time, so the data will be based on those episodes of practice that are selected to show the development of the researcher's practice over that time. Third, practice does not happen. Actions 'just happen'. Practices are always informed and intentional. They are informed by learning and their intent is improvement. So the researcher examines their practice to examine the influence of their learning. What the researcher looks for, therefore, when looking for data, are episodes that show initial contexts, when the researcher did not know something so well, and later episodes when they knew it better, and can show the influence of the researcher's own learning.

Data are merely pieces of information. Out of the data, some is selected as evidence to establish the validity of a claim to knowledge. Evidence is more than illustration, which is used solely to show a point in action without making a value judgement about whether it shows an improvement or an explanation for why it is better. Selecting the data is based on the established criteria and standards of judgement. They are different but related, criteria is a list of items while standards are the level of performance for those items.

Having generated the evidence, it is necessary to show its validity and then seek legitimacy for the account. Validity and legitimacy are different things. Validity refers to establishing the truth value of a claim, its authenticity or trust – worthiness. This is a matter of rigorous methodological procedure. Validating the claim to knowledge means it has to be put into the public arena with an explicit articulation of the procedures to demonstrate its methodological rigour, so that its validity can be tested against other people's critical assessment.

Legitimacy refers to getting the account accepted in the public domain, by getting people to listen to the account and to take the work seriously, in the hope that they may be open to learning from it or trying out something similar for themselves. Legitimacy means being recognized by the two communities; the practitioners and the researchers. The researcher needs to learn how to tell their story. Habermas (1987, cited in McNiff & Whitehead, 2006) states that ideally the researcher should: speak comprehensibly; speak truthfully; speak authentically; speak appropriately. This means the researcher needs to: get passionate; get personal; get clarity; and get on and do it.

### **6.2.5 Summary**

Action Research in Education provides a detailed and proven application of Participant Research, which has been well documented. There is nothing in this style of research that has been documented for supply chain research. It is therefore appropriate and valuable to use this education research methodology as a model to follow for the research of this thesis about developments in the Tesco supply chain.



## 6.3 Supply Chain Application

The Participant Action Research methodology that has been used in these educational research endeavours has a structure that could be applied by researchers in different settings, who are engaged in the direct action of changing an environment with other participants. Supply Chain Change is driven by people and for its success it needs to engage with those persons participating in the chain. The development of the Tesco supply chain created new solutions that were actioned by practitioners, who were immersed in the situation and were continually exploring and discovering new ways forward. There are strong parallels, therefore, between the application in Education and an application in Supply Chain Change. The author was one of those practitioners, as detailed in the Introduction (Chapter One). That direct operational experience is the subject of this thesis, which seeks to reflect on the significance of those developments (Chapters Three & Four) and review them in the light of the literature (Chapters Two & Five). Participant Action Research is therefore an appropriate methodology to adopt for this thesis research.

### 6.3.1 Action Research Principles

The details of the Action Research principles have been explained in sections 6.1 Action Research and 6.2 Action Research in Education. The key elements, only, need to be summarised here to provide a platform and structure for their application to Supply Chain Change. One of those main elements is an involved action-researcher, who is or has been placed and active in improving a situation over a period of time with other participants. A second main element is a Value Set, which expresses the desired direction of that development and against which the researcher can assess the style of their own performance. A third main element is the opportunity to reflect on both the external and internal changes in behaviour that take place during the

evolution of the research project in the action-reflect cycle to try out, review and modify the detail of the project to keep it successfully in the desired direction. A fourth main element is process of Validity of the evidence and Legitimacy of being recognised by the two communities of practitioners and researchers. This may seem a high level summary of the main elements, but the detail is explored fully in the earlier section 6.2 on its application in Education.

### **6.3.2 Application to Supply Chain Change**

The application to Supply Chain Change is constructed through the presence of each of these four main elements in this research. The first main element is an involved action-researcher. This role of action-researcher is performed by the author, who was directly involved in improving the supply chain situation with other participants within Tesco, its suppliers and logistics service providers. The second main element is a Value Set, which expresses the desired direction and style of implementation. This Value Set is detailed fully in Chapter Five, Managing supply Chain Change, culminating in the list, Table 5.2 Benchmarks, of particular qualities desired in supply chain change to achieve Strategic Alignment (Figure 5.2) of the whole chain with the needs of the final consumer. The third main element, the opportunity to reflect on the changes in the evolution, is one of the objectives of this thesis itself. The fourth main element, establishing Validity and Legitimacy, is also an objective of writing this thesis to complement the presentations the author has already conducted with seasoned practitioners in the industry.

## **6.4 Case Study Selection**

In the introduction to this chapter one of the objectives stated was to explain the rationale for the case study selection that follows in Chapter Seven, which is a core

contribution of this thesis. This section elaborates the criteria used for choosing those twenty case studies. It then explores the case study methodology as a qualitative research approach. It concludes with a transition preparing the way for the detailed exposition in Chapter Seven of the twenty topics chosen to provide evidence of the role of the retailer in supply chain change.

The criteria for selecting the case studies develops out of both the practical experience, Chapters Three and Four, and the thinking in the associated literature, Chapters Two and Five. The dominant theme is the Strategic Alignment of the components of the supply chain and the business to the needs of the consumer (Figure 5.2). This is the desired vision, towards which the practitioners aimed in their exploration and evolution of supply chain change. The cases selected are evidence from different situations, of the processes that took place to transform the supply chain from a position where there was an absence of alignment into a result of greater alignment. Each case demonstrates an improvement in the practice through supply chain change. Each case is also performed within the action-reflection cycle. They were not repetitions or reiterations of previous practice, they were genuine innovations, no matter how small that innovation might appear to be. Cumulatively, the series of minor innovations amounted to continuous and significant improvement towards the desired goal of alignment. There are ten characteristics or constructs, Figure 5.2, which are set as standards for assessing each of the case studies. These characteristics all relate to styles of behaviour, which are judged in the literature to assist beneficial supply chain change. These form the Value Set for the research.

The research is a longitudinal study covering events over the years 1977 to 2005. This is a mature timescale during which to evaluate the benefits and effectiveness

of the changes. The author or a member of his team performed the participant aspect of the methodology. The factual accounts of the case studies were documented through contemporary business minutes and notes. The reflective component of the research is documented in this thesis. The ideas, constructs and value set from Figure 5.2 have been brought together in the thesis and used as the basis for establishing the criteria for selecting the case studies as well as their application in the evaluation process itself. The presence of the values is indicated by an underline in each case study, those not underlined are not present. The research methodology was not fully in place when the case studies took place hence some of the reflection is after the event itself, which does not necessarily diminish its validity as the results can be seen to have stood the test of time. A great deal of operational, inspirational, self-reflection and review had been conducted at the time by the author and the participants in the various projects. Some boundaries were placed on the scope of the research and there are limitations on the case studies selected. They do not include examples of failure. They do not include case studies from the point of view of the supplier or logistic service provider. This may be a matter for further research.

Case study methodology may include a qualitative research approach. Cases provide rich data about the research topic. Semi-structured open interviews with key persons provide an interpretation of the reasons for the nature of the events. The research in this thesis retains all the benefits of case study methodology. In addition it introduces the dimension of the action-researcher with its personal account from the experience of taking part in these real events.

### **6.4.1 Building Theories from Case Study Research**

There is good literature on case study methodology, its various forms and bridging the link between theory and the results of the data. This thesis has a dual purpose. The first task is to find examples of the type of behaviour of the role of a retailer as channel captain implementing supply chain change. The second task is to examine the opportunity of building or extending theory from these case studies. Rather than document a wide range of sources, an in depth summary is given from a well recognised case study researcher (Eisenhardt, 1989), which contributes a roadmap of building theories from case studies and positions this into the larger context of social science research. The roadmap synthesises qualitative methods, design of case study research (Yin 1984) and grounded theory building (Glaser & Strauss 1967). It extends work in areas such as a priori specification of constructs, triangulation of multiple investigators, within–case and cross-case analysis and the role of existing literature. This complements and contrasts with the Participant Action Research application in Education given in section 6.2. It clarifies the confusion that can surround the distinctions among qualitative data, inductive logic, and case study research.

The case study is a research strategy, which focuses on understanding the dynamics present within a single setting. They can involve single or multiple cases and can employ an embedded design of multiple levels of analysis within a single study. Case studies combine data collection methods, such as archives, interviews, questionnaires and observations. The evidence may be qualitative, eg words, quantitative, eg numbers or both. They can be used to accomplish various aims: to provide description, test theory, or generate theory. The road map (Eisenstadt, 1989:535) sets out eight phases: getting started, selecting cases, crafting instruments and protocols, entering the field, analyzing data, shaping hypotheses, unfolding literature,

and reaching closure. There are three outputs from following this road map. First, it focuses on theory building from cases. Second, the process includes new ideas, such as a priori specification, flexible instrumentation, multiple investigators, cross-case analysis tactics, and several uses of literature. Third, it adopts a positivist view of research, to develop testable hypotheses and theory, which are generalizable across settings.

The process of building theory from case study research is strikingly iterative, backwards and forwards between steps. It is alive with tension between divergence into new ways of understanding the data and convergence onto a single theoretical framework. The process also involves converging on construct definitions, measures, and a framework for structuring its findings. Finally, the process is intimately tied with empirical evidence. Its three strengths are first, the likelihood of generating novel theory because creative insight often arises from the juxtaposition of contradictory or paradoxical evidence. Second, the emergent theory may be testable with constructs that can be measured and hypotheses that can be proven false. Finally, the resultant theory is likely to be empirically valid because it is consistent with empirical observation. The weakness is that it could become over complex and lack the simplicity of overall perspective. It could result in narrow and idiosyncratic theory because case study theory is a bottom up approach. However, a strong theory-building study yields good theory, which is parsimonious, testable, and logically coherent, and result in new insights.

## 6.5 Summary

This research examines the role of the retailer as channel captain in retail supply chain change. The intention is to identify some insights into the nature of

channel leadership, its style, its characteristics, its presence, its critical success factors and find a way of highlighting key elements that should be visible to the external observer. These key elements could become key indicators of the full presence or absence of channel leadership and help with assessing the various degrees of partial or growing presence of that channel leadership which could be used in emerging economies.

What are the intended outcomes from this research? The author has chosen this multiple micro case study approach in order to illuminate parts of the retail supply channel that would not normally be visible to retail commentators. These case studies are based on the practitioner experience of the author. They reveal the power of the change management dynamics. The important question is how can academics reflect on the insights provided by this series of multiple micro case studies? It is intended that each case study is judged on its own merits, by whatever method of critique others choose to apply. The case studies are presented as documentary accounts of real events that took place. They are neither models nor hypothetical scenarios. They reflect the feedback and dynamics involved. There is an interplay between the broader theoretical and practitioner context and the selected case studies. It is intended that the inside story from the case studies adds a depth and richness to external events.

# Chapter Seven

## Research

### Tesco Case Studies



## 7 Research Tesco Case Studies

The previous chapters have provided an account of the major trends in retailing (chapter two), retail logistics (chapter three), supply channels (chapter four), managing supply chain change (chapter five), and the research methodology (chapter six). This chapter presents selected case studies. They will help the process of investigating the role of retailers as channel captains in retail supply chain change.

The diagrammatic representation (Figure 5.1) demonstrated that the area where the three circles overlap is the retail supply chain, integrated into the retail strategy so that it is aligned with the consumer. For this reason, 'alignment' is the general condition applying to all the cases. It does not need to be included in the individual lists. The conditions that exist where only two circles overlap are only partial alignments. They are limited by not being linked to the third element in the mix. Some cases start from a position of partial alignment. The dynamics in those cases is to bring the three into an aligned strategy. They were selected to illustrate these boundaries of alignment. It is intended that the evidence of the cases will contribute to academic knowledge by extended application of earlier concepts into the core of retail supply chain change.

The objective of research, in general, is to investigate questions that are not immediately obvious and thus reveal some hidden depths of analysis and explanation of a topic. Here, the purpose is to gain insights from the perspective taken from the middle of the value chain, which was the context of the author's operational experience. This set of case studies builds on the author's earlier work; the MBA dissertation on 'Integrated supply chain management, the case of fresh produce in Tesco' (Smith 1992)

and the article ‘The transformation of physical distribution in retailing: the example of Tesco plc’ (Smith and Sparks 1993) and further extension (Gustafsson et al 2006; Smith 1998; Smith and Sparks 2004a, b, c). The focus moves from retail distribution to supplier logistics and the style of channel decisions so that the topic becomes broader to include channel leadership.

These practitioner case contributions will be assessed against concepts derived from the academic analysis of supply chain and buyer – supplier relationships. These have evolved from earlier marketing origins to modern supply chain analysis. Ten characteristics emerged, each represented as a keyword (Table 5.2), whose context, derivation and meaning were examined in chapter six, managing supply chain change. These characteristics represent an idealised good practice benchmark. The list of ten keywords is placed at the end of each case study. Those characteristics that are reflected in the case are underlined. This will permit a more thorough analysis in chapter eight between the practical cases and the academic concepts. The use of these cases will contribute to extending the application of these key characteristics to the concept of retailers as channel captains in retail supply chain change. This analysis will inform the conclusion in chapter nine on the contribution to academic and practitioner knowledge.

The cases have been selected in a variety of ways. Some involve situations with which the author was intimately involved. These in particular build on retail logistics, (chapter three) and supply channels, (chapter four). Others are drawn from the experience of colleagues to whom the author had access at the time or later through personal interviews. These case studies are intended to illustrate different aspects of managing change and finding solutions in the broad area of shaping the retail supply

channel. There is no intention of suggesting that any of these cases are ‘right’ or ‘wrong’; rather the aim is to explore aspects of change implementation and business practice. They are not intended to be exhaustive case studies but rather are indicative of the issues and the solutions that may be found in the real world.

No	Page start	Cases	Categories
A	204	7.1 - 7.6	Specific Products
B	232	7.7 - 7.10	Broader Developments
C	248	7.11 - 7.14	Capacity & Control
D	267	7.15 - 7.18	Technical & Design
E	283	7.19 - 7.20	International
Codes for the level of research contact by author:			
<b>L1:</b>	Direct personal experience;		
<b>L2:</b>	Close personal contact;		
<b>L3:</b>	Other contacts author had access to at the time;		
<b>L4:</b>	Access to key persons through interviews		

**Table 7.1 Case Studies: Categories, Research Contact.**

Table 7.1 lists the five categories into which the case studies are grouped in order to provide a way of linking the sets. The first category provides detail on supply channel change relating to specific products. The second then looks at broader developments or trends in retail supply channel change. The third deals with issues of managing capacity and control. The fourth relates to some technical aspects such as the design of vehicle trailers and plastic trays. The fifth and final category presents two international examples from outside the UK. This final set illustrates the different levels of development that can exist with their related challenges that have to be understood and dealt with. There have been varying degrees of author involvement in these case studies, identified by the letters L1, L2, L3, L4. The first level, (L1) is from direct personal experience; the second (L2) is from close personal contact; the third (L3) is from the experiences of other contacts which whom the author had access at the time and finally, the fourth (L4) is from access to key persons through interviews.

<b>Case Studies: Structure of the account and review of the event</b>	
<b>The account of the event</b>	
	Summary
	The background and context
	The description of the event
	The result or outcome of the event
<b>The review of the event from a channel perspective</b>	
	The author's experience of the event
	A critique of the event on the scale of leader to follower
	Revealing hidden evidence more explicitly
	Identifying where the decisions were located
	Clarifying what the decisions were about
	Identifying the tensions that existed
	Showing the range of choices
Supply Chain Characteristics: Ten key words; those that apply are underlined	

**Table 7.2 Case Studies: Structure, Description, Analysis.**

The case studies, whose purpose is to demonstrate channel leadership, are structured in two sections (Table 7.2). The first section is an account of the event: starting with a summary, the background and context, then providing a description of the event itself and finally the result or outcome. The second stage is a review from a channel perspective: the author's experience of the event, a critique of the event on a scale of leader or follower, then revealing any hidden evidence more explicitly, in order to identify where the decisions were located, clarify what the decisions were about, identify the tensions that existed and show the range of choices available. The broader conclusions from the case studies will then be made in chapter eight. Now it is time to turn to the detail of the case studies themselves.

The full list of these twenty Tesco case studies (Table 7.3) provides a complete picture of the range of categories and the specific topics studies. The series begins with specific products to provide detail, which supports the broader developments and other category case studies.

Ref	Category A: SPECIFIC PRODUCTS	
7.1	L1	<b>Potato</b> supply channel reorganisation: 1990 Benefits of shaping the supply profile collaboratively
7.2	L2	<b>Banana</b> centralisation: 1992 Controlled implementation and coordinated development
7.3	L1	<b>St Peter's Fish</b> : 1994 Small niche supplier integrated into large supermarket supply chain
7.4	L1	Implementing centrally prepared <b>meat &amp; poultry</b> strategy: 1994 Long term partnership approach to adding value by creating a step change for retail, logistics and the supply channel
7.5	L1	<b>Strawberry</b> supply & peak demand for Wimbledon Tennis: 1996 Retailer shapes the solution by collaborating with the other partners
7.6	L3	<b>Iceberg lettuce</b> supply channel from Spain to UK retailers: 2002 The Iceberg lettuce journey from Spain to UK. Retail control their producers to demanding standards of production and delivery
<b>Category B: BROADER DEVELOPMENTS</b>		
7.7	L1	<b>Chilled</b> product supply 'At the right freshness': 1985 to 2005 Retail leadership in food safety, longer shelf life for consumer, dramatic growth in sales, still a benchmark for others to follow
7.8	L1	<b>Produce</b> supplier logistics and primary distribution: 1990 – 2005 Shaping supply networks for service, efficiency and competitive advantage. Multifunctional collaboration with suppliers and logistics service providers.
7.9	L1	<b>Frozen</b> from bulk storage to national network: 1986 – 2003 Transforming the structure and pace of the frozen supply channel from intervention to rapid retail distribution
7.10	L1	<b>Sustainable distribution</b> : an integrated transport approach: 1997 The Tesco supplier collection and Department for Transport best practice programme, an example of sustainable distribution.
<b>Category C: CAPACITY &amp; CONTROL</b>		
7.11	L2	<b>Warehouse Productivity</b> , Just in Time capability: 1980's – 2000's The innovative techniques to increase productivity in distribution to service retail as they improved their stock systems in store.
7.12	L1	Shaping <b>supply networks</b> pre-composite: 1980's Logical evolution, preparing way for composite
7.13	L1	<b>Composite Capacity</b> : 1989 – 2004 Ground breaking initiative, zero stock, pull demand and since then continuous growth that is hidden from external view
7.14	L1	Role of <b>Logistic Service Providers</b> : 1980's to 2005 The partnership with logistics service providers enabled retailers to, harness their logistics initiative and achieve scale quickly. The retailer provided the thought leadership but with a style that was transformational rather than transactional
<b>Category D TECHNICAL &amp; DESIGN</b>		
7.15	L1	<b>Open book</b> accounting pre and post composite: 1986-90 Implementing visibility of costs for greater flexibility in service. This is a basic building block of professional logistics, which is now the norm
7.16	L2	<b>Composite</b> three temperature compartment <b>trailer</b> : 1989 Industry innovation with external specialist Thermoking, led by retail.
7.17	L1	Second generation <b>plastic tray</b> : 1990s Industry leadership from Tesco Board pushing design boundaries
7.18	L2	<b>Bonded</b> Distribution and Customs & Excise: 1988 Retail leadership in initiating assembly direct for Bond.
<b>Category E: INTERNATIONAL</b>		
7.19	L4	<b>Thailand</b> suppliers of fresh product: 2002 One example of the transfer of supply and logistics skills from UK retail to Eastern Europe and Asia, shaping local temperature controlled supply chains to higher standards
7.20	L1	<b>South Africa</b> fresh product and air freight: 2003 An example of retailers' global reach and sourcing using air freight with good chill chain disciplines to create value for the consumer

**Table 7.3 Twenty Tesco Case Studies**

## Case Studies Category A: Specific Products.

The first group is a series of descriptions of the transformation of the retail supply channel for six different individual products (Table 7.4). It provides an opportunity to look in detail at some specific examples, which makes it easier to understand the dynamics involved. This is a short list of examples. It is intended to be indicative rather than exhaustive. Although the author had a direct involvement in some of the examples, there were many other instances with other products that were implemented by other colleagues across several functions.

These products relate to composite distribution. There was a full range of supply channels for the many product lines sold in the retail stores, which were grouped together and supplied to the stores through different sets of distribution centres. The examples here were selected to provide a flavour of the style in which the retailer implemented many of its channel reorganisations during that period.

Ref	Category A: SPECIFIC PRODUCTS	
7.1	L1	<b>Potato</b> supply channel reorganisation: 1990 Benefits of shaping the supply profile collaboratively
7.2	L2	<b>Banana</b> centralisation: 1992 Controlled implementation and coordinated development
7.3	L1	<b>St Peter's Fish:</b> 1994 Small niche supplier integrated into large supermarket supply chain
7.4	L1	Implementing centrally prepared <b>meat &amp; poultry</b> strategy: 1994 Long term partnership approach to adding value by creating a step change for retail, logistics and the supply channel
7.5	L1	<b>Strawberry</b> supply & peak demand for Wimbledon Tennis: 1996 Retailer shapes the solution by collaborating with the other partners
7.6	L3	<b>Iceberg lettuce</b> supply channel from Spain to UK retailers: 2002 The Iceberg lettuce journey from Spain to UK. Retail control their producers to demanding standards of production and delivery

**Table 7.4 Case Studies Category A: Specific Products**

## 7.1 Potato Supply: 1990

Potato supply channel reorganisation

*An account of the event*

*Summary*

The supply channel for potatoes was reorganised for composite distribution and is an early example of the benefits of shaping the supply profile collaboratively.

*The background and context*

Tesco implemented composite distribution during 1989. The original supply delivery timetables from the suppliers into the composite distribution centres needed to be reorganised. The main purpose was to smooth out the hourly arrival of product to reduce the severe peak volumes that were occurring after six pm.

*The description of the event*

Potatoes as a product group were identified as a suitable product to be rescheduled to arrive from the suppliers earlier in the day into the composite distribution centres. The decision was made jointly by Quality Assurance, the Commercial Buyers, Stock Control and Distribution Operations. This decision was reached after certain investigations had been conducted. There were several factors that were uncovered in the process of the author's investigations at the time. A key issue was that the confirmed order from Tesco Head Office was arriving at the supplier at 17:00, just as the suppliers' day shift workers, who had started at 07:00, were finishing. As the suppliers were not set up with an evening or a night shift, no packing was done until the next day shift came back in the next morning at 07:00. The product was lying idle through the night, twelve hours of elapsed time. The author approached the top six potato suppliers with the buyer to discuss a variety of options with Stock Management, Technical Service and Logistics. After these discussions the potato suppliers agreed to

introduce revised shift patterns for the September main crop. The result of the author's initiative was an agreement from the suppliers to adhere to an earlier delivery window of 06:00 to 15:00, which was a major improvement over the previous delivery window of 16:00 to 20:00. Potatoes were delivered either in heavy bags or in specially designed roll containers. If they were in bags the labour of making up the orders for the stores was strenuous. If they were in the special roll containers, then they took up a great deal of floor space. This rescheduling applied to main season English potatoes. New potatoes were treated differently because of their harvesting times, and it was agreed that they would be delivered after six pm.

The implementation process involved several parties. Commercial buying had to agree with the suppliers, which companies were going to supply which composite distribution centres and agree the apportioning of the volume splits between suppliers. Stock Control organised the actual delivery times and distribution operations rescheduled the warehouse labour resource to meet the earlier timings. Discussions were held with the potato suppliers and their transport operations about more efficient use of their vehicles. Distribution Operations spoke to retail to agree earlier delivery times from the composite distribution centre into the retail stores. Retail had to ensure that their staff were available to receive the potato delivery and that there was enough space for the special roll cages.

#### *The result or outcome of the event*

The reorganisation of the potato supply channel added value to all parties. The suppliers and their transport operators rescheduled the use of their vehicles more efficiently. Composite distribution received the potatoes earlier in the day, when they had enough space to handle the special potato roll cages without causing congestion in



the distribution centre. Retail received potatoes on an earlier delivery, which they were then able to put out on the shop floor.

*Review of event from a channel perspective*

*Author experience of the event*

The author was fully involved in the potato supplier debate and reorganisation, as described. He was a senior executive in charge of composite distribution operations as well as working on the produce supplier delivery profile. The author can recall that the experience at the time was a sense of achievement in securing an improvement for all the functions involved.

*Critique of event on scale of leader – follower*

This is an example of the retailer acting as channel captain and leading this change in a manner, which harnessed the commitment of the suppliers and their transport operations. It was achieved in a multi-functional team working style.

*Revealing hidden evidence more explicitly*

The joint meeting by the commercial buyer, the author and the six major suppliers was a step change in thinking about the issues that affected this particular supply channel. The retailer wanted shorter lead times on orders, but in the period immediate after composite implementation, which had been in 1989; it took a while before the implications came to light. The commercial buyer was proactive and knew his suppliers well. He had previously organised them into clusters to serve their local composites. He understood the issues and willingly set up the meetings with the six major potato suppliers to discuss the reorganisation of their work shift patterns and the changes to their deliver times into composite.

*Where were the decisions located?*

The decisions were located with the various buying, quality assurance, stock control and distribution operations functions within Tesco, in consultation with the potato suppliers and their transport operations.

*What were the decisions about?*

The decisions were first about the timing of the deliveries in the composite operations; the rescheduling of staff resources at the supplier and at composite distribution; the utilisation of transport and the financial impact.

*Identify the tensions*

The tensions were between the various internal functions within Tesco, commercial, stock management, technical services, and distribution operations. There were also tensions with the suppliers, their work shift patterns and their transport operations. However, these tensions were handled in a constructive manner. The end result was a willing commitment by all parties to the earlier delivery window.

*Show the range of choices*

The choices was to leave the delivery pattern of potatoes unchanged or to approach all the parties in the right manner to seek creative, collaborative solutions.

**Characteristic Keywords** (Relevant keywords underlined )

Democracy; Associative; Collaboration; Interdependence; Non-Adversarial; Goodwill Trust; Win-Win; Dominant Designer; Specification Buying; Integrative

## 7.2 Banana Supply: 1992

Banana centralisation.

*An account of the event*

*Summary*

Tesco made a decision to centralise the distribution of bananas through composite rather than going direct to the retail stores. Bananas are the biggest selling line in retail and required a tightly controlled implementation programme. Once centralised there was a further supply channel development.

*The background and context*

Bananas are the most popular selling line. They are the largest volume quantities. Prior to composite distribution, the banana suppliers made direct deliveries to the retail stores, who would order product as they needed it over the telephone. The central buying policy for produce was gradually to change the supply channel from direct delivery into the retail store and reorganise the suppliers to centralise and deliver into composite distribution centres. One of the motivations for this centralisation was that Quality Assurance standards could be applied more consistently and so the consumer would receive a better quality product.

However, bananas are a sensitive product. They come over to the UK in boats in a dormant state, during which their colour is green. They need the exactly correct temperature regime of 14.6 degrees Celsius for the ripening process. The ripening of bananas is triggered by the supplier using ethylene. The timing of the ripening process has to be calculated accurately so that the bananas are in the desired state of ripeness by the time they arrive at the retail store for the consumer. Consumers, however, have their own views about the degree of ripeness they prefer. Nonetheless the agreed colour standard by the retailer was that the bananas should yellow all over

with only a hint of green at the ends. Equally they must not be over ripe with brown patches. All these aspects of bananas were under the control of Technical Services and Quality Assurance. The planning detail was complex and difficult. Composite distribution had to create a special chamber for bananas so that they would continue the ripening process and not be exposed to cold temperatures. However despite these difficulties the bananas were centralised successfully and the retail volumes soared.

*The description of the event*

The supplier would first trigger the ripening process and then select and pack the bananas in boxes and deliver them into composite distribution. Some stores would take whole roll cages of bananas. However, there were some difficulties with the availability, the quality of the product and the delivery times from suppliers. In a similar process as described earlier with the potato suppliers, there were multi-functional collaborative discussions between the various Tesco functions and the suppliers. One idea in particular was discussed at some length. This was about the allocation of volumes by suppliers to the different composite distribution centres nationally. The traditional commercial buying practice had been to spread commercial risk by giving each supplier a portion of banana volume to deliver to each of composite distribution centres nationally. This involved each supplier arranging transport to each composite.

During the course of the discussions a proposal was put forward which would radically change existing practice. It was a bold idea and it had its risks, but it also had benefits. The proposal was to re-align the volume proportions. The suggestion was that each supplier retain their portion of the volume but instead of delivering it to all the composites up and down the country, they deliver it only to their nearest

composite distribution centre. Despite it being a step change in shaping the supply channel for bananas, the parties worked through the risks and benefits involved. The outcome was an agreement to the principle. The contingency would be that each supplier would act as a standby or back supplier to one other composite to help out should the primary supplier for that composite be unable to fulfil the order quantity or quality for whatever reason.

*The result or outcome of the event*

The outcome of this event was a rejuvenated banana supply channel, delivering a high quality product with improved transport efficiency due to the shorter distances that needed to be travelled. The consequent growth in retail banana volumes has been impressive. There have since been dramatic developments in the retail presentation of bananas that promote one-touch replenishment in store using a roll-in display unit (Gustafsson et al 2006)

*Review of event from a channel perspective*

*Author experience of the event*

The author had direct experience of these developments although on this occasion, not direct involvement in the reshaping of the supply channel. The author recalls clearly the excitement at the results of the step change to designating a main supplier to each of the composite distribution centres.

*Critique of event on scale of leader – follower*

This is an example of the retailer acting as channel captain, firstly in reshaping the supply channel from direct delivery to store into a centralised distribution operation. Secondly, the subsequent reorganisation of the supply channel resulted in

improved quality and transport efficiencies. Thirdly, the later development in the retail roll in cage as part of the 'flow' and 'one-touch' replenishment supply chain strategy. The style of conducting these developments is that of high quality collaboration and strategic business partnerships.

*Revealing hidden evidence more explicitly*

The impact of this step change in thinking was significant. There developed a close identity between the primary supplier and their designated composite and more importantly, the supplier's work team took a great deal of pride in the quality of the work they were doing and the product they were supplying. Why was this? The reason was that there was now a strong bond of dependency between the two, which arose out of the higher level of accountability that the retailer had bestowed on the supplier. In the past, quality did not really matter that much, because the suppliers volume percentage was small and other suppliers were also delivering in. Now the primary supplier was the only supplier. This result was totally unexpected and contrary to expectations.

*Where were the decisions located?*

The decisions were located in commercial buying, technical services, stock management and distribution operations with the suppliers and their operations and transport teams.

*What were the decisions about?*

The decisions were about the accountability for quality supply from the primary supplier to the designated distribution centre as well as the allocation of volumes by commercial and the gains in transport efficiency.

*Identify the tensions*

In the first strategic decision to switch away from direct delivery to the retail store, there were tensions with the retail store management over their autonomy and control. The tensions were between the various internal departments and also with the supplier about the variability in performance of quality, availability of supply and the timing of the deliveries into the composite distribution operation.

*Show the range of choices*

Clearly the first decision to centralise was part of a much stronger policy that the retailer had been implementing for several years. The product could have been left to continue direct delivery to store. The other option in place of the choices on the allocation of volumes and designating a primary supplier to a particular composite, was to leave the structure and organisation alone.

**Characteristic Keywords** (Relevant keywords underlined)

Democracy; Associative; Collaboration; Interdependence; Non-Adversarial; Goodwill Trust; Win-Win; Dominant Designer; Specification Buying; Integrative

**7.3 St Peter's Fish: 1994**

St Peter's Fish product launch: 1994

*An account of the event**Summary*

A small niche product supplier and a giant supermarket work jointly to provide the supplier with supply chain and logistics support. St Peter's Fish is a speciality, which will extend the choice and variety on the Tesco Fresh Fish counter.

### *The background and context*

In the search for niche quality products, the buyer met a producer who could supply St Peter's Fish. This would add quality and variety to the fresh fish counter display in the retail store. It was an opportunity for the buyer to help a small supplier introduce St Peter's Fish into Tesco stores. There are the normal considerations on quality, technical specification, price, promotion, product availability and choosing a launch date. The only issues left to resolve were the supply chain logistics arrangements.

### *The description of the event*

This niche supplier required considerable help to organise the supply chain and logistics in time for the intended launch date. The supplier was in an isolated geographical location in the Midlands, with a small volume and was not in a position to negotiate a good price or service from a transport company; his expertise is St Peter's Fish. It would take all his time and energy to prepare the resources to ensure the availability for the launch date and planned sales volumes. The buyer took the responsibility of helping this supplier to get his product to the marketplace. He contacted a member of the primary distribution team. This team provided the expertise to facilitate the supply chain and logistics arrangements at an economical price, based on the Tesco scale of business.

The primary distribution team member visited the St Peter's Fish supplier, met with the Tesco designated temperature controlled logistics service provider for that region and agreed the details of the collections and negotiated the price for the service. It was a fast, efficient, collaborative service to help the supplier get started with Tesco. The first stage was to sort out the order communication process, then agree the



collection service times with the supplier and the logistics service provider. Then St Peter's Fish would be integrated into the national zero degree temperature controlled network service that delivered daily to each of the composite distribution centres. These plans had to match the agreed launch date and roll out programme that was based on the product availability programme.

*The result or outcome of the event*

St Peter's Fish was successfully launched on schedule and achieved good sales growth. There were information leaflets on the fish counters. The consumer had something new to buy. The buyer and the supplier were both satisfied with the cost of the supply chain and logistics service.

*Review of event from a channel perspective*

*Author experience of the event*

This event occurred in the early days of primary distribution in 1994. The team member was an experienced logistics operator from composite distribution. He knew the logistics service providers designated by Tesco to provide the primary distribution service.

*Critique of event on scale of leader – follower*

The retail buyer provided this small specialist supplier with help and support to get St Peter's Fish into Tesco stores. It was a collaborative partnership. The buyer did not take an opportunistic approach to the negotiations. The buyer took responsibility for the success of the supplier's primary distribution service. It is an example of the role of a retailer acting as channel captain in retail supply chain change.

*Revealing hidden evidence more explicitly*

The separate identification of the logistics cost provided a clearer base for the commercial negotiation that would cover the small supplier's cost of production. Although the cost of the delivery was included in the product price, it was identified separately in the calculation. This permitted the buyer to focus on the cost of production with the small niche supplier and make sure that he could remain in business for the long term.

*Where were the decisions located?*

The decisions about accepting the product, St Peter's Fish, the price and launch programme were located with the retail buyer in collaboration with the supplier and the technical services department. The supplier had to make the decisions about the rate of availability of the fish to supply the launch programme. The primary distribution team member facilitated the decisions with the supplier and the logistics service provider about the collection arrangements to get the fish into the composite distribution network. The consumer had to make the decision whether to try this new St Peter's Fish, with the support of the information leaflets and the advice from the fresh fish counter assistant.

*What were the decisions about?*

The decisions were about the risks involved in launching St Peter's Fish into the Tesco fresh fish counter product range. Several factors were unknown; the choice of the consumer relating to the price and volume; how to get the product physically to market; selecting a realistic launch date.

*Identify the tensions*

The tension arises in relation to the decision by the retailer about the manner of conducting negotiations with small niche quality suppliers.

*Show the range of choices*

There is a choice about the style of negotiation. Should the relationship be nurtured for the long term or just exploited for the short term. The choice to nurture the relationship so that it was viable for the long term was an important signal and symbol of the Tesco way of dealing with suppliers.

**Characteristic Keywords** (Relevant keywords underlined)

Democracy; Associative; Collaboration; Interdependence; Non-Adversarial; Goodwill Trust; Win-Win; Dominant Designer; Specification Buying; Integrative

**7.4 Fresh Meat & Poultry: 1994**

Implementing a centrally prepared fresh meat & poultry strategy: 1994

*An account of the event**Summary*

The retailer made a radical change to the retailing of fresh meat and poultry by implementing a system of centralised production. This involved a long term partnership approach with supplies. It created a step change for retail, logistics and the supply channel.

*The background and context*

Traditionally, retail stores had fresh meat counters staffed by in house butchers. In the early 1980's, the fresh meat industry moved away from delivering whole or half carcasses of meat being to retail stores. The industry had implemented a

system of primal meat cuts, which were large segments of meat. From these primal meat segments the butchers in store would prepare fresh meat cuts for the consumers. In the early 1990's retail implemented another step change through a system of centralised production for consumer prepared fresh meat. There would be no butchers in the stores. This centrally prepared meat was delivered through the composite distribution network to the retail stores. The consumers would purchase the products from the fresh meat chill cabinets. A similar system was implemented for poultry.

Fresh meat and fresh poultry are sensitive products with a high risk to food safety. There are exacting standards for the maintenance of a continuous temperature controlled supply chain from factory to store. The temperature regime had to be zero degrees Celsius, plus or minus one degree. Consumer prepared packs have thinner portions of fresh meat than large primal cuts. Any deviation from the strict temperature parameters would have an instantly detrimental impact on the product. These stringent conditions, required confidence in the disciplines at production, physical distribution, transport and warehousing and retail.

#### *The description of the event*

The system was set up at several production units around the country. This case study is from the production unit in the South West of England. The impact was felt along the full length of the supply channel: the producers, the suppliers' transport, the composite handling and assembly systems; the delivery to the retail store and the store operation itself. The company made this decision at Board level with the approval of Retail and Commercial. The supporting operations were distribution, stock management, and technical quality services. It was a major change, justified by an approved cost – benefit business case. This case study covers one aspect of the total

change programme. It describes the supply channel from despatch at the production unit through to the delivery into composite distribution and the assembly of the store order. The implementation of the production facility processes and the retail operational changes are not included in this description.

At the production facility the retail packs were prepared by product type, placed in plastic trays on pallets that were then moved to the despatch area to be loaded into temperature controlled vehicles for the different composite distribution centres. On arrival at the composite distribution centre, the trays were sorted by product type, checked in and then assembled into retail store order quantities ready for despatch to the store. This was a big change from the previous system with large primal meat cuts. These larger, heavier primal packs required fewer but larger plastic trays. The number of product lines was smaller. The dramatic change was in the physical volume of trays that now had to be transported from the production facility to the composite distribution centres and onwards to the retail stores. A greater physical volume resulted in more work assembling the store order in the composite distribution centre. The greater physical volume also resulted in a greater number of vehicle trips from composite distribution into retail and from the supplier into the composite distribution centre. It is to this latter issue that this case study now turns.

The supplier's transport operation now had to complete a larger number of journeys. This was part of the cost of the production operation, all of which fell within the commercial buyer's budget. Compared to the more compact and heavier unit sizes used in the previous primal packs, there was an increase in the proportion of cost spent on supplier transport. As the production facility was totally dedicated to the Tesco retail supply operation, the commercial buyer and the supplier had agreed to an 'open – book'

accounting arrangement. Here the buyer could examine all the costs, including transport and if justified, would agree to pay the supplier. Clearly both the supplier and the buyer were interested in reducing the total cost of transport from the production unit to the composite distribution centres. The author was invited by them to find a way forward. With their agreement, a selection process was implemented, inviting transport operators from around the country to tender for the different routes to the individual composite distribution centres. Appointing different transport operators to different routes reduced the total transport cost. The commercial director approved this.

*The result or outcome of the event*

The result was the successful implementation of the new strategy for supply fresh meat in centrally prepared consumer packs. As an additional point, through the collaboration with the supplier and the buyer, a lower total transport cost was achieved from the production facility to the different composite distribution centres

*Review of event from a channel perspective*

*Author experience of the event*

The author was directly involved with the supplier and the buyer in the transport review for the inbound movement of the product from the production unit to the composite distribution centres. At the time moving to a centrally prepared meat policy was an adventurous development for the company.

*Critique of event on scale of leader – follower*

This is another clear example of the retailer making a strategic policy change by bringing together the skills of the supplier and harnessing the energies of the

different functions within the company to implement the respective segments of the change.

*Revealing hidden evidence more explicitly*

From a logistics perspective this was the first time there had been such an open and collaborative involvement in reviewing the supplier's transport arrangements. It was also an indication of the increased proportion that transport costs contributed to the total costs of running the production facility.

*Where were the decisions located?*

The main decision was located at the retailer Main Board level. There were many other decisions that both lead up to the main decision and also the result of that decision. These other decisions were located in retail store operations, the suppliers who were affected and involved, the commercial buying function together with Technical Quality Assurance, stock management and composite distribution operations.

*What were the decisions about?*

In terms of the supply channel the decisions were about the location of the production facility, the organisation of the suppliers' transport; the goods in receipt and store assembly process in the composite distribution centres; the order data collection and lay off processes via head office, the temperature control and monitoring procedures.

*Identify the tensions*

The tensions existed throughout the parts of the company affected by this major change in strategy. Retail store operations and their butchers, the suppliers

affected the commercial function that needed the other functions to perform for the planned change to be implemented smoothly.

*Show the range of choices*

One, the big decision. Two, leave things as they had been with the butcher. On the supplementary decisions, especially about the supply channel, the supplier could have been left to his own solutions to reduce the total cost of transport.

**Characteristic Keywords** (Relevant keywords underlined)

Democracy; Associative; Collaboration; Interdependence; Non-Adversarial; Goodwill Trust; Win-Win; Dominant Designer; Specification Buying; Integrative

## 7.5 Strawberry Supply: 1996

Strawberry supply and peak demand during Wimbledon tennis: 1996

*An account of the event*

*Summary*

It has not always been easy to supply British strawberries during the height of demand during the season, which coincides with the Wimbledon Tennis Championships. In the case study the retailer reshapes a successful solution by collaborating with the other partners.

*The background and context*

British strawberries are in large demand during their short season, which coincides with the Wimbledon Tennis Championships. But strawberries are also fragile and subject to many different problems that have caused severe shortages in the past. There is competition among the retailers and wholesalers to obtain their full quantity of British strawberries. It appeared to be a difficult problem to resolve.



*The description of the event*

The author was approached by the commercial buyer to provide some help in resolving the supply problems anticipated for the coming season and Wimbledon Tennis Championships. A small team were called together from various functions in head office, commercial, technical, stock management, along with the suppliers and their transport operators and composite operations. The commercial buyer and technologist set the scene. Everyone understood the problems only too well, but they were willing and keen to find a successful solution. Each representative provided instances of failure of supply that affected their part of the supply channel operation. Invariably, they were dependent on someone else, which limited their ability to perform as they might wish. Once all these issues were out on the table, a major transformation took place. Each representative began to think about how they could adapt or change their part of the supply channel operation to assist the other links in the chain.

Here are some of the details from that list. First, mould on strawberries; the suppliers know several days in advance that mould is developing. They agreed to inform technical services immediately so that alternative sources of supply can be notified in advance. Second, Head Office order lay off amendments were made at 17:00. This delayed the final preparation of the strawberry quantity, which in turn delayed the departure of the suppliers' transport. The Head Office representative agreed to set a much earlier deadline for order lay off amendments and to inform the retail stores the reason for the change in deadline. The suppliers' transport operators said they were willing to commit to the required collection times from the strawberry suppliers, but the suppliers were quite often not ready with their full quantity, especially at the peak of the season or the peak day of the week. The suppliers agreed, that with the

much earlier deadline for order amendments from Head Office that they would commit to have the full quantity of product ready for the required collection time. Composite operations stated that the suppliers' transport was arriving too late in the evening and they did not have enough time to assemble the store orders, especially for those stores receiving early deliveries. However, once the suppliers' transport operators agreed to commit themselves to the required collection times, composite operations confirmed that they could assemble the store orders in time. All these action points were agreed and implemented. That season was a phenomenal success with higher volumes of retail sales of strawberries than ever before.

*The result or outcome of the event*

The outcome of this short but effective meeting was a transformation in the organisation, effectiveness and efficiency of the strawberry supply channel that delivered resounding results for retail consumers.

*Review of event from a channel perspective*

*Author experience of the event*

At the time, the author was Head of Primary Distribution at Tesco. The account of the event conveys the transformation in attitude that was taking place between the different functions and their representatives.

*Critique of event on scale of leader – follower*

The retailer acted as channel captain in the best spirit of collaboration, engagement and listening to issues and proposals from all the parties represented.

*Revealing hidden evidence more explicitly*

That event was an almost magical occasion for the author to be connected with. Tesco functions and the suppliers dealt with the detail of the operational and order process links in an open and positive manner. It was an example of anticipation and proactive planning to overcome adversity and achieve great results. To savour that atmosphere and think back to earlier attitudes towards the supply channel operators was a revelation. That earlier attitude would have been a rather hands-off attitude from retail, with a comment along the lines: “that is your problem to sort out”. Now the retailer acted as part of the solution. That transformed the relationship between the representatives.

*Where were the decisions located?*

The decisions were located in that multi – functional group, who had been given the autonomy to make effective decisions for the good of the business as a whole.

*What were the decisions about?*

The details of the decisions have been described. Here the decision was about being willing to collaborate, to listen, to be proactive, to commit and to be accountable; above to work together to align the strawberry supply channel with the needs of the consumer.

*Identify the tensions*

There were strong tensions between retail and head office function about the previous season’s poor performance and non-availability of supply at times peak of peak demand.

*Show the range of choices*

The default choice was not to anticipate, not to be proactive, not to collaborate, and not to listen to the other partners in the strawberry supply channel. But the choices made were do the right things in the right way with all the parties in the channel.

**Characteristic Keywords** (Relevant keywords underlined)

Democracy; Associative; Collaboration; Interdependence; Non-Adversarial; Goodwill Trust; Win-Win; Dominant Designer; Specification Buying; Integrative

**7.6 Spanish Iceberg Lettuce: 2002**

Iceberg supply channel from Spain to UK retail: 2002

*An account of the event**Summary*

This is a temperature controlled supply channel case study of the Iceberg lettuce journey from Spain to UK supermarkets. The UK Retailer controls the supply channel and requires the producers to provide high quality standards of iceberg lettuce, in large volumes through an efficiently organised international delivery structure.

*The background and context*

Spain has become one of the major sources of produce for the rest of Europe. It could be called the garden of Europe. In the mid 1990s' the major UK supermarkets started to purchase produce direct from Spanish supplier cooperatives rather than purchasing produce through the UK wholesaler system. In a short space of time, the retailers increased their control along the produce supply channel so that by 2002 it was well established and in a mature state of operation. Iceberg Lettuce is a grown in large volumes in Murcia in south east Spain under direct contract between the

retailer and the growing cooperatives. The retailers' Quality Assurance and Technical departments provide the grower with the product specification and transport temperature control requirements from Spain to UK. The total flow of produce from Spain to the UK alone is 1,000 vehicles per week.

*The description of the event*

There are two methods of direct delivery into the UK supermarket distribution network. The first is to fill the vehicle in Spain solely with Iceberg Lettuce and split the delivery once it arrives in the UK by sending the vehicle to two different distribution centres. The second is to combine several produce products, e.g. Iceberg lettuce and courgettes while the vehicle is still in its originating region in Spain, so that the combined product volume fills the vehicle, which then delivers the whole load to a single distribution centre in the UK. The distance from Murcia to central England is 1,500 miles. The deliveries flow through daily. The total process time from harvesting to customer is four days. Day One: the Iceberg Lettuce is harvested, cooled, packaged and loaded into temperature controlled vehicles set at plus three degrees and despatched. Day Two the vehicle travels up through Spain and France. Day Three: the Iceberg Lettuce arrives direct at the temperature controlled distribution centre of the UK retailer, where it is checked in. Within three hours it is allocated and picked for a retail store ready to go out on the next delivery. Day Four: the Iceberg lettuce is on display in the retail store ready for the consumer to purchase.

The efficiency of the delivery system is improved by allowing a residual portion of the Iceberg lettuce delivery to be held in the distribution centre, should it be in excess of the store demand for that day; this system is called 'rolling stock' over in the depot. The ability to roll stock means that full loads of Iceberg can be delivered

direct to each distribution centre. The benefit is that any stock that is not picked immediately can be rolled over for the next day's retail orders. In order to permit 'roll over' the code life on Iceberg lettuce direct from Spain is extended by one day above UK deliveries; this extra day is used for rolling stock in depot. This direct delivery principle is applied to other products from Spain: in December & January; Soft citrus: in January through to May; Tomatoes and Broccoli: in June through to August; Galia & Honeydew Melons.

*The result or outcome of the event*

The UK retailer is in total control of the produce supply channel throughout its phases; from product specification, growing conditions, production volume, quality control, daily order quantities and the delivery and transport organisation into the UK retailer's distribution centres.

*Review of event from a channel perspective*

*Author experience of the event*

The author's knowledge of the direct delivery system from Spain is from acquaintance of close associates in quality assurance, stock control and commercial buying as well as the immediate knowledge from retail composite distribution operations. The author put forward the proposal, in 1994, that the retailer took control over the logistics and transport operation for the produce from Spain. This took several years to evolve into the mature structure described in the case study.

*Critique of event on scale of leader – follower*

This is an excellent example of the retailer as the channel captain, taking over from the role from the wholesaler / importer structure that had existed previously.

The retailer acted in a multifunctional spirit through the produce commercial function, who had both quality assurance and stock control staff integrated into their team.

*Revealing hidden evidence more explicitly*

The scale at which the large UK retailers operate is immense. The annual volumes required to supply the millions of customers weekly can no longer be left to the vagaries of the commodity weekly or daily spot market. The viability of the produce business depends on closely controlled forward planning of crop production volumes, which in turn requires a close and strategic business relationship with the supplier cooperatives and organisations in Spain. The Tesco style is close control with Tesco sending their own technical staff out to Spain to ensure correct product production, quality and volumes.

*Where were the decisions located?*

The decision to implement a direct delivery structure from Spain to the retailer's UK distribution centres was located in commercial buying, Quality Assurance and head office stock control working jointly on the strategy.

*What were the decisions about?*

The decisions were about three aspects: the first was product quality and supply; the second was the efficiency of full vehicle loads to each composite distribution centre; the third was taking control over the transportation costs and obtaining a rebate from the suppliers for the improved efficiency of the delivery system.

*Identify the tensions*

If the operation described above is compared to what existed before, it will help clarify where the tensions existed. Previously the suppliers in Spain would organise their transport to suit their objectives and best interests as they saw them. For example they would designate one vehicle to go to Kent and deliver to the different retail distribution centres in that region; and another vehicle to go to Manchester to deliver to the different retail distribution centres up there. This was understandable from their point of view, but quite inefficient from that of the receiving retailer. The tensions were in two arenas. The first was the external arena of the Spanish supplier and their transport operators who business was being changed as the UK retailer started to implement the direct delivery system. The second was the internal arena of the UK retailer, between commercial, stock control, Quality Assurance, and distribution. These functions had to find ways of working together in a coherent strategy so all the different business objectives were achieved.

*Show the range of choices*

The range of choices include leaving the delivery system as it had been in the past; a hands-off approach to the matter of controlling the supplier cooperatives tasks; or a close strategic collaboration with the supplier cooperatives and their transport operators.

**Characteristic Keywords** (Relevant keywords underlined)

Democracy; Associative; Collaboration; Interdependence; Non-Adversarial;  
Goodwill Trust; Win-Win; Dominant Designer; Specification Buying; Integrative



## Case Studies Category B: Broader Developments

This group of four case studies allow a higher level of analysis (Table 7.5). The detail of the individual product case studies has taken the reader right inside some of the specific dynamics that were taking place as a result of the leadership role taken by the retailer. But they were not events that took place in isolation. They were part of a broader development that was going on within the retail supply channel.

The author was directly involved in each of these case studies and that is the reason they were chosen. It is not the intention to convey an impression that the author was acting alone. Quite the opposite, there were many instances of leadership in the retail supply channel where the person driving that change came from any and all of the various functions and departments of the organisation. But the author is not privy to their experience even though he may have a general knowledge about their contribution.

Ref	Category B: BROADER DEVELOPMENTS	
7.7	L1	<b>Chilled</b> product supply 'At the right freshness': 1985 to 2005 Retail leadership in food safety, longer shelf life for consumer, dramatic growth in sales, still a benchmark for others to follow
7.8	L1	<b>Produce</b> supplier logistics and primary distribution: 1990 – 2005 Shaping supply networks for service, efficiency and competitive advantage. Multifunctional collaboration with suppliers and logistics service providers.
7.9	L1	<b>Frozen</b> from bulk storage to national network: 1986 – 2003 Transforming the structure and pace of the frozen supply channel from intervention to rapid retail distribution
7.10	L1	<b>Sustainable distribution</b> : an integrated transport approach: 1997 The Tesco supplier collection and Department for Transport best practice programme, an example of sustainable distribution.

**Table 7.5 Case Studies Category B: Broader Developments**

## 7.7 Chilled Product Supply: 1985 –2005

Chilled product supply ‘at the right freshness’: 1985 to 2002

### *An account of the event*

#### *Summary*

This case study describes the retail leadership in food safety, creating longer shelf life for the consumer, with dramatic growth in sales, which is still a benchmark for others to follow.

#### *The background and context*

This case study starts in 1985 because that is the year of the review about the future supply channel and distribution strategy for the temperature controlled products. That debate resulted in the dramatic implementation of seven large scale multi-temperature composite distribution centres in 1989. But this case study examines the underlying drivers of change that created a retail success.

#### *The description of the event*

The key driver was the retail leadership in response to and anticipation of the food safety legislation that eventually came into force in 1991. This leadership was about implementing standards of temperature control throughout the retail supply channel in order to protect product quality and hence consumer safety. The author in his MBA dissertation (1992) referred to this as ‘at the right freshness’, adding to the marketing 4 P’s of right product, right place, right price and right promotion. In an earlier chapter reference was made to the work of quality assurance team and the improvements in code dates for produce. Table 4.2 demonstrated how the attention to the integrity of the chill chain brought about benefits in the form of longer shelf life of products, in particular produce, to which the table relates. Consumers quickly noticed

that the produce they purchased from their Tesco store remained fresher for longer in their home, than produce they purchased from their local greengrocer.

There was a dramatic growth in sales of produce in those early years when the chill chain disciplines were introduced by the Quality Control department along the length of the retail supply channel. For example, the sizes of the produce chambers in the composite distribution centres were calculated to handle growth in demand at the historical rate for at least five years. In fact the growth in consumer demand was so strong that within two years their capacity was insufficient. Distribution operations had to find other ways of handling the volume. This was retail leadership which other retailers then followed so that within a decade all retailers had implemented strict chill chain controls along the retail supply chain and in their stores. Tesco leadership had raised the benchmark for others to follow.

#### *The result or outcome of the event*

This is a brief account of the driving forces during the major events over the period 1986 to 2002, which were described more fully in the earlier chapters. Freshness and longer life in the consumer's home are two critical success factors for retailing produce and fresh products.

#### *Review of event from a channel perspective*

##### *Author experience of the event*

The author was closely involved in the implementation of the composite distribution strategy in 1989 and fully aware of the activities that the company was taking to implement strict temperature controls and better product freshness.

*Critique of event on scale of leader – follower*

This is a good example of the retailer leading and reshaping the retail supply channel for temperature controlled products and produce. The disciplines were put in place gradually until there had been a complete transformation of how the suppliers were operating.

*Revealing hidden evidence more explicitly*

The hidden factor here is something that at once is obvious but at the same time can be amazingly hidden from view. The link between extended product code life, freshness and the discipline over the chill chain from harvest to retail shelf is not obvious to the consumer who purchases produce and fresh products from the retail store. It is the people who work in the industry who know about what has happened. It is like a ‘trade secret’. In the author’s fieldwork abroad, in South Africa, Mexico and Jordan (see later case studies), it is clear that those involved in their fresh product and fresh produce supply chains do not know yet about this ‘trade secret’.

*Where were the decisions located?*

The decisions were located in retail, in quality control with the full involvement of commercial, the suppliers, transport operators and retail

*What were the decisions about?*

The decisions were about agreeing the standards of control and how to implement the management disciplines effectively

*Identify the tensions*

The tensions existed between the retailer and those suppliers who were operating in the old way without strict temperature control.

*Show the range of choices*

The alternative choice was to do nothing, but the impending legislation compelled the industry to act.

**Characteristic Keywords** (Relevant keywords underlined)

Democracy; Associative; Collaboration; Interdependence; Non-Adversarial; Goodwill Trust; Win-Win; Dominant Designer; Specification Buying; Integrative

## 7.8 Supplier Logistics: 1990 – 2005

Produce supplier logistics and primary distribution: 1990 to 2006

*An account of the event**Summary*

The first move into produce supplier logistics took place in 1990 but the concept evolved and developed into a new function, Primary Distribution which is still active today and effective in controlling and organising the inbound transportation of the retail supply channel. This development shaping the supply networks to provide a better service, with greater efficiency, which gained competitive advantage for the business. It is founded on multi-functional collaboration by the retailer with the suppliers and the logistics service providers

*The background and context*

In 1990 the author submitted a proposal to the Main Board Distribution and Supply Chain Director, which was approved. The proposal concerned the issues

surrounding the logistics of supplying fresh produce in the retail supply channel. *“To control the movement of Produce from the point of supply to Goods in at Composite to ensure it arrives at the right time, in the right volume and at the right freshness”* (Smith 1990). The author took on the role of produce supplier logistics in addition to the duties of controlling composite distribution centre operations run by logistics service providers. Later on, in 1994, the author was appointed Head of Primary Distribution with a small team of managers.

#### *The description of the event*

In September 1990 the author held a preliminary meeting with a small group of produce suppliers together with representatives of the main business functions of Trading, Technical Services, Stock Management, Composite Distribution Operations and Logistics. A variety of issues were identified by the suppliers, examples of which have been given in Case Study 7.1: Potatoes on the suppliers shift patterns and Case Study 7.5: Strawberries on the timing of order lay off from Head Office and the punctuality of the collection time by the hauliers.

The discussions with the main hauliers and suppliers revealed a picture of a transport infrastructure for the Produce industry that was fragmented. It was founded on family businesses, with partnerships between certain suppliers and hauliers, which went back over many years. From a farming family, for example, one son might become the mechanic and another son might become the grower. Over the years, the two brothers probably worked closely together helping each other out in times of difficulty. Such bonds are not easily broken apart; certainly not by some outsider coming in and suggesting commercial competition among transport operators. As a consequence, although there was a surfeit of transport, this generated a protectionist

attitude as a defence against competition. The result was fragmentation rather than coordination. Success would depend on taking a different approach. The author's role in supporting the supplier logistics development was to discuss with the suppliers, those factors that impacted on the collection times. The control of the departure times was in the hands of the suppliers. They controlled the interface with crop processing and the production side of the business. These discussions about production planning were assisted by the presence of Technical Services who advised on production techniques and the start times for lifting the crop. The end result was the successful implementation by the suppliers of firm operational control over their agreed despatch times. It was the key to effective logistics. The principles were applied to other temperature control product groups, such as Case Study 7.4: fresh meat and poultry.

In 1994, Primary Distribution was set up, headed up by the author, with a good quality team of experienced logistics operators, each specialising in different product groups. Each member of the team was located within the relevant commercial buying function. The priorities for primary distribution action were agreed with commercial. There were many projects that were conducted successfully. Another major development taking place was the establishment of consolidation centres for produce and other fresh product groups. The operation and benefits of consolidation centres were described earlier in chapter four. They spread quickly throughout the major fresh food retail sector.

At that time commercial were implementing a process of supplier assessment and development through their buying teams. Suppliers were judged according to their abilities to contribute to the business. The larger or more able suppliers were then selected for development into a strategic partnership relationship

with the company. This attitude of growing collaboration progressed until in 1996, the Main Board Director announced at a special national meeting with all the suppliers that Tesco would be willing to share information. There was something he requested in exchange: that the suppliers designate their best managers to think about the Tesco retail business and come up with creative ideas to take the whole market forward. Out of this came the Tesco Information Exchange programme. The other retailers each developed their own version of information sharing with suppliers. This raised the whole level of collaborative thinking and partnership between retail and suppliers.

Later, Primary Distribution matured into a separate function in 2001 headed by a Primary Distribution Director working with a Commercial Trading Director and a joint team of commercial buyers and distribution logistics operations, some of whom had been in the original primary distribution team. By this time, Tesco had found a financial method of implementing Factory Gate Pricing with their suppliers. The retailer now took direct control over the organisation and payment for the inbound supply channel transport.

#### *The result or outcome of the event*

Within ten years, Tesco the retailer, evolved from a totally hands-off relationship with the inbound logistics of the retail supply channel into a fully mature primary distribution, fully engaged in the organisation and payment for that logistics.

#### *Review of event from a channel perspective*

##### *Author experience of the event*

As already mentioned the author was closely involved in the early stages of the evolution into primary distribution, which is now fully visible for everyone to see.



*Critique of event on scale of leader – follower*

The retailer did become more involved and so evolved into a leader over the logistics of the inbound retail supply channel.

*Revealing hidden evidence more explicitly*

The hidden evidence is that the costs of the inbound supplier transport were included in the buyers' gross margin. It was only in 1994 that the true scale of those costs were calculated and made known to the business. It still took a further five years to find the mechanisms and the will to separate out those costs as a directly manageable expense. More importantly, the mature primary distribution function, created competitive advantage for the business by leveraging the benefits of scale of the logistics operation and harnessing the skill and expertise of those within the organisation.

*Where were the decisions located?*

The decisions were located between commercial, distribution and the suppliers.

*What were the decisions about?*

The decisions were about who should get involved with the inbound logistics control and how to apportion the cost benefit of the savings.

*Identify the tensions*

The tensions were between the different functions within Tesco and also with suppliers and their transport and logistics operators. The tensions were about the

control and choice issues as well as the impact on the suppliers of the removal of the Tesco volume from their warehousing and transport scale. Quite often it left a rump of high cost distribution to the smaller operators. The fact that the retailer is acting as channel captain in this is received with mixed feelings by the suppliers and logistic service providers, some of whom dislike it intensely.

*Show the range of choices*

The choice was to continue in a hands – off, no involvement, it is all down to the suppliers to sort out attitude, behaviour and relationship. The alternative was to evolve into a fully engaged partner with the suppliers as happened with primary distribution.

**Characteristic Keywords** (Relevant keywords underlined)

Democracy; Associative; Collaboration; Interdependence; Non-Adversarial; Goodwill Trust; Win-Win; Dominant Designer; Specification Buying; Integrative

## 7.9 Frozen Channel: 1986 – 2003

Frozen from bulk storage to national network: 1986 to 2003

*An account of the event*

*Summary*

This case study relates the story of the transformation in the structure and pace of the frozen supply channel from ‘intervention’ storage to rapid retail distribution.

*The background and context*

‘Intervention’ is an expression that is not heard today. It relates to an earlier time in the 1970’s and 1980’s when across Europe, there were stockpiles of butter and beef for example, called butter mountains and beef mountains. These were the

consequence of the agricultural and farming policies of the time. There were even unscrupulous people making money by moving these mountains from one country to another and claiming subsidies. Many of the frozen chambers and facilities of that era made their profit from holding these butter mountains and beef mountains in storage for months on end. It can be imagined that there was a low level of associated logistics activity. A delivery once a day might be the norm and staff only needed to be on site during an ordinary day shift, say from 8am to 4pm. The chambers themselves were crammed right up to the doors that were then firmly shut.

#### *The description of the event*

This was the normal operating environment of a frozen cold store in the early 1980's. It is a big contrast with today's modern fast moving stock and assembly processing and deliveries to serve the retail supply chain. How is it possible to make the transformation, from that static operation into the dynamics of the latter? In a presentation in 1996, the author portrayed the former as an elephant, slow and lumbering, with the latter as a cheetah, fast, agile and swift. Such was the daunting nature of the task.

Nonetheless, this was the task facing the author's team in 1986. The business had made the decision to set up four dedicated frozen distribution centres, using all the latest computer technology and stock control systems that the company had already implemented in its ambient fast moving centralised distribution centres. Making the modifications to the buildings, setting up the technology, store ordering processes, and getting the delivery vehicles was readily achieved. But finding the right team of management and operators with necessary experience, was a totally different matter altogether. But, despite a few teething problems, it was achieved. In addition to

this achievement, one of the team made it his personal objective to be able to assemble store orders using the sticky assembly product labels that were well established in the ambient grocery operations. These four frozen distribution centres were all provided by contract distribution operators and, as will be explained in Case Study 7.15, operated on an open-book accounting system.

The strategy was to set up these four frozen distribution centres ahead of the planned implementation of Composite Distribution in 1989. The rationale being that service to retail would be enhanced to daily deliveries immediately, using all the modern ordering processes and systems. An additional benefit would be that the transition into the composite operation would be easier with both the systems and the personnel transferring seamlessly over. In fact that is exactly what happened.

The frozen food strategy evolved as demand exceeded capacity, especially finding the space for the extensive number of product lines, some of which were very slow moving. A system of depot twinning was implemented in the mid 1990's and gradually the frozen chambers were removed from the Composite operations in order to increase the capacity for the other pick-by-line product groups. In 2001 an automated national frozen distribution operation was set up by Junction 18 of the M1. The store orders are now assembled there and the vehicles trunked to the composite distribution centres who delivery them onward to the retail stores. The weight limit on the vehicles had increased to 44 tonnes. This allowed the use of double decked trailers for trunking the frozen goods into the national distribution centre from the supplier consolidation operations around the country.

*The result or outcome of the event*

There was a successful transition from 'intervention' to rapid retail distribution operation for frozen food. It then evolved into an automated national frozen depot using double decked trailers for the trunk movements.

*Review of event from a channel perspective**Author experience of the event*

The author had direct involvement in this frozen distribution development from 1986 through to 1994.

*Critique of event on scale of leader – follower*

This implementation process is yet another early example of the retailer leading change in the supply channel, this time in retail distribution of frozen foods.

*Revealing hidden evidence more explicitly*

The hidden evidence is the state of the old 'intervention' frozen cold stores. In a field trip to Greece in 2000, the author visited frozen cold stores from that tradition, which were still in existence. This highlighted the transformation needed by the management to engage in modern retail store distribution.

*Where were the decisions located?*

The decisions were located in retail distribution.

*What were the decisions about?*

The decisions were about the way the design of a modern frozen distribution centre and retail store delivery service was based on the fast moving grocery model.

*Identify the tensions*

The tensions were with the management and operators as they went through a steep learning curve, but once established they were good. There were also tensions with the suppliers who were not accustomed to the distribution way of doing things.

*Show the range of choices*

The alternative was to leave things as they were until Composite itself was established.

**Characteristic Keywords** (Relevant keywords underlined)

Democracy; Associative; Collaboration; Interdependence; Non-Adversarial; Goodwill Trust; Win-Win; Dominant Designer; Specification Buying; Integrative

**7.10 Sustainable Distribution: 1997**

Sustainable distribution through integrated transport

*An account of the event**Summary*

The Department for Transport were promoting, through their Best Practice Programme, examples of sustainable distributions and selected the Tesco supplier collection system for inclusion.

*The background and context*

In 1998 the Department for Transport was due to develop a document on Sustainable Distribution for Freight. Their Best Practice Programme was based on that of the series used for saving energy in large production and manufacturing operations.

*The description of the event*

In 1997, the Department of Transport designated an engineer to validate the sustainability benefits of the Tesco supplier collection programme that had been in operation for several years. This was a process, whereby Tesco vehicles, after they had completed their retail store delivery, would go on to a supplier or manufacturer and collect pallets of product for inbound movement to the retail distribution centres. This reduced the vehicle miles that would have been driven if the supplier had done the inbound delivery and the retail vehicle return empty to the distribution centre. Annually it added up to three million miles, or 4,600 tons of CO<sub>2</sub>.

*The result or outcome of the event*

An important recognition by the Department for Transport of the value of a Tesco distribution initiative, culminating in an award from the Minister of Transport.

*Review of event from a channel perspective**Author experience of the event*

The author was involved in working with the designated engineer in 1997. Later in 1998, he worked with the Department for Transport, Freight division on the Sustainable Distribution Policy Documenting, providing examples of Best Practice from across the transport industry.

*Critique of event on scale of leader – follower*

Tesco was a leader in the scale of their supplier collection operation. Other retailers followed the example.

*Revealing hidden evidence more explicitly*

The hidden evidence is the increasingly efficient use retailers make of their vehicles.

*Where were the decisions located?*

The decisions are located in retail distribution in collaboration with suppliers, who agree a price with the retailer for the collection.

*What were the decisions about?*

The decisions are about the timings of the collections.

*Identify the tensions*

Tensions can arise with the pressures of other uses of the vehicles, such as collecting empty cages, trays and recycling material from the retail stores.

*Show the range of choices*

The choices were not to do the collections, and also to negotiate with the suppliers transport operation to take store orders and deliver them to stores on their way back to their supplier base.

**Characteristic Keywords** (Relevant keywords underlined)

Democracy; Associative; Collaboration; Interdependence; Non-Adversarial; Goodwill Trust; Win-Win; Dominant Designer; Specification Buying; Integrative



## Case Studies Category C: Capacity & Control

Ref	Category C: CAPACITY & CONTROL	
7.11	L2	<b>Warehouse Productivity</b> , Just in Time capability: 1980's – 2000's The innovative techniques to increase productivity in distribution to service retail as they improved their stock systems in store.
7.12	L1	Shaping <b>supply networks</b> pre-composite: 1980's Logical evolution, preparing way for composite
7.13	L1	<b>Composite Capacity</b> : 1989 – 2004 Ground breaking initiative, zero stock, pull demand and since then continuous growth that is hidden from external view
7.14	L1	Role of <b>Logistic Service Providers</b> : 1980's to 2005 The partnership with logistics service providers enabled retailers to, harness their logistics initiative and achieve scale quickly. The retailer provided the thought leadership but with a style that was transformational rather than transactional

**Table 7.6 Case Studies Category C: Capacity & Control**

These four case studies (Table 7.6) go behind the scenes to explain some of the hidden trends and developments that took place to anticipate and control the need for capacity. In any supply chain, capacity is a critical strategic and development issue. Capacity can be altered by improving the methods of operating, that is, by working smarter. It can be altered by reconfiguring the shape of the supply channels or adding or removing distribution facilities.

The scale of the retail operation is so large that they thrive on volume and as the team becomes accustomed to operation at a certain volume, so they are able to handle incremental volume year on year. The retailers can decide to involve external companies in the work of managing part of the retail supply channel. The fourth case study explores the roles of the logistics service provider. The retailer still remains as the channel leader by determining the parameters or guidelines for the services that these external companies provide.

## 7.11 Warehouse Productivity: 1980s – 2000's

Warehouse productivity: 1980's to 2000's

### *An account of the event*

#### *Summary*

This case study describes the process of continuous improvement and the innovation that took place to increase productivity in fast moving grocery distribution centres so as to service retail better as they improved their stock systems in store.

#### *The background and context*

The twenty year period from 1980 to 2000 witnessed a major evolution in retailing as described in the earlier chapters. This case study examines some of the warehouse productivity improvements that were implemented over the same timescale by distribution operations in the retailer Tesco. Whilst this is not a treatise on the detail of productivity, it does provide an account of the major and significant developments. Many of these are well known to professional logistics operators but are presented here for the record.

#### *The description of the event*

In 1984, the author was appointed general manager to a Tesco fast moving grocery distribution centre. This was a time of great change in warehouse productivity. Just prior to that time, warehouse store order assembly was organised in teams with a productivity bonus based on the number of units assembled by the whole team and shared out accordingly. The store orders were assembled using printed lists, which the assembler would tick as each item was selected. During 1984 – 1985 a new warehouse store order assembly productivity scheme was introduced based on an individual assembler's performance measured against work productivity standards, which were all loaded into the computer. The computer calculated the optimum order assembly route

for each store order assignment in terms of distance travelled. Once through the initial difficulties of implementation, this new productivity scheme, which was titled: 'computerised labour standards' [CLS], proved effective. It enhanced the store order through put capacity of the distribution centre. The mechanical assistance provided was a battery powered low level order picker that had extended legs that would carry three roll cages. The store order assembly process was enhanced by using a set of sticky labels that were printed out for the three-cage assignment. The assembler took the sticky label off the printout, placed it on the item to be selected and then put that item in the roll cage. This label contained important information, which both distribution and retail could use, for example, to identify when the order was picked. This system continued in use for many years until the arrival, about 1998, of label-less picking using mini scanners.

The other part of a fast moving grocery warehouse operation is the organisation and control of the pallets of stock. In the early 1980's the warehouse layout was computerised and set up so that the reserve stock locations were designated to spaces close to the product assembly pallet, which was at floor level. This system replaced the earlier basic computer stock programme. It had a range of benefits. For example, there used to be an annual stock take in which a team would come in and over a couple of days, identify, count and reconcile, every pallet of stock with the database. The new system paved the way for a rolling stock take of a portion of the pallets every week and enhanced the control over the receipt of goods into the warehouse. By the late 1980's the system was enhanced to assist with the organisation of the movement of pallets of product in two areas, the first was the movement from goods in to the reserve location, called 'put-away', the second was the movement from the reserve location to the floor level selection location, called 'let-down'. In the past, the fork lift drivers had

a list of pallet movements which they organised manually. There was one team for 'put-away' and another team for 'let-down'. The upgraded system calculated a 'least-distance' route plan and combined the two sets of activities, 'put-away' and 'let-down'. This was combined with scanning confirmation of the movements and on board radio controlled information screens for the fork-truck drivers. The warehouse productivity and system developments described above were applied in all the distribution centres where there were products held as stock on site.

#### *The result or outcome of the event*

These are brief accounts of a complex and technical topic. The objective was not to describe technical leadership, but convey the continuous improvement progress, which increases the capability of the distribution operation to handle increasing levels of throughput within the same physical space. What are more visible are the changes that have occurred in the retail stores themselves. Stores have less back up stock on site, are geared up for frequent deliveries of product that they can put straight out onto the shelves, or just roll to the shop floor slot. The computerised stock and ordering systems in the retail store have evolved so that the order lead times have become shorter and shorter. The whole supply channel has speeded up its throughput and at the same time reduced the levels of stock in the system.

#### *Review of event from a channel perspective*

##### *Author experience of the event*

The author was the general manager of a Tesco fast moving grocery distribution centre from 1984 to 1986. For the next ten years through his involvement in the different distribution operations, he kept in touch with warehouse productivity developments.

*Critique of event on scale of leader – follower*

As this topic is an inside view of one part of the supply channel, it is not appropriate to critique the event on the scale of leader – follower. From inside the operation it felt like leadership.

*Revealing hidden evidence more explicitly*

Retail store order assembly is a manually intense operation for fast moving products. Warehouse productivity drives the level of cost of the labour resource required to handle the volume throughput. This labour cost is a large percentage of the annual operating budget for the warehouse.

*Where were the decisions located?*

The decisions are located in distribution operations, productivity and technical developments in computerisation.

*What were the decisions about?*

The decisions are about working smarter rather than simply working harder.

*Identify the tensions*

There are tensions between the labour force and management during changes and implementation, but they are handled by involving the staff in the developments.

*Show the range of choices*

A big choice option is to automate warehouse operations. This has been applied in selected operations, such as slow moving product areas like Health & Beauty.

**Characteristic Keywords** (Relevant keywords underlined)

Democracy; Associative; Collaboration; Interdependence; Non-Adversarial; Goodwill Trust; Win-Win; Dominant Designer; Specification Buying; Integrative

## 7.12 Pre-Composite Supply Channels: 1980s

Shaping supply networks pre-composite distribution: 1980's

*An account of the event**Summary*

This case study accounts for the logistics evolution that took place, preparing the way for composite implementation.

*The background and context*

In 1986 the debate was: is it worth making any improvements in distribution service to retail for those product groups that are destined to be placed in the Composite Distribution network, which was scheduled for implementation in 1989.

*The description of the event*

Produce saw the commissioning of Aztec West Produce Depot, near Bristol, in 1986, which represented the state of the art facilities and operation. The decision was made not to build any more produce depots but to manage the existing Produce network until its absorption into Composite in 1989. Long life provisions; butter fats and cheese, had an effective two depot set up providing national coverage and continued to provide an excellent service the until their transfer into composite.

Frozen Food (Case Study 7.9) benefited from the decision to invest in four distribution centres nationally by converting existing cold store locations with the appointed logistics service providers. These four facilities had the modern warehousing systems. The delivery service to retail was improved dramatically, better stock availability, reliable service and, for most stores, daily delivery. The old shared user, cold store network this replaced could not have provided this type of service nor handled the future growth in the business. These four dedicated frozen distribution centres performed excellently. As a result of the forward thinking and investment in systems, the transition into Composite when it came, was seamless, effortless and occurred without the retail stores even noticing there had been a change. It was an excellent strategic decision, which paid dividends in the growth of frozen food in the retail stores.

Short life provisions, both dairy based and meat based, were operated nationally by two different logistics service providers, through two separate networks of depots, each with their own way of operating. The dairy based provisions were assembled from stock at the depots and the meat based provisions were assembled on a pick by line systems as the suppliers arrived. In those days, the orders were taken by telesales and deliveries were made to the store two or three times a week. The author's first task in 1986 was to undertake a review of the short life provisions distribution structure. The result was a decision to rationalise from eleven to six depots, with each depot handling both dairy and meat based provisions. This amalgamation had three benefits. The first was the synergy between the goods in delivery profiles from the suppliers. Dairy based provisions normally arrived during the morning and the meat based provisions normally arrived in the late afternoon and early evening. The second

benefit is that stores could now receive a daily delivery service and for the larger stores even a couple of deliveries in a day. The third benefit was that the rationalised system had the capability of handling the strong growth in retail demand through until composite distribution was in place. The result for retail was a resounding success, which retail acknowledged, despite some early problems until the system settled down. The transition into composite went smoothly.

The final product group is fresh meat and poultry, which at that time were delivering primal packs (Case Study 7.4) on a variable-weight charging basis. This meant that each store was charged for the actual weight delivered, which would be carefully scrutinised by the store butcher. This system had been set a few years earlier. This was at the time that Tesco was being to centralise its buying and had brought in two trading managers to buy meat and poultry. In this instance it was the logistics service providers who lead the way in how the distribution should be organised, particularly with the issue of variable weight. There were six depots around the country each delivering to a region. The deliveries were two or three times a week and orders were taken by telesales. The system operated well and naturally the decision was made to let it continue until composite was implemented.

*The result or outcome of the event*

The result of these decisions was that retail received a much improved service for frozen food and provisions ahead of composite. The other product groups, produce, long life provisions, fresh meat and poultry, had distribution networks that provided a good service that would meet the needs of the business until composite.



*Review of event from a channel perspective**Author experience of the event*

The author, as divisional director, distribution for Tesco from 1986 to 1990, was in charge of the entire contract distribution operations nationally, most of which were scheduled to be transferred into composite. He was close to the implementation of these changes and the continuity of service through to composite.

*Critique of event on scale of leader – follower*

This period represents a cusp on the scale of leader –follower in terms of the retail supply channel for these product groups. There was leadership for produce and frozen, short life provisions and long life provisions. Fresh meat and poultry were really shaped by the logistics service providers who had experience, particularly of delivering variable weight products. Clearly, as there was more and more product groups being moved into centralised buying and centralised distribution, the retailer was shaping the direction of the retail supply channel for these products, even though they were dependent of the logistics service providers for the detail.

*Revealing hidden evidence more explicitly*

What is hidden is the process of continuous improvement that has been described in this case study. This was not only for frozen and short life provisions, it was also there for produce, fresh meat and poultry and long life provisions.

*Where were the decisions located?*

The decisions were located with distribution operations accountable for the various product groups together with those engaged in directing the strategy.

*What were the decisions about?*

The decisions were about the nature and timing of the enhancements to the distribution service to retail.

*Identify the tensions*

Tensions were between retail, commercial and distribution about the detail of the service to be provided during the interim.

*Show the range of choices*

Remaining with old network for frozen would have been a disaster. The short life provisions rationalisation did not need to happen. Enhancing the other product groups would have been an unnecessary cost.

**Characteristic Keywords** (Relevant keywords underlined)

Democracy; Associative; Collaboration; Interdependence; Non-Adversarial; Goodwill Trust; Win-Win; Dominant Designer; Specification Buying; Integrative

**7.13 Composite Capacity: 1989 – 2004**

Composite capacity: 1989 to 2004

*An account of the event**Summary*

This case study examines composite as a ground breaking initiative, with zero stock holding, driven by pull demand and then continuing to grow fast, a fact that is hidden from external view

*The background and context*

A step change, a dramatic switch in strategy, building a new type of distribution centre; all these are visible and were visible at the time to UK retail and logistics professionals. What goes on, year after year, inside these composite distribution centres is not so visible. The author returned to visit Composite fifteen years after he was there at their start.

*The description of the event*

How does an operation continue to grow from strength to strength and handle more and more volume in the same space? This question does have some answers, which will be documented here. The first answer is in continuous improvement in operational efficiency. Composite distribution, as described in earlier chapters, operates a 'pick-by-line' method, which was designed for temperature controlled products that have a short code life, such as, produce, provisions, fresh meat and poultry. The suppliers received orders for the exact quantity required that delivery day by the retail stores serviced from that composite. As these deliveries arrived from suppliers, they were checked in and immediately assembled into store orders. The store order assembly operation was quite different. An assembler would take a pallet of product, using a manual trolley, along a row of cages, each for a different store, and then place the required number of cases of the product into the store cage, and then put a label on the case. In the pick by line set up, as there were not reserve pallets of stock, there was no requirement of the 'put-away' or 'let-down' operation.

The other handling development that impacted on composite distribution was the introduction of the plastic tray (Case Study 7.17.) for produce, fresh meat and poultry and bakery products. The use of trays improved the productivity of the store

order because their design makes it easier to stack one on another. They were placed on dollies, while the roll cages were used for product that arrived in cardboard outers. In composite the manner in which the assembly teams are organised also promotes good productivity and therefore increases the throughput capacity. As the managers and operators become accustomed to handling a new peak level of volume and learn how to iron out the wrinkles and smooth the detail of the operation, so they can move forward steadily to yet another new level. The composite operation is so large, that effectiveness is directly related to everyone knowing what is expected of them, knowing exactly what to do, being experienced at pacing their effort to achieve the throughput targets. It is a compliment to the manner of the motivation of the teams.

Another answer to the question about achieving increasing volume throughput in the same space is to use the space differently. There were three groups of stock products in composite at the beginning: some ambient lines, like pet food; frozen; and long life chill products like butters, fats and cheeses. In addition to that there was a tray wash facility. These four items have either gone or been modified. The tray wash facility became defunct with the opening of the recycling units (Case Study 7.17). The ambient stocked items were transferred out in the mid 1990's when additional dry grocery distribution centres were built. The frozen food was transferred out by 2003 into the new national frozen centre (Case Study 7.9). The long life product group of butters, fats and cheeses, was converted from a stock held in depot system to the pick by line system in 1997. This conversion, although complex, was completed successfully. Another way for creating extra space was to rationalise the temperature regimes in composite, this allowed the unwanted partitions to be removed so that the floor space could be used more effectively.

*The result or outcome of the event*

In combination these two sets of improvements had the effect of more than doubling the capability of the composite site over that fifteen-year period. In 2004 a composite assembled in one day as much as the same composite assembled at the beginning in a week.

*Review of event from a channel perspective**Author experience of the event*

The author was directly involved in composite operations from 1989 through to 1994 at a senior level controlling up to five composites of the national total of nine.

*Critique of event on scale of leader – follower*

Outstandingly, the implementation of Composite Distribution was Tesco as a retailer acting as Channel Captain. There was creativity in the strategy itself, it was not borrowed from somewhere else.

*Revealing hidden evidence more explicitly*

It is a temptation to assume that a specific distribution centre has a capability that remains as its constant upper limit. This case study demonstrates that, intelligently planned changes can increase that capability over time. The really hidden factor, however, is the sheer ability of an excellent team to excel at achieving performance to new levels of activity. That fifteen-year revisit brought that home strongly to the author.

*Where were the decisions located?*

The decisions are located in retail distribution and supply chain, both at the development planning level and at the site operations level.

*What were the decisions about?*

The decisions are about planning ahead for the growth and development of the retail business and its demands on distribution operations capability.

*Identify the tensions*

If delivery performance fails, then the tensions are between retail and distribution, usually escalated to Board level. There is a tension in the strategic plan about the location of various product groups around the complex national distribution network. There are tensions within the distribution operation as the business demands higher throughput and the management and operators work together to achieve what is required.

*Show the range of choices*

Failure to anticipate the future needs of the business on distribution can harm a business severely. Poorly implemented change will damage a business. Investing in new logistics facilities is a long term commitment and is expensive

**Characteristic Keywords** (Relevant keywords underlined)

Democracy; Associative; Collaboration; Interdependence; Non-Adversarial; Goodwill Trust; Win-Win; Dominant Designer; Specification Buying; Integrative

## 7.14 Logistics Service Providers: 1980s – 2005

Role of logistics service providers: 1980's to 2005

*An account of the event*

*Summary*

The partnership with logistics service providers enabled retailers to harness their logistics initiative and achieve results quickly. The retailer provided the thought leadership but with a style that was transformational rather than transactional.

*The background and context*

The role of the logistics service provider had changed and evolved. There was a time when large manufacturers, for example Unilever, would organise all the transport themselves. Then the manufacturers went through a long period of deciding that they should concentrate on their core business of manufacturing and should not be involved in tying up assets and management resources in logistics. They disposed of their transport operations, which in many instances became transport and warehouse operators in their own right, some doing this through a management buyout. This piece of history is important in the examination of the role of channel captain organising the supply channel to retail. There was a time that the logistics service providers assumed that the retailers too would not want to get involved in tying up their assets and management resources in the intricacies of logistics. That might apply to some of the smaller retailers, but it did not apply to the large retailers. What then did the large retailer see as the role of the logistics service provider?

*The description of the event*

Several of the other case studies involve logistics service providers and their role in the retail supply channel. In the period of time before 1980 the transport and warehouse companies provided shared user services to retail, without retail wishing to

get close to the detail, provided the product was delivered as required. The 1980's saw a shift in the relationship between the retailer and the logistics service providers, as described in the other case studies, with the retail distribution departments employing professional logistics specialists in order to direct and control the detail of the logistics and supply operations of the logistics service providers.

This developed to a stage where the retailer distribution team were providing the thought leadership and the logistics service providers were running the daily operation, organising the resources and deliveries to the service specification agreed with the retailers. This is quite a surprising turn of events. It marks a swing in the debate about who is shaping the supply channel, the manufacturer or the retailer. The logistics service providers of the pre-composite operation were mostly extensions of suppliers and manufacturers that had by that time become independent or semi-independent companies in their own right. Their roots were with manufacturing.

Given that retailer had in house distribution operations, manned by their own staff, what was the motivation to place such a critical part of the supply channel in the hands of external logistics service providers? In the case of Tesco pre-composite, it was to provide flexibility in the logistics service during that interim phase before the composite distribution network was commissioned. As regards composite, the scale of the implementation was so large, so dramatic, so daunting, that it was a strategy to achieve scale rapidly. Opening seven large operations in nine months in 1989 was going to make a step change impact on the power of the retail business. To have opened two distribution centres a year over a four-year period, would not have had the same impact and also stood the risk of failing to have the assets to supply the strong growth in the retail business over that period of time. The end result was that five



composites were contracted to logistics service providers. They provided the management, resources and energy alongside the Tesco run composites. They did their job well.

A special relationship developed between the retailer and these logistics service providers. The retailer wanted the local composite distribution management to develop so that they learnt the full range of standards of operation that was required of them. They were encouraged to bring forward initiatives and ideas to develop efficiency in its service and contact with the retail stores. It was not simply a transactional relationship: only do exactly what is instructed; it was also transformational: develop, grow into the full role, and be creative and proactive. This was a successful and exciting way of working, from both sides. Soon, logistics service providers were sending the bright young managers to be initiated into the pace and style of composite operations, which were being recognised as world class leaders. These young managers then went on to develop and head up similar distribution operations that the logistic service providers were setting up for other retailers. Composite became the vehicle for the further evolution of the logistics service provider.

*The result or outcome of the event*

There has been a productive and strong partnership between retail and logistics service providers. The retail supply channel has gained.

*Review of event from a channel perspective*

*Author experience of the event*

The author was in charge of contract composite distribution centres managed by logistics service providers at varying times between 1989 and 1994; and

prior to that from 1986 he had accountability for national contract distribution operations in Tesco prior to Composite. He was in a good position to understand the different roles of the logistics service providers.

*Critique of event on scale of leader – follower*

The retailer showed world class leadership with composite distribution. The logistics service providers benefited from their participation and now have feet firmly in both camps, manufacturing and retail.

*Revealing hidden evidence more explicitly*

The hidden evidence is the proactive participation that went on with the logistics service providers. From the outside, either interpretation is possible: the logistics service provider is leading it all; the retailer is dictating it all. The truth is that the sign of a good logistics operator is that they are always looking for better ways of doing things. That was true of these logistics service providers.

*Where were the decisions located?*

The decisions were located in retail distribution operations management as well as the logistics service provider's management.

*What were the decisions about?*

The decisions were about the strategy, the retail delivery service, the operational systems and procedures; and the renewal or not of the contract.

*Identify the tensions*

There were tensions between the retailer and the logistics service providers, about the terms of the contract and its renewal. These were handled properly.

*Show the range of choices*

The alternative of not using logistics service providers, was not practical without delaying the implementation plan for composite.

**Characteristic Keywords** (Relevant keywords underlined)

Democracy; Associative; Collaboration; Interdependence; Non-Adversarial; Goodwill Trust; Win-Win; Dominant Designer; Specification Buying; Integrative

**Case Studies Category D: Technical & Design**

Ref	Category D TECHNICAL & DESIGN	
7.15	L1	<b>Open book</b> accounting pre and post composite: 1986-90 Implementing visibility of costs for greater flexibility in service. This is a basic building block of professional logistics, which is now the norm
7.16	L2	<b>Composite</b> three temperature compartment <b>trailer</b> : 1989 Industry innovation with external specialist Thermoking, led by retail.
7.17	L1	Second generation <b>plastic tray</b> : 1990s Industry leadership from Tesco Board pushing design boundaries
7.18	L2	<b>Bonded</b> Distribution and Customs & Excise: 1988 Retail leadership in initiating assembly direct for Bond.

**Table 7.7 Case Studies Category D: Technical & Design**

This series of four case studies (Table 7.7) touches on some technical leadership shown by retail through the specialist expertise of their team members. This expertise is given the leadership space because of the brand leadership of the retailer. If these experts were working for another company not held in respect by the industry, they would probably not be in a position to influence standards within the industry.

## 7.15 Open Book Accounting: 1986 – 1990

Open book accounting, pre and post composite distribution: 1986 to 1990

### *An account of the event*

#### *Summary*

Traditionally distribution had been contracted on a basis of agreeing a unit cost per case. As Tesco became more involved in retail distribution and centralisation so there was a desire to implement the full visibility of logistics costs not only for financial control but also to for a greater flexibility in providing the distribution service to the retail stores. This is a basic building block of professional logistics, which is now considered normal but at the time was quite a dramatic change.

#### *The background and context*

During the 1980's contract distribution was normally financed by an agreed unit cost per case for a particular service for the whole year. The customer considered this as a sound stable way of budgeting for logistics services. It was a guaranteed method of planning revenue flow by the distribution operator. At that time most warehousing, transport and logistics contract operations were operating a shared user policy. There would be several customers using the same warehouse, storage, transport and logistics facilities together. The contract distribution operator knew the total costs of the operation but kept that confidential. It was not shown to the various customers. It was up to the contract distribution operator to make his profit margin.

#### *The description of the event*

It was the context when Tesco implemented the policy of centralising the distribution of product lines. This decision was the result of the experience from Operation Checkout in 1977. Tesco had used its in-house transport, storage and

distribution facilities. But there was a need to use contract distribution operators for various products groups through several supply channels. In 1986, the author took up the responsibility for controlling the contract distribution operations nationally. Some of the contracts were left on a case rate basis but it was considered that others needed a change to their terms. This case study relates to one such contract, the frozen food distribution contract operation, which serviced the retail stores in the South West and Wales. The whole site and operation were dedicated to this retail service. It was logical to consider the option of open-book accounting contract, rather than a case rate contract. After due negotiations this was agreed. The principle and process were applied to other contract distribution operations.

There were several consequences to this transition to an open book accounting contract. The first was the provision of comprehensive information on all the costs involved in providing the service. The second was the need for a regular management review of the expenditure before it was authorised for payment. The third was a requirement on the contract distribution operator to put forward ideas about reducing the cost of providing the service. Fourth, there was a lower incremental cost of increasing the volume either annually or at peak times than would have occurred with a case rate contract. Fifth, there was a separate mechanism for paying the contractor a management fee for providing the service.

The sixth consequence was an ability to enter a discussion with the retail stores about additional costs for providing changes to the service that they requested. This would lead onto a cost benefit business case; the result sometimes would be that the retailer withdrew their request because it was not an overall gain to the company. Many times however an improved service to retail was authorised and then the

appropriate costs were signed off and paid. This method of open book accounting became the standard for contract distribution agreements.

*The result or outcome of the event*

Some contract distribution companies willingly agreed to the transition to open book accounting, others were reluctant because they felt they were losing control. Nonetheless, even these reluctant contract distribution operators, started to apply the open book accounting policy to their other contracts.

*Review of event from a channel perspective*

*Author experience of the event*

The author, as the Divisional Distribution Director for Contract Distribution, was closely involved in driving forward the change over to open book accounting contracts. It proved to be a benefit: as the demands of retail changed and developed it was easier to agree about the costs incurred. It enabled distribution to provide retail with a quality service at lowest cost.

*Critique of event on scale of leader – follower*

The retailer was emerging as a leader at this time. Implementing the transition to open book accounting was a sign of that leadership position.

*Revealing hidden evidence more explicitly*

For the author, one sign of a good quality distribution operation is that the team are always seeking ways to improve the operation either in providing a better quality of service or inventing better ways of working smarter or more productively.

Open book accounting provided the opportunity to collaborate with the contractor and recognise good creative ideas.

*Where were the decisions located?*

The decision was located with the retailer through the senior distribution operations manager. The detailed operational decisions about the quality of service to retail were located with retail and the local distribution operator.

*What were the decisions about?*

The big decision was the switch from case rate to open-book accounting.

*Identify the tensions*

There were significant tensions between the retailer and the contract distribution company when the issue of switching to open book accounting was raised. Once it was implemented, the contract operators liked it because it was transparent.

*Show the range of choices*

The alternative choice was to leave the case rate contracts in place and then have a debate every time the service to retail needed to change.

**Characteristic Keywords** (Relevant keywords underlined)

Democracy; Associative; Collaboration; Interdependence; Non-Adversarial;  
Goodwill Trust; Win-Win; Dominant Designer; Specification Buying; Integrative

## 7.16 Composite Trailer: 1989

Composite three temperature compartment trailer: 1989

### *An account of the event*

#### *Summary*

Transport industry innovation with external specialist Thermoking, led by retail.

#### *The background and context*

Composite distribution enabled temperature controlled products, chilled, fresh and frozen to be distributed through one system of multi-temperature warehouses and vehicles. In the preparation for the rollout of Composite distribution scheduled for 1989, there had to be planning and thought given to the specification of the delivery vehicle used to take the different products to the retail stores.

#### *The description of the event*

The Tesco distribution development team with the responsibility for transport joined with Thermoking to create a new type of trailer for the future use in Composite distribution. The objective was to design a special vehicle trailer with temperature controlled compartments to deliver the combination of these products. It would provide daily deliveries of these products at the appropriate temperature so that the products reached the customers at the stores in the peak of freshness. The insulated composite trailer can be sectioned into one, two or three chambers by means of movable bulkheads. There is independent control for up to three temperature regimes. For example, frozen products at -20 degrees Celsius can be carried with fresh meat at +1 degree and bread and bananas at +12 degrees without affecting product quality. The size of each chamber can be varied to match the volume to be transported at each temperature.



*The result or outcome of the event*

The three temperature compartment trailer was a resounding success. It improved transport utilisation by forty percent over the use of single temperature trailers.

*Review of event from a channel perspective*

*Author experience of the event*

In an interview with the European Head of Thermoking in 2002, the author heard directly from the top engineering designer of Thermoking that the technical development of the three temperature compartment trailer was a groundbreaking innovation led by Tesco. This is an amazing assessment. As a senior manager involved in Composite distribution implementation during 1989, the author knows first hand the usefulness and continuing benefit of this trailer design

*Critique of event on scale of leader – follower*

This is clearly an example of the retailer as a leader in the specialist technical area of vehicle trailer design and thinking. Normally a manufacturer, such as Thermoking, would lead the way in technical innovation.

*Revealing hidden evidence more explicitly*

The scale of the Composite distribution operation is so large that there are valuable transport efficiency gains from the flexibility of providing different temperature regimes in the same trailer for a delivery to a specific store.

*Where were the decisions located?*

The decision was located in Tesco retail distribution engineering development team working in close collaboration with the manufacturer designer.

*What were the decisions about?*

The decisions were about the technical way forward to achieve the desired objective.

*Identify the tensions*

The tensions were about the development cost of creating a totally new type of temperature controlled trailer.

*Show the range of choices*

One choice was to remain with the inefficiencies of single temperature trailers. These were the norm in the transport industry and so the cost was lower. The other choice was for the retailer to become the dominant designer in driving forward quickly to a new level of solution.

**Characteristic Keywords** (Relevant keywords underlined)

Democracy; Associative; Collaboration; Interdependence; Non-Adversarial; Goodwill Trust; Win-Win; Dominant Designer; Specification Buying; Integrative

## 7.17 Plastic Tray: 1990

Second generation plastic tray: 1990 to 2005

### *An account of the event*

#### *Summary*

Tesco initiated and implemented not only a national recycling structure but also created a second generation plastic tray that was later adopted by the retail industry in the UK and then in other European countries. This was industry leadership from the retailer that had a widespread impact on the supply channel. It was achieved by pushing the design boundaries beyond their previous limits. The design and implementation timescale was completed within two years, which is rapid

#### *The background and context*

In 1991 the Tesco Board made a strategic decision to implement a national system of recycling centres that would provide a service to all the retail stores. The policy included reusable plastic trays and a facility for recovering all the waste cardboard and plastic. The company had identified the importance of the impending EU waste packaging legislation and decided to create a business opportunity and act as good citizens by protecting the environment. An earlier version of the plastic tray had already been introduced into the business about 1988, mainly for use with fresh fruit and vegetables. The plastic tray proved an effective solution for the store order assembly process following the transition from the traditional stockholding depot system to composite distribution, where no stock is held in the depot and consequently there is a fast handling of product: what comes in goes out the same day.

*The description of the event*

The management of Tesco decided to create a standard design for all the recycling service units. This standardisation applied both to the procedure of the operations and also to the building size and design. One of the considerations was to minimise the cost of the land by building a unit on a minimum floor area. One influence on this was the floor space that would be needed for storing the empty trays. Hence, the empty nesting ratio became a vital design issue. The first generation trays had a reduction capacity ratio of 1:2, i.e. two empty trays take up the same loading height as one full tray. In order to achieve an acceptable space economy for the recycling building units, it was calculated that the empty nesting ratio needed to be 1:4, i.e. four empty trays take up the same loading height as one full tray. When Tesco addressed this empty nesting requirement to the supplier of trays, the first reaction was that “this is impossible”. However Tesco representatives, supported by one of the board directors, persistently argued the need to accomplish this task, pushing the tray designers to go beyond the limits of the existing tray design features. Finally, a tray with a nesting capacity of 1:4 was ready for delivery and was introduced into the business.

This second generation tray had other significant features other than an empty nesting ration of 1:4. It had fold-in / fold-out bale arms made as a result of new technological developments in the strength of the plastic material. The earlier versions were weak and brittle and so broke easily. The bale arms were folded inwards for assembly and stacking when full so the product below was protected from the weight above. The bale arms were folded out for stacking when empty. The bale arms had two fold-in positions giving two different internal heights. There was a family of trays of differing heights on the same 400 by 600 mm base as well as half trays. These

variations in heights improved the space utilisation of the product in the trays according to the actual height of the products.

Following the introduction of this second generation plastic tray there was an expansion programme to increase rapidly the volume of product groups using the plastic tray. This expansion programme required the multi-party cooperation between various Tesco functions and the suppliers of the products. The commercial buying department selected the sequence of those product groups that should convert to using the plastic tray in place of the corrugated packaging. The logistics department identified solutions where handling and stacking operations would be improved by using the plastic tray, and involved suppliers reduced their costs for packaging by using the plastic tray. The roll-out of the new plastic tray took place during 1992-1994. The commercial department had identified fresh fruit and vegetables as the first product group to be introduced to the new plastic tray. The savings for the suppliers were easy to calculate as they could shift from a high-cost good quality corrugated cardboard to the plastic tray and benefit from its lower unit cost. The number of plastic tray circulating per year formed the basis for the cost per tray, which the suppliers paid instead of buying corrugated cardboard packaging. In the initial stage, that cost was estimated at 27 pence per trip.

This cost was too high for many other product groups, so Tesco had to find a way to reduce the unit cost of the tray. By introducing additional product groups, the number of trays in circulation could be increased, and thus the cost per tray was reduced. The next product group to be introduced was fresh meat and poultry. As the production system for these products had been changed, it was now possible to pack the finished products directly into plastic trays and then distribute to the retail stores via

composite distribution. Tesco's management then set a further objective where the growing number of products using plastic trays would reach an annual volume of 100 million tray trips by 1997. As the trip cost fell down to about 21 pence per trip, an even greater number of products could be packed in the trays. The further product group to be introduced was specialist bakery products, such as croissants and pastries.

The implementation was progressed through a multi-party approach involving the suppliers and all separate functions within the retailer. The company decided that the best way to introduce the new strategy was to invite their suppliers to a special demonstration day, held at one of their recycling service units. Small groups of suppliers met Tesco representatives from the commercial, technical, supply chain, and logistics departments as well as staff from the retail stores. At these meetings the objective was to define and agree the optimum configuration of products in a tray and also to discuss the implications of the packaging change. These meetings turned out to be important events because it resulted in new ways of thinking about the use of plastic trays, the implications for production and a greater awareness of the benefits both for Tesco and the suppliers. The suppliers gradually changed their perspective once they saw the scale of the recycling operation and the new direction of the retail strategy. The suppliers elevated their decision making from the minutiae of production technicalities to the level of choosing the Tesco supply channel.

#### *The result or outcome of the event*

The second generation plastic tray was a success. Subsequently, manufacturers concluded that they approved of the benefits of the plastic trays, but pointed out that different retailers had their own different sizes and specifications. This resulted in complexity in their production and distribution processes. The

manufacturers asked the retailers to act together and agree a common standard for the plastic tray. The result was that the industry adopted this second generation tray as the standard. At first sight, a technical design feature for a plastic tray seems far removed from the issues of the supply channel. However, the transition out of corrugated boxes and into plastic trays had major repercussions on the production and packaging organisation at the suppliers as well as a switch away from the original packaging suppliers. The whole product group had to switch to make the operation viable. This intensified the channel perspective

#### *Review of event from a channel perspective*

##### *Author experience of the event*

The author was directly involved in driving forward the roll-out of the second generation tray during 1997 to achieve the target of 100 million trips per year. This included the discussions with the commercial buyer directors and the multi-functional supplier workshop days at the recycling units. As a senior executive responsible for composite distribution operation since 1989, the author was fully in touch with the importance of the use of plastic trays in the supply channel. The information about the early development debate with the tray manufacturer was gained through an interview with a colleague, who was responsible within Tesco for that evolution in design features.

##### *Critique of event on scale of leader – follower*

In this instance, there was no doubt that the retailer acted as the channel captain shaping the supply channel. The new strategy was created, designed, implemented and developed by the retailer. The manner of the leadership was

collaborative and engaged the suppliers proactively to work through the implications for their operations.

*Revealing hidden evidence more explicitly*

The author witnessed, first hand, how the learning process that occurred at the supplier meetings at the recycling units provided a good example of how information, support and resources when properly controlled, can facilitate a change process. There came a point in time during the workshop, usually after a couple of hours, that the suppliers elevated their decision making from the tactical, e.g. about the production process, to the strategic level. It had become clear to them that the retailer was determined to embark on this new strategy. Their choice was to join this new direction willingly or get left behind.

*Where were the decisions located?*

The main decision was located at the level of the retail Board Director. The senior decision making was critical to the swift implementation of the project. It ensured all the functions in the company worked together to achieve the objective. The design function decision was made by the retailer, the design solution decisions were made by the plastic tray manufacturer. The rollout decisions were made at the commercial buying department level in collaboration with retail, quality assurance, stock control and logistics.

*What were the decisions about?*

The main decision was about the new strategy to implement a national recycling structure. Then there were the decisions about the design function and the



design solutions. Finally there was the series of decisions about which product groups should be included in the roll-out programme.

*Identify the tensions*

There was a great deal of tension between the retail design function decision makers and the plastic tray manufacturer who had to provide the design solution decisions. There was also considerable tension between the retailer and the product suppliers who were asked to start using the plastic tray system. There was also tension between the product suppliers and the suppliers of corrugated packaging, who were losing that part of the business.

*Show the range of choices*

As regards the main decision, clearly the retailer could have adopted the do nothing approach, but instead chose the leadership route of being the market leader. The design function and solution choices are dramatic. Tesco took the opportunity of being the “dominant designer” (Koehurst et al 1999), thus being able to be the driver of both the outcome and the speed of implementation. The retailer chose to make the manufacturer discover new technological solutions. There were choices about the level of use of plastic trays, from minimal to maximum. The retailer chose to maximize the volume where it made commercial sense. Finally, there was a choice to participate in an industry standard or go on in isolation. It is to the credit of both the retailers and suppliers that one design was agreed.

**Characteristic Keywords** (Relevant keywords underlined)

Democracy; Associative; Collaboration; Interdependence; Non-Adversarial; Goodwill Trust; Win-Win; Dominant Designer; Specification Buying; Integrative

## 7.18 Bonded Supply: 1988

Bonded Distribution and Customs & Excise: 1988

### *An account of the event*

#### *Summary*

The bonded warehouse operation successfully integrated with the Customs documentation control systems to permit store order assembly direct from Bond.

#### *The background and context*

In 1985 – 86 Tesco set up two bonded distribution centre operations to replace the previous bonded warehouse service. They were both operated by bonded qualified logistics service providers. Prior to this development, stock had to be taken out daily from the bonded reserve stocks and placed in a duty paid store assembly area before sending to a distribution centre.

#### *The description of the event*

Tesco developed an integrated computerised link between the distribution store order assembly systems and the duty control customs systems that were a requirement for bonded warehousing. After a considerable period of proving that the system operated correctly, Customs and Excise authorised that store orders could be assembled direct from bonded stock. This was a first.

#### *The result or outcome of the event*

This was a revolution in procedures. Duty would be paid in the normal timescale, of six weeks, but it improved the distribution operation in terms of use of space and reduced work because the reserved product did not have to be moved out of Bond in order to allow store assembly.

*Review of event from a channel perspective**Author experience of the event*

The author took responsibility for the Bonded Wine & Spirits operations in 1986 until 1989. Although, he was directly involved in the Bonded distribution centre operation, it was one of his team who was involved in the technical detail of the project.

*Critique of event on scale of leader – follower*

The retailer was clearly the leader and initiator in this project and had the trust and confidence of the Customs and Excise.

*Revealing hidden evidence more explicitly*

There was, naturally, a great deal of scepticism by Customs and Excise, who were most uncomfortable that the reconciliation was going on inside the retailer's computer system. However, trust was eventually established and the validity of the detail of the duty charges was confirmed.

*Where were the decisions located?*

The development decision lay with the retailer. The authorisation decision lay with Customs and Excise.

*What were the decisions about?*

The decisions were about the detail validation of the duty charges.

*Identify the tensions*

There were tensions between the different parties involved but these were resolved by sharing information in an open way.

*Show the range of choices*

The alternative was to leave the Customs arrangements as they were.

**Characteristic Keywords** (Relevant keywords underlined)

Democracy; Associative; Collaboration; Interdependence; Non-Adversarial;  
Goodwill Trust; Win-Win; Dominant Designer; Specification Buying; Integrative

## Case Studies Category E: International

This final category reflects the author's international fieldwork and experience (Table 7.8).

Ref	Category E: INTERNATIONAL	
7.19	L4	<b>Thailand</b> suppliers of fresh product: 2002 One example of the transfer of supply and logistics skills from UK retail to Eastern Europe and Asia, shaping local temperature controlled supply chains to higher standards
7.20	L1	<b>South Africa</b> fresh product and air freight: 2003 An example of retails' global reach and sourcing using air freight with good chill chain disciplines to create value for the consumer

**Table 7.8 Case Studies Category E: International**

This section takes cases from two continents, Asia and Africa. Tesco has stores in Thailand. The supply chain strategy is to transfer skills from the UK to local management. This case is an instance of a Thai quality assurance manager on a study visit to Tesco UK. The second case is a result of the author's visit to South Africa in 2003. It provides an opportunity to examine an example of global sourcing in the Tesco retail supply chain. It is fresh fruit salad, ready to eat, prepared in South Africa and flown overnight for UK consumers

## 7.19 Thailand:2002

Thailand suppliers of fresh product: 2002

### *An account of the event*

#### *Summary*

An example from Thailand of the transfer of supply and logistics skills from a UK retailer, transforming the local temperature controlled supply chains to achieving higher standards. This is a pattern that has been implemented across Eastern Europe and Asia, when the retailer has taken over and expanded local retail chains.

#### *The background and context*

Tesco moved into Thailand in 1997 by buying 13 hypermarkets from Lotus. There was then a period of rapid expansion so that, by 2002 there were 35 hypermarkets, consisting of 3.8 million square feet, with an additional 15 new stores planned for 2005, which is an annual growth rate of 36%. The country has an average ambient temperature of 25 to 30 degrees. This makes an interesting case study in temperature controlled supply chain, contrasting with conditions in the UK.

#### *The description of the event*

A Quality Assurance Manager for Tesco Thailand Distribution visited Tesco UK in July 2002 to study standards and techniques. The result was two similarities and three major differences. The similarities arise because Tesco Thailand implemented Best Practice from UK secondary distribution. The first point of Best Practice was the building of one composite distribution centre with multi-temperature regimes. The second point of Best Practice was the use of temperature controlled vehicles from this retail distribution centre to make the delivery of products to the retail stores.

There were several differences: the first major difference is that Thailand has a high ambient temperature of 25 to 30 degrees, compared with ambient temperatures in the UK of 10 to 20 degrees. The second major difference is in scale of the supply channel operation. There is only one composite distribution centre in Thailand, whereas there are many in UK. The other aspect of scale is that the average size of suppliers in Thailand is small, whereas in the UK there are some large supplier operations. The third and most significant difference is the requirement to educate suppliers in the disciplines of Quality Assurance Best Practice as developed in UK. This Quality Assurance Manager had a special role.

The role was to put in place a development programme for the suppliers. This programme covers HACCP analysis along the length of the temperature controlled supply chain from producer to retail distribution centre, imposing the disciplines to achieve temperature integrity in the primary transport. The distances involved are much shorter than those in the UK. If these suppliers can achieve a fresh product supply chain, which is fully temperature controlled, then the consumers will gain the benefits that have been proven in the UK.

*The result or outcome of the event*

A successful transfer from the UK of fresh product supply channel skill sets and management disciplines to Thailand for the benefit of consumers.

*Review of event from a channel perspective*

*Author experience of the event*

With permission from Tesco, the author met the Thailand Tesco Quality Assurance Manager, in 2002, at one of the fresh product consolidation centres in East

Anglia. It was a powerful experience conducting the interview with someone who fully understood and knew the Thailand fresh product supplier way of doing things. The manager had a good grasp of the challenge that lay ahead; meeting with the suppliers, explaining how things were done in UK. This interview provided excellent supply channel information about the local context, even though the author had not visited Thailand.

*Critique of event on scale of leader – follower*

This is another excellent example of the retailer as channel captain, transferring skills from the UK to a developing economy. The approach taken was to nurture local involvement and skills in the expectation that new management disciplines would be successfully instilled in the local culture.

*Revealing hidden evidence more explicitly*

It is one thing to make the statement: the UK retailer transfers skills to its new operations in Thailand. It is another experience to meet the person who has come to the UK to visit and learn how these skills are practiced. It shows excellent cultural sensitivity to harness the enthusiasm of a local manager to convey to those local suppliers how they need to change their management practices and change the operational culture of their staff, every hour of every day, to implement an integrated temperature controlled supply chain from the point of harvest to the retail distribution centre.

*Where were the decisions located?*

The decision is firmly with the retailer in Thailand, building on the Tesco track record of implementing Best Practice developed in the UK. The critical question

that faced the Manager on the return to Thailand is the decision making process of the local suppliers.

*What were the decisions about?*

The decisions were about how best to bring about the change in strategy of the fresh product supply channel from the producers to the retail composite distribution centre from the local traditional attitudes to the new Best Practice methods transferred from the UK.

*Identify the tensions*

The tensions would be about local culture and habits. In a hot tropical country, fresh fruit and vegetables are available ready to be eaten straight from the ground or the tree. It is not natural at all to think about a chill chain, let alone doing it with such a degree of meticulous discipline.

*Show the range of choices*

The choice was whether to use a local person or a non-local person in implementing this change in management culture and discipline. The objective is to engage the local suppliers to adopt a channel perspective on their decision making, so they can benefit as suppliers from the anticipated growth in demand for fresh products.

**Characteristic Keywords** (Relevant keywords underlined)

Democracy; Associative; Collaboration; Interdependence; Non-Adversarial;  
Goodwill Trust; Win-Win; Dominant Designer; Specification Buying; Integrative



## 7.20 South Africa: 2003

South Africa, fresh products and air freight: 2003

### *An account of the event*

#### *Summary*

The case describes the daily import of fresh fruit salad from South Africa. It is prepared today and is available, ready to eat for Tesco customers tomorrow. The transportation is by airfreight, with strict chill chain disciplines and effective thermal insulation. It is one example of the global reach and sourcing by modern retailers.

#### *The background and context*

A visit to the various types of fresh food departments in a modern supermarket will quickly reveal, by examining the country of origin, the wide range of products involved in daily overnight airfreight between continents. Daily global sourcing has become routine: mange tout from Zimbabwe, sugar snap peas from Kenya, blueberries from America, vegetables from Thailand etc. What is not so visible to the consumer is the intense activity that takes place in logistics, thermal insulation packaging, maximizing space utilisation and the strict temperature control regimes required for airfreight.

The production takes place at a location close to the airport of departure in Johannesburg, South Africa. The journey continues to the airport of destination, Heathrow and then onwards to the retail shelf for the consumer to purchase. The operators who use airfreight understand the demands of the fast pace of the fresh food global supply channel. They also know how to achieve best practice. The first factor is the maintenance of strict temperature control from producer to consumer. The second factor is the application of the correct packaging solutions for the airfreight of fresh

products. The temperature extremes can range from +40 to –60 degrees. These are the two critical success factors to retain the freshness of the product during its intercontinental airfreight journey. These logistics operations are located in the middle of the supply channel. There is a wide variety of fresh products that pass through their air cargo operations. The range includes fresh fish from Namibia bound for Spain via Heathrow; fresh impala meat steaks from Zimbabwe; fresh vegetables, cut flowers; all from South Africa or neighbouring countries. This is a good location to view the contrasting results of good and bad practice; to see the consequences of low quality packaging insulation and poor temperature control in the packaging of fresh product.

*The description of the event*

In the high care section of the fresh fruit production unit, the component fruits, pineapple, mango, melon, guava, papaya, are prepared by removing the non edible parts such as the outer skin. The fresh fruit is diced into small pieces so that it is easy to serve and consume. The different varieties of prepared fruit are then mixed together in punnet sized consumer packs, sealed and labelled. Throughout this process there is strict quality control to ensure the flavour, sizing and trimming meets the retailer's standards. Once outside the high care preparation area, the exact quantity of consumer packs are arranged in cardboard transport boxes, labelled and sealed. The retail ordered quantities are arranged onto pallets and labelled for their different retail depot destinations in UK, so that the correct quantity goes to each depot daily. The fresh fruit salad is sent that same evening from Johannesburg airport by air cargo to Heathrow, London, where it arrives in at about 5am. The retailers promptly collect the delivery so that it can be on their shelves for consumers to purchase their fresh fruit salad and eat it as a snack on the way home or with the evening meal.

*The result or outcome of the event*

The consumer can choose fresh fruit salad ready to eat direct from Africa. Without global sourcing these products would normally be absent from the UK supermarket shelves for long periods during the year. The work brings employment opportunity to Africa.

*Review of event from a channel perspective**Author experience of the event*

During 2003, the author conducted several field visits in UK, South Africa as well as Mexico and Jordan, on this topic of air cargo and the proper use of thermal insulation and chill chain disciplines. Through these encounters, the author gained the benefit of the advice and wisdom of these operators located in the middle of the value chain of the airfreight supply channel.

*Critique of event on scale of leader – follower*

The retailer controls the whole supply chain in collaboration with the supplier: the specification of the product; the daily quantities to meet consumer demand; efficient space utilisation and thermal insulation packaging. This demonstrates the global span of control exercised by such retailers in the quality of preparation, presentation and air cargo delivery of fragile products.

*Revealing hidden evidence more explicitly*

Standing in the receipt and despatch area of an airfreight operator in the cargo section of Johannesburg airport revealed some interesting information. The effect of inadequate and bad decisions about thermal insulation packaging was costing the suppliers losses through deterioration of their product before it arrived at the retailer in

UK. For example, a £100 pack of impala steak would be ruined for the sake of 30 pence extra spent on proper standards of thermal insulation packaging. The second piece of hidden evidence is the rapid rate of growth in the volumes and value of temperature controlled airfreight business, with growth rates of thirty percent per year. The strong growth product groups are: fresh meat, fish, fruit, vegetables, and flowers.

*Where were the decisions located?*

The decisions at the production and departure segments are located with the suppliers and producers. It is the retailers who decide the pace of the airfreight fresh product supply channel, in response to the demand from their consumers in Europe who wish to buy ready to eat fresh products.

*What were the decisions about?*

The decisions are about the global sourcing of fresh produce, the quality specification for the preparation of the product, the frequency of delivery, the cost of thermal insulation materials and designing the cartons for improved space utilisation.

*Identify the tensions*

The tensions are a direct result of the high risk and degree of deterioration in product quality on arrival at the UK retail distribution centres. The cost is not only to the supplier but also to the retailer in loss of product availability to their consumers, which undermines the consumer confidence that the retailer is building in its Brand.

*Show the range of choices*

There are several choices. The main choice is whether to use airfreight or sea freight. That decision is influenced by the life of the product and whether it is early

or late in the season. Fruit, for examples, will be flown in when it first becomes available, in order to get to the market earlier, to bridge the gap while the sea freight journey is being completed for the main season. For airfreight both weight and cube impact on the cost of transportation. The quality, cost and use of thermal insulation packaging are critical to prevent deterioration to the product from the extremes of temperature, which can be +40 degrees on the tropical airport or –60 degrees during the flight. [Note: The author and colleagues provide a fuller account of the packaging issues and solutions (Gustafsson et al 2006)].

**Characteristic Keywords** (Relevant keywords underlined)

Democracy; Associative; Collaboration; Interdependence; Non-Adversarial; Goodwill Trust; Win-Win; Dominant Designer; Specification Buying; Integrative

## 7.21 Summary

The author has chosen this multiple case study approach in order to illuminate parts of the retail supply channel that would not normally be visible to retail commentators. As mentioned earlier, some of these case studies are based on the personal experience of the author in which the author felt directly the power of the change management dynamics taking place. For some of the other case studies the author was in close contact with other persons in the organisation and supply channels who had stories of their own that are worth recounting and so were included here.

This Table 7.9, identifies the relevance of characteristic keywords in each case, where they were underlined. The ten key words were: Democracy, Associative, Collaboration, Interdependence, Non-Adversarial, Goodwill Trust, Win-Win, Dominant Designer, Specification Buying, and Integrative. Some of these keywords have a

meaning in ordinary language. However, the use of the selected keywords comes from specific academic backgrounds, which defined their meaning here and will help the analysis in the next chapter.

Case Study number	Democracy	Associative	Collaboration	nterdependence	Non-adversarial	Goodwill Trust I	Win-win	Dominant Designer	Specification Buying	Integrative	Key Characteristics
7.x	1	2	3	4	5	6	7	8	9	10	T
1								X	x		8
2								X	x		8
3				x				X	x		7
4								X			9
5								X	x		8
6								X			9
7								X			9
8								X			9
9								X			9
10								X			9
11								X			9
12								X	x		8
13								X			9
14								X			9
15								X			9
16											10
17											10
18									x		9
19				x				X	x		7
20								x			9
<b>Total</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>18</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>3</b>	<b>13</b>	<b>20</b>	

**Table 7.9 Key Characteristics: Analysis of the Cases**

This is intended to assist the process of extending academic knowledge by building on the insights provided by this series of case studies. They are documentary accounts of real events that actually took place. They are neither models nor hypothetical scenarios. They are insights into reactions from the middle of the value chain and the dynamics involved. They are presented here for others to build on. One academic link is through the selected characteristics represented in the keywords.

It is intended that each case study is judged on its own merits. They will be subjected to whatever method of critique others choose to apply. It is intended that the contribution of these inside stories from the case studies add a depth and richness to events that were visible to outside observers. These insider experiences should show that supply channel relationships can and do follow the norms of good business relationships. What conclusions, then, can be extracted from this series of case studies; what might be the outcomes from this research? It is this to which we now turn in chapters eight and nine.

# Chapter Eight

## Analysis of Case Studies



## 8 Analysis of Case Studies

### 8.1 Introduction

The thesis, so far, has considered aspects of leadership and change in retailing, retail logistics, the supply channels, managing supply chain change, and provided a series of small case studies based on real events. This has created a basis to assess those case studies against that range of theories on leadership and change. In order to do this the analysis and assessment can be presented at five levels. First, is the Literature Link between the earlier theories and the categories used in the analysis. Second, a Generic Case Analysis, from theories that apply to all the cases are best presented as a generic application. Third, investigates Competing Explanations for leadership. Fourth, the Specific Case Analysis drawing out the learning from the real event cases. Fifth, the Channel Captain Ideal role and style as a best practice or model. The chapter concludes with a summary and link to the final chapter nine.

### 8.2 Literature Link

The cases were assessed alongside benchmark keywords, Table 7.9, from the literature on managing supply chain change in chapter six. The table shows a high correlation between the academic literature concepts of ideal supply chain leadership behaviour and the style of leadership demonstrated through the real event case studies. This provides a sound base for constructing a scale of Leader – not a Leader Roles, Table 8.1, linked to this academic literature. Using that measure it is possible to identify the profile of leadership demonstrated in these case studies.

In order to start the review it is good to ask the question: is there a leader? Earlier, various options were discussed for the presence or absence of one or several

supply channel organisers. If there were several organisers, were they suppliers and retailers and were they acting in harmony or as rivals? That led to the classifications: Joint Leader and Rival Leader. For each case study presented in chapter seven, the author has made an assessment on the scale of leader – not a leader and provided a classification of the various roles along this scale, which come out of the thinking developed in chapter six on managing change. The language selected is chosen deliberately to facilitate use in the practitioner business environment.

<b>Code</b>	<b>Title</b>	<b>Description</b>
<b>BD</b>	Benevolent Dictator	Dominant company dictates policy to channel partners, but in a pleasant style. Stock (2003) Autocracy (Mallen 1963) Acts without conferring
<b>CL</b>	Collaborative Leader (with channel partners)	Leader is collaborative with channel partners using joint solutions to achieve joint business goals. Democracy (Mallen 1963) Associative (Dawson 1990) Collaborative Partnerships (ECR 1996) Collaboration (Spekeman 1998) Interdependence (Porter 1980) Non adversarial (Lonsdale 2002) Win- win (Glaser and Glaser 1991) Integrative (Kanter 1984) Goodwill Trust (Hines 2004) Strategic Alignment (Gattorna 1998) Channels Compete (McCarthy 1981) Situational Leadership (Hersey 1977) Function to Process (Christopher 2003)
<b>DD</b>	Dominant Designer	Company dominates design strategy Koehorst (1999) Specification Buying Kelley (1953)
<b>JL</b>	Joint Leader (with other channel organiser)	Leader works collaboratively with other channel organiser to achieve joint goals Associative (Dawson 1990) Collaborative Partnerships (ECR 1996) Collaboration (Spekeman 1998) Integrative (Kanter 1984)
<b>RL</b>	Rival Leader (with other channel organiser)	Leader acts as rival with competitive other organiser to achieve channel goals Anarchy (Mallen 1963)
<b>CP</b>	Collaborative Partner	Company willingly collaboratively with leader or deliberately using follower strategy Associative (Dawson 1990) Collaborative Partnerships (ECR 1996) Spekeman (1998) Integrative (Kanter 1984)
<b>RP</b>	Reluctant Partner	Company complying with leader policy reluctantly, against their better judgement Subdued conflict (Mallen 1963)
<b>B</b>	Blocker	Company not cooperating with channel partners or leader Anarchy (Mallen 1963)

**Table 8.1 Scale of ‘Leader – Not a Leader’ Roles**

In the summary, Table 8.1, each of the behaviour types is referenced to academic related categories from earlier in the thesis and summarised in Table 7.9. This supports the work with a continuity of thinking, some going back fifty years to the roots of the concept of channel captain in American early marketing literature. The actual titles selected by the author are an extension of the earlier literature. They strive to bridge the language gap between academic terminology and practitioner business use.

The list begins with the Benevolent Dictator style of leadership in which the dominant company dictates policy to channel partners, but in a pleasant style. There could be various forms of expressing this: “just do it, please”; “do not give us the problems why you cannot do it, it is your job to find the solutions”; “that is what we want done, take it or leave it”. It can be, hands off, provocative, even brutal, but effective. The next category is Collaborative Leader; here collaborative is related to the other channel partners. There is a recognition of dependency on each other’s skill sets and operational performance. There is also an assumption that the partners are acting in good faith and have encountered genuine obstacles if they have a performance problem. A critical difference is that the leader company is open to their own role in unlocking solutions, by changing their own policy or procedure. The third category is the Dominant Designer, which is the company that is driving the design strategy and has achieved a solution that works well and can be applied more widely. Next is the role of Joint Leader with another channel organiser. The two are acting in harmony, without being competitive in an adverse manner. The other channel parties see the channel policy that is agreed as coherent. The opposing role is that of the Rival Leader with another channel organiser, where the two companies see themselves as having conflicting objectives that are being opposed by the other leader in the same channel. The policy and procedures are being pulled in different directions, usually to the

disadvantage of the whole channel and its partners. These first five categories are variations on the predisposition of the channel leadership to behave in a certain manner.

The next group relates to those companies in a partnership role. First is the Collaborative Partner, a company, which has faith in the channel leader and is compliant and positive about following instructions and policy. The other way of being a Collaborate Partner is that of a company, which deliberately applies a business strategy of waiting to see what others are doing before deciding what to do. One benefit is that the company lets others spend the money and resources on development and then copies solutions that are proven to be successful. The next category is the Reluctant Partner that is complying with the leader's policy reluctantly, possibly against their better judgement. They may have put forward an alternative to the policy and failed to persuade the others to see it their way. Finally, at the end of the scale 'leader – not a leader' is the Blocker, the company that does not want to cooperate with the channel partners or leader on a policy.

Code	Case study ref. 7.X	Description
BD		Benevolent Dictator
CL	1 2 3 4 5 6 7 8 9 10 11 13 14 15 19	Collaborative Leader (with channel partners)
DD	16 17 18	Dominant Designer
JL	12 20	Joint Leader (with other channel organiser)
RL		Rival Leader (with other channel organiser)
CP		Collaborative Partner
RP		Reluctant Partner
B		Blocker

**Table 8.2 Scale of 'Leader – Not a Leader' Roles: Case Studies**

Those case studies relating to Tesco as the major UK retailer from chapter seven have been evaluated along the scale 'leader – not a leader'. The results, Table 8.2, not surprisingly, reflect the author's selection of cases. It is worth explaining why.

There was a huge range of events from which to choose. Colleagues in different functions or different companies were involved in many excellent instances of supply channel leadership. But these events would be available to any researcher who was able to gain access to these colleagues and conduct an appropriate interview. However, the author has adopted a policy to select those events, which were examples of retail leadership in the supply channel that he himself experienced directly or knew about closely. With these events, the author can write about the events, and convey how it felt to be involved at the time, in order to share the internal experience as well as the external evidence.

The cases were selected to demonstrate retail leadership in the supply channel. Some cases are taken from the retail logistics segment of the supply channel, which is from the distribution centres to the retail store delivery. Other cases are taken from the supplier segment of the supply channel, which is from the producer or supplier into the retail distribution centres. There is also a direct supplier to retail store supply channel for specific products both ambient and temperature controlled. As the author was not directly involved in this direct supplier to retail store channel, none have been included here. The results as shown are: none appear as Benevolent Dictator. There is a cluster, fifteen, in Collaborative Leadership; the technical cases are three examples of Dominant Designer; there are two for Joint Leadership; there are none for Rival Leader, Collaborative Partner, Reluctant Partner or Blocker. However, this classification on its own does not explain the next obvious question that arises, which is: how might the various leaders behave in different situations with the different types of partners in the supply channel? This is the subject of the next section 8.3.

### 8.3 Generic Case Analysis

There are some theories described in chapter five on managing change that will help with thinking about different relationship styles and how they impact on the received experience of leadership behaviour. These five theories are: strategic alignment; whole channels compete; the situational leadership model; the negotiation styles matrix; and the model of the integrative and the segmentalist companies and supply chains.

How can these different theories help here? The first theory of strategic alignment, Figure 5.2, applies as a basic premise for all the cases. The strategic benefit of supply chain change is only realised when the business strategy and the supply chain strategy are in alignment. The second theory that whole channels compete, Figure 5.3, has a long marketing history. It demonstrates the value of a cohesive channel linked to the consumer. The third theory, Situational Leadership, Figure 5.19, provides a way of thinking about interrelationships between managers and staff, which can be applied more broadly to the relationships between companies in supply channels; the fourth theory, the negotiation matrix, Figure 5.20, explores the different positions and attitudes that can occur between parties during negotiations; and finally, the theory of integrative and segmentalist models, Figure 5.24, touches on culture and style within companies as well as supply chains. Each of these in isolation can help us to understand different approaches to the variations that can occur in relationships. When these theories are used together, they can complement each other and provide a richer set of tools to analyse the different relationships.

### 8.3.1 Situational Leadership

The situational leadership model, Figure 5.19, is normally used to help management develop a range of styles in order to deal with different staff in a manner that is appropriate for the staff's attitude and skill level. These can vary according to the particular task that the member of staff is being required to do. However, rather than thinking only about individual people, this model can be extended to the companies that are working together in a supply channel.

There can be a variety of styles in the relationship. The style chosen could depend on the task that needs to be done as well as the attitude of the company and the skills the company possesses. This is taking the variants of the model, which was used for individuals, and applying them to companies. The question that arises concerns the suitability or appropriateness of the choice of style expressed in the business relationship. Sometimes the choice is good and effective, sometimes the choice is not suitable and the result is unsatisfactory. How then, would it feel to the company on the receiving end? That would depend on matching the right style to the situation. If the appropriate style is chosen, then it should be expected that the company on the receiving end would experience this in a positive manner. If an unsuitable style is selected, it is probable that the company on the receiving end will have a negative experience and react accordingly. The situational leadership model implies that one style alone does not suit all parties or circumstances. This is one factor to examine in the relationships between companies in the supply channel.

It is worth re-examining some of the case studies with this perspective in mind, using the guidance from Table 5.1 on situational leadership styles. At the risk of repeating some of the detail, a good case to revisit is the frozen food channel, case 7.9.

It began in more of a Benevolent Dictator style. In the situational leadership model, that would be described as a Structuring Style, (Style S1); in which one party is telling the other party exactly what to do and how to do it. Given, further, that the previous companies were not performing adequately, they were moving backwards on the movement curve on the model; disaster was about to happen unless drastic action was taken quickly. That style of approach was a result of the dire situation of the earlier frozen food distribution network. So, in this instance, it is not unreasonable for a Collaborative Leader to act in a Structuring Style with a non-performing partner. That partner might experience that relationship as a Benevolent Dictator style; and may be not so benevolent if the company was about to lose the business. The case study described an earlier way of working, which was in the business of 'intervention' with its mountains of butter and beef, in frozen storage business. Those earlier operators were definitely in the Reluctant Partner or even Blocker mould. There was little choice but to isolate them and move on with a new set of management and staff or new set of companies. Once that difficult process was completed the style was decidedly Collaborative Leadership. In what way was it different? What was different was the style of relationship that was chosen.

The management of the logistics service providers, case 7.14, who had been successful in obtaining the new business, had to go through a steep learning curve. Even though they were Collaborative Partners, they could not just be left to their own devices to find their way forward and achieve what was expected of them. A Delegated Style, (Style S 4) was not appropriate. Interestingly enough, there were people on both sides who thought it should be. But those with accountability within the retailer were not so willing to let go so easily. That situation itself is worth a reflection because it shows how companies self perception of their skills and expertise conditions how they



expect to be treated. Where the management of a company holds the view that the company has all the skills, in both management and staff, to perform the task, they expect to be in a Delegated Style relationship between the two companies. This is fine if both sides know that to be the case. However, the other company, already experienced in this type of operation, may make the judgement that the newly appointed company needs a period of time to learn the skills and develop an efficient implementation of the process and during that time a variety of support and a closer level of monitoring performance. This might be an Encouraging Style (Style S3) or even a Coaching Style (Style S2). The gap between how one company wants to be treated and how the other company views it needs to be treated will lead to a Collaborative Leader being experienced as a Benevolent Dictator, probably expressed as over interfering and over controlling.

The point has probably been made and so there is no need to elaborate further. In fact it could make an excellent workshop to set up groups, some of whom choose appropriate styles and others who are misled through their instructions and adopt totally unsuitable styles. The verdicts of those receiving the different styles would be very different. The classification of the role in the supply channel and the respective style can therefore be expressed in very different ways, depending on the received experience as much on the intentions of the party driving the business relationship.

### **8.3.2 Negotiating Style**

The next model, Figure 5.20, concerns the selection of the appropriate Negotiating Style for the relationship between the two companies. The first influence is the type of negotiation relationship from open market through to collaboration, Figure 5.13. It could be assumed that a Collaborative Leader would have a company culture

and a negotiating team, which would choose, as its preferred style, the Collaborate Style (Style N2) in its dealing with the other partners in the supply channel. The same types of mismatches could occur with negotiating as with the choice of style in the Situational Leadership Model. A company or its representative may choose a Defeat the Opposition style (Style N1) Figure 5.20, in which the lead company takes everything they can get without any concession to the impact on the other company; in other words an exploitation of their scale and power position, without considering the continued viability of the other company.

The choice of an inappropriate negotiating style could be the preferred style of the lead company in which case, that would then define its classification; for example, whether it is in the style of a Benevolent Dictator or Collaborative Leader. To take another example from the case study on the potato supply channel, case 7.1, where the buyer was an experienced mature manager with a long relationship with the six major suppliers, mentioned in the case study. These suppliers agreed to make changes in staffing shifts in order to continue assembling the product after the confirmed order had been received and so deliver the product into composite distribution in the agreed earlier time window of 08:00 to 17:00. There was a negotiation aspect to this agreement. The buyer had a choice of negotiating styles to pursue; collaborative, also known as win – win; or defeat the opposition at all costs; for example: we do what we want and they absorb the extra cost. The buyer chose a collaborative negotiating style, Figure 5.20 with the skill sets of Figure 5.21. It was clear that the six potato suppliers felt that the end result was collaborative. The point about choice of negotiating style probably does not require any further elaboration here.

### 8.3.3 Integrative and Segmentalist

The third model is about integrative and segmentalist companies and supply channels, Figure 5.24. From this framework the case studies can be examined in terms of the classification of the companies and supply channels involved. The strawberry supply channel, case 7.5, preparing for the Wimbledon tennis championship is an illuminating case to examine in this context. Clearly the conditions that gave rise to the concern in the first place suggest that the supply channel was segmentalist, with each company doing its own part to the limit of its circumstances. As was illustrated in the sharing of the issues by the different parties at the start of the meeting, each company was experiencing a barrier or obstacle not of their own making. But no company in isolation was able to resolve the difficulty or remove the barrier or obstacle; that had to be done by another party in the supply channel. Some of the individual companies were in a segmentalist or silo management culture; others were in an integrative or multi team sharing culture. Whatever their own culture, there was a great deal of frustration being experienced in each and every company. It was self evident to each of the parties that disaster as normal was the likely forecast for the impending peak season during Wimbledon tennis championships. A state of anticipated depression hung gloomily over each department in each company: there will be the usual catalogue of difficulties; late collections, product shortages, last minute order adjustments: “no surprise it will not go well”.

In this type of contrary situation, it requires a good quality Collaborative Leadership style to approach this impending crisis in the open and trusting style that was exhibited in the case study. All the parties were Collaborative Partners. The successful resolution of so many issues, difficulties, obstacles and barriers, transformed the supply channel from segmentalist to integrative. There was a huge shift in

effectiveness that was demonstrated by the resounding success of continuous supply of Strawberries and new levels of sales not seen before. The perceptions and experiences of the teams involved, and the nature of the feedback that was shared, also influence this. The talk would have been about the great sales figures, or that “at last they got their act together”; rather than commenting on the achievement of creating an integrative supply channel in place of the earlier segmentalist supply channel.

In this section, three different models have been applied to ways of assessing the nature of the supply channel relationships. Some of the case studies have been used to illustrate the various points. The overall direction of the debate is that classification is a function of the person or company making that judgement. Their judgement being strongly influenced by their experience at their end of the relationship rather than what might have been intended by the other party, who may or may not have chosen the right or the wrong approach for the relationship and business goals at the time. This leads onto a further question, which is about the competing explanations for supply channel organisation and dynamics.

#### 8.4 Competing Explanations

There are competing theories for explaining or advocating different models of behaviour in supply channels. They can be polarised into Always Adversarial (Mallen, Anarchy) and the opposite view of Collaborative Colleagues (Spekeman, Collaboration). Both relate to the use of power in business relationships but neither deals with those relationships from the particular perspective of the presence of a channel captain. The presence of a channel captain requires that the role takes on leadership of the team. Although the members of the team have various skills they are not all equal when it comes to leadership. Both the Always Adversarial wing and the

Collaborative Colleagues wing of the debate would probably challenge the classification Channel Captain, but for different reasons. An Always Adversarial view would be that Benevolent Dictator is about as good as it gets between a large powerful company and any of its suppliers, large or small and that the term Collaborative Leadership is a euphemism for manipulation.

Equally the term Channel Captain or Collaborative Leader would generally be considered an inappropriate term to use in the Supply Chain Management or Supplier Collaboration context, where the emphasis is on collaboration between partners, each of whom has a valuable contribution to make. The differences in scale and power between the partners in a supply channel is so obvious that using terms such as channel captain is not conducive to creating an atmosphere of respect and collaboration in a relationship. Probably, both views would find difficulty in accepting the term Channel Captain as a classification that should be included in their model or theoretical structure, because it is naïve, simplistic or outdated thinking. The view could also be that it does not add anything to today's academic thinking to pick out a turn of phrase, channel captain, that was in use for only a short period in American marketing channel literature and applied primarily to national manufacturers dealing with regional wholesalers and retailers. They might ask the question: why apply it to the large modern retailer in a very different business and economic setting? That is a question to which we will return.

The adversarial – non-adversarial polarity is projected in the model on supply channel relationship in Figure 5.17 (Lonsdale et al, 2002). Here the four quadrants identify the different types of relationship between companies based on two dimensions: the share of the value created on the Y axis and the nature of the interaction on the X axis. If the share of the value created is unequal the relationship is adversarial;

but if the share of the value created is equal then the relationship is non-adversarial. If the nature of the interaction is limited then the relationship is arms-length, but if the nature of the interaction is extensive then the relationship is collaborative

The next question that arises is how to move from one quadrant to another, to move from being in an arms-length relationship to a relationship based on more lasting qualities such as goodwill trust in Supply Chain Management in Figure 5.18 (Hines, 2004) an explanatory model of integrated supply chain management. As described earlier this model seeks to plot a route through from the frequent start point to the reach the desired relationship by moving from contractual trust through competence trust to the goal, which is goodwill trust. One of the key behaviours that is required of the dominant player is to show some self discipline, to exercise restraint, or withhold power, by not taking unscrupulous or opportunistic advantage of the weakness, smaller scale, or powerlessness, of the other party, case 7.3: St Peter's Fish. This expresses well one of the qualities required in any dominant party in a negotiation or relationship. It could be applied to the role of Channel Captain.

This brings the debate to a different level, which is set out in the power and competition analysis model, Figure 5.16, (Porter 1980). It is about the broader influences on whether it is the buyer or supplier that has dominance rather than a relationship of independence. The conclusion of the model is that it is only when the buyer and supplier are equal that there is inter-dependence. That may not move the debate forward directly in terms of explaining the role of the channel captain but it provides some criteria that drives the level and ownership of dominance in the buyer – supplier relationship. In the factors influencing supplier power resources there is a section on 'competition in existing supply market'. It asks these two questions: is there

a clear market leader and if so, how long is their lead likely to last? And if there is no clear market leader, does the supply market collude or compete? Although the model is about single companies competing it is easy to apply it to supply channels competing. So the term market leader is not far removed from using the term channel captain. The power of the channel has an impact on the strength of the market leader: the stronger the channel, the greater the strength of the market leader. As the market leader grows their business so the other members in the channel benefit.

## 8.5 Specific Case Analysis

The behaviour of different companies in their relationships with each other in the supply channel is a complex topic. This is summarised in Tables 8.1 and 8.2, which classify the different styles of leadership behaviour. The main group of fifteen cases is in the category of Collaborative Leader. This is the dominant style of the Tesco retail team in achieving the various supply channel goals. The cases in this category are further grouped into three subsets, which examine the strategic, tactical and operational levels of supply chain change. These subsets are titled: channel restructure (8.5.3), channel capability (8.5.4) and channel enhancement (8.5.5).

There are two smaller groups in the categories of Joint Leader and Dominant Designer. The analysis begins with these two categories. They are close in terms of style of behaviour because they represent circumstances when the retailer is dependent on another party for development ideas and implementation to drive the business forward. In order to reflect this closeness in behaviour style, these have been entitled in their sections here: Joint Leader: Channel Development (8.5.1) and Dominant Designer: Technical Development (8.5.2).

### **8.5.1 Joint Leader: Channel Development**

The first group consists of two cases studies demonstrating Joint Leadership in channel development. These two cases investigate supply channels in the process of development and in which the retailer, suppliers and logistics service providers, are acting as Joint Leaders. Each party is bringing some unique expertise to the design or implementation of the channel that the retailer does not possess. The two case studies examine real scenarios and events in two very different circumstances. The first is taken from a very early phase in the Tesco supply chain change in the 1980's. It is the relationship between Tesco and the logistics service providers in shaping the supply networks in the decade before composite was implemented, case 7.12. The logistics service providers, who were involved in the retail distribution supply network pre-composite distribution had knowledge, capability and skill-sets that the retailer did not possess at the time. They acted as Joint Leaders during that early pre-composite period and so achieved three benefits. First, they enabled Tesco to restructure its logistics network from the earlier setup organised by the suppliers. Second, this provided an enhanced service to retail, which was growing strongly at that time with the implementation of the superstore format. Third, it reduced the risk of a collapse in the service to retail during the transition into composite itself.

The second case is an example of the implementation of global sourcing and is taken from a field study conducted by the author in 2003. It is the supply from South Africa of fully prepared, ready to eat, fresh fruit salad that is flown into the UK overnight by air-freight, case 7.20. The Joint Leadership is between Tesco and the supplier, who implemented a new method of maintaining the integrity of the chill chain from the factory in Johannesburg to Heathrow. What was radical was the use of dedicated small mobile refrigeration units to hold the pallets while waiting, often in



intense heat, to be loaded on to the aircraft. The second initiative shown by the supplier was the redesign of the transport packaging to reduce the amount of air cargo space required. This South African fresh product supply chain involving air freight was a Joint Leadership between Tesco, who wished to source globally and the local supplier, who knew how to make the temperature controlled air freight portion of the supply channel work effectively.

In summary, the retailer may direct the strategy for sourcing and the supply chain but the suppliers and logistics service providers are acting in harmony with the retail strategy as Joint Leaders. They are more than Collaborative Partners. Their leadership and unique skill sets are essential to the design and practicality of the retailer's sourcing and supply chain strategy.

### **8.5.2 Dominant Designer: Technical Development**

The Dominant Designer style of leadership is demonstrated through case studies of technical development. They demonstrate leadership in areas of expertise that might not be associated with a retailer. Each of these topics; Trailers 7.16, Plastic Trays 7.17 and Bond 7.18, helped to shape the Tesco retail supply channel in a unique way. These technical successes were the result of different creative genius within the retailer, who had a clear vision about the specification required in their design and functionality. Normally, the supplier's technical design team provide the core ideas. In each of these examples, it was the Tesco expert, who was demanding a solution to a specific design requirement that the suppliers initially judged to be unattainable. However the Dominant Designer style of leadership has aspects that are close to Benevolent Dictatorship and the authority of the Main Board was applied to gain the full response from the suppliers. Nonetheless, all three case studies had a prevailing style of

Collaborative Leadership between the retailer and product suppliers. It was up to the supplier to find the technical solution for the product that match the design demands of the retailer. The solutions were ground breaking within their respective industries and later gained widespread application in different companies. This role reversal is unusual and it included in the set of case studies because of its importance in demonstrating the leadership role of Tesco in supply chain change.

The main grouping of fifteen cases, Table 8.2, was in the category Collaborative Leader. These are analysed in three subsets relating to the strategic, tactical and operational levels of retail supply chain change. The first is channel restructure, 8.5.3; the second is channel capability, 8.5.4 and the third is channel enhancement 8.5.5.

### **8.5.3 Collaborative Leader: Channel Restructure**

This section, Collaborative Leader: Channel Restructure, examines four cases at the level of strategic change within the retail supply chain. These four cases were conducted in a Collaborative Leadership style by the retailer team. An examination of these strategic developments demonstrates the large scale and wide scope of the retail strategy in shaping the retail supply channel

The chilled product supply ‘at the right freshness’, case 7.7, demonstrates the dramatic effect of the retail supply strategy of centralising chilled product. It implemented a new level of discipline in temperature control along the full length of the supply channel, from the producer or supplier through to the retail store. As the case study reports, the growth in chilled product was faster and greater than expected or anticipated. It was an outstanding success. This was at a time when the consumer was

very conscious about healthy eating and wanting to buy fresh fruit and vegetables. It was also a time of increasing travel by consumers so they wished to buy product they had purchased when on holiday abroad. The timing of the composite strategy implementation, in 1989, combined with the whole supply channel temperature control disciplines to accelerate the consumer switch, for example, away from the local greengrocer. The superstore retailer produce department was located right at the front of the store entrance to attract consumers with the fresh produce and enable them to get quickly involved in the shopping task. The model became a benchmark for other retailers to follow over the next decade. This trend illustrates that the strategy was successful in growing the business not only for the retailer but also for the producers and suppliers. It was a successful channel to get involved with, which helped to promote the collaborative style of channel leadership. It was easier for the suppliers to make a channel decision and work with the retailer in implementing the new disciplines of the the temperature controlled supply chain. This case contains many collaborative characteristics that are shared with the next case on supplier logistics.

Supplier logistics, case 7.8, which started in 1990 with fresh produce, is a strategic restructure of the relationships within the supply chain. The Tesco team dedicated to the inbound supplier logistics got involved with the detail of individual suppliers, their products, and their arrival times at composite distribution. The team set out to learn about the particular circumstances facing the suppliers. They examined the issues that needed to be unlocked in order to smooth the flow of chilled product along the supply channel from producers to composite distribution and so onto the retail stores. It was a collaborative leadership style. Eventually, the practices became embedded in the supplier operation and the role became part of the commercial buying function. The first phase was focused on fresh fruit and vegetables. There was a

second phase of this programme, which was the rollout to other product groups, such as, fresh meat and poultry, and chilled provisions. This was conducted with the same collaborative leadership involvement by the supplier logistics team.

In 1994, the policy evolved into primary distribution and by 2000 into 'factory gate pricing'. Primary distribution was structured to include experienced staff from commercial buying, supply chain and distribution operations. Their joint contribution was effective in reshaping the supply channel from the supplier to the distribution centres. The scale of the operation was large. In response to this reorganisation, parts of the industry objected to the retailer taking control over the inbound transport. This reaction raises a question about the effect on the other parties of being led in this way. A question that will be referred to later under topics for further research.

The next case study examines the strategic restructuring of the frozen food channel, case 7.9 in the mid 1980s. As noted in section 8.3.1 this case had an early phase, which was negative. Once that difficult phase was completed, the style switched to that of Collaborative Leader working with Collaborative Partners. It was out of that collaborative leadership style that the new frozen distribution centre operations, even though they were working in old converted buildings, were soon developing through their steep learning curve and operating well. It was an evolutionary process. Quickly, the skills became embedded in the operation and the service to retail had taken a step change improvement. One final benefit of this collaboration was that transfer into Composite was a seamless transition in service to retail.

This section concludes with an International case study demonstrating the supply chain change strategy of Tesco as it transfers Best Practice between the UK and its operation in Thailand, case 7.19. The Thailand fresh produce supplier development is a good example of the internationalisation of the ways of working of the retail supply channel. Tesco had chosen a local Thai national, who was a Quality Assurance Technical Manager to visit the UK fresh produce operation in 2002. The objective was to transfer those skills back to the suppliers in Thailand. The attitude of the manager was in tune with a collaborative leadership approach to the suppliers. Those suppliers were about to experience a step change not only in their standards but also in the culture of their workforce. It is not easy to transpose operating disciplines from one culture to another. But the manager informed me that the suppliers were Collaborative Partners, motivated to comply and learn a different way of conducting their operations. It was important to the retailer that the supply channel was improved and enhanced to high standards. It is a policy that Tesco has continued to implement as it establishes the infrastructure for its international operations in countries outside the UK.

#### **8.5.4 Collaborative Leader: Channel Capability**

There are five case studies in the Collaborative Leader: Channel Capability category. These cases examine the tactical level in supply chain change. They each have similar processes and outcomes although they are set in very different operating environments.

The open book accounting case study, 7.15 introduced a step change in the contractual arrangements in distribution with the various logistics service providers. Reaction was mixed. to the Tesco contract distribution team began with the Collaborative Partners and then persisted determinedly with the Reluctant Partners

without crossing over the line to Benevolent Dictator. All were performing well as distribution operators, so it was appropriate not to be create animosity over a change in accounting policy. Once the logistics service providers had made the transition and experienced for themselves the reduced financial risk and flexibility of open book accounting, the relationship settled down. The practice became embedded and later on the policy was used by the logistics service providers for their other contracts.

Logistics service providers, case study 7.14 experienced a changing role with Tesco during the period before and after the implementation of composite distribution. Prior to Composite the logistics service provider, e.g. for fresh meat and poultry, was a Joint Leader of the supply channel. They had expert knowledge about the distribution of fresh meat and poultry and in particular the control of the variable weight invoicing. This was at a time when centralised buying of fresh meat and poultry was just being implemented in the retailer. After Composite, the logistics service providers were Collaborative Partners rather than Joint Leaders (8.5.1). The retailer provided the thought leadership on the composite strategy and operations. The logistic service provider managed the operation itself. They did a good job. The relationship was transformational not just transactional, they gained and evolved and developed their expertise. Then, having learnt the skills and sent their best young managers into composite, they were able to export those skills to their other contracts and so become Collaborative Leaders with those other retailers in similar operations.

The next pair of cases in Collaborative Leader: Channel Capability are in retail logistics. The first is in the ambient sector, case study 7.11, investigating the improvements in warehouse productivity in fast moving grocery distribution operations. The second is in composite, case 7.13. It examines the action taken to increase the

throughput capacity without adding additional distribution centres. Both of these cases are internal in content. They are not that visible to the external observer but they are very much part of the shaping of the retail supply channel at the level of tactical change. They each increased the capability of their category of the retail distribution network. They were conducted in Collaborative Leadership style. Some of the change was internal with the operational management and staff. Other aspects were external, such as the inbound transport from suppliers and the outbound transport to the retail stores. The external partners experienced changes in their operation, procedures and an increased tempo in the supply chain. It was all implemented in a collaborative style.

The final case, 7.10, of tactical change in channel capability was also conducted in a Collaborative Leadership style. It investigated the process of implementing a policy of the integrated supplier collections by the retailer. This saved money for the supplier, it gained revenue for the retailer distribution operations and most importantly it helped the environment. It was held up by the Department for Transport, in 1997, as a Best Practice example for others to follow. It is a model that is now applied by other retailers.

These five cases complete the set of examples of tactical supply chain change. They build on the examples of strategic change, 8.5.3, and demonstrate that Collaborative Leadership style can operate at all levels of change. The final level is the operational change and the next section 8.5.5 investigates and analyses six cases.

### **8.5.5 Collaborative Leader: Channel Enhancement**

This section on Collaborative Leader: Channel Enhancement, examines cases at the operational level of retail supply chain change. These six cases, 7.1-7.6,

study the detailed operational interaction between the different parties in the supply chain. Each case investigates a supply chain change for a specific product group: potatoes 7.1, bananas 7.2, St Peter's Fish 7.3, fresh meat & poultry 7.4, strawberries 7.5, and iceberg lettuce 7.6. The significant facilitating role in each of these cases is taken by the commercial buyer, who is regarded by the company as owning the relationship with the suppliers. However, the manner of conducting this role had changed.

Traditionally, the buyer would meet up with the supplier's representative face to face, on their own. There would be no representatives from other functions. If distribution operations had an issue with a supplier's delivery performance, they would pass it to depot stock control, who would pass it to commercial if it needed escalating to a higher level. The buyers did not see their role as needing to get involved in distribution issues. They could take an attitude that it was "down to the suppliers to sort themselves out". This left the local distribution centre operations feeling isolated, which is typical of a silo management culture. However, by the date of these case study events, the policy of the commercial division was changing to a more internally collaborative approach (Grant Interview 1995). It was becoming more inclusive and buyers would invite representatives from other functions to participate in the supplier contact. In each of these six product case studies, colleagues from other functions accompany the buyer: quality technical assurance, stock management, distribution operations, and logistics.

There were sizeable changes required in these case studies: for the potato suppliers, changing their shift patterns; for the banana supplier, changing their transport schedules; for the St Peter's Fish supplier, fitting in with the retailer's collection arrangements; for the fresh meat and poultry suppliers, changing their transport



operators; for the strawberry suppliers, changing the operation to achieve regular punctuality for collections at a time of peak volumes and pressure; for the iceberg lettuce suppliers, changing their loading and delivery patterns to dedicate the vehicles to specific retailer distribution centres. All of these events were conducted in a style of collaborative leadership by retail with the collaborative partners in the supply channel. This comes across clearly in the detail of case studies. The retailer was driving the strategy, achieving increasing control along the length of the supply channel, getting involved in the detail of the operation by employing staff in their teams, with the right expertise and experience. The benefit of this collaborative style was that operational practices and skills were developed and embedded in the daily task. It transformed the supply channel to a level of competence so that larger and larger volumes of product could be moved quickly and effectively. It created efficiencies of scale. And it is this scale that benefits the consumer as well as the producer and the retailer.

This section concludes the analysis of the specific cases documented in chapter seven. In turn it has examined the minor groupings of Joint Leader and Dominant Designer and then the three subsets of Collaborative Leader. These are at the different levels of supply chain change: strategic, - channel restructure; tactical - channel capability; and operational - channel enhancement. This provides a full range of analysis with specific information based on real events. It creates a foundation from which to examine the ideal behaviour profile of a retailer acting as channel captain in retail supply chain change.

## **8.6 Channel Captain Ideal Behaviour.**

The question that arises: is there an ideal profile of the style of behaviour of a channel captain? There is probably sufficient material to provide an ideal profile of

behaviour using the theories and models supplied earlier. The most influential of those models is that concerning Situational Leadership. The core belief underpinning that analysis is that a leader is best served when a range of behavioural styles are available, from which to select that which suits the task, ability and attitude of the other party. This in itself is a valuable conclusion. An idealised profile of the style of behaviour of a channel captain is precisely the possession of that range of relationship styles.

The second major area of contact between channel members is that of negotiation. The preferred negotiating style that has the highest rate of achieving good quality agreements is the collaborative, win – win style. The model includes other styles, which may from time to time be suitable in specific circumstances, but to be used with caution. There is strong preference for the values of collaborative style relationships with other parties in the supply channel, in which the leading company is willing to adapt its procedures to gain advantage for the achievement of the overall business goals and the coordination of the whole supply channel, transforming it into an integrative supply channel.

The reverse side of this idealised profile of behaviour styles of the channel leader and captain is the experience of the other partners in the channel. If that is a good experience of being in a business relationship with a collaborative leader then the collaborative partner becomes more effective, coordinated and productive. In fact the decision making level is elevated to that of a channel decision. It is the broader vision of being part of a successful supply channel.

The conclusion of this case research is that Tesco as an International UK Retailer has conducted its supply chain change at two critical levels. The first and

earlier level was as a sound logistics strategy. The second and more recent level particularly in its International expansion is as strategic logistics. This concept is taken from Fabbe-Costes and Colin (1999) cited in Bourlakis and Bourlakis (2001).

## 8.7 Summary

Chapter eight is a further exploration of the role of channel captain as depicted in the twenty- case studies in chapter seven. The theories and models from the earlier chapters have been reapplied to create various perspectives on the interplay in relationships between the different partners in a supply channel. There are three outcomes from this reflection.

The first is a classification of the roles and levels of organisation in supply channels. The second is an idealised behaviour profile of the role of a channel captain. The third is the confirmation that Tesco, both in its National and International supply chain strategy, is a excellent example of the role of retailer as channel captain in retail supply chain change. Chapter nine, which is the final chapter, will provide some conclusions and recommendations.

# Chapter Nine

## Conclusions & Recommendations

## 9 Conclusions & Recommendations

### 9.1 Introduction

This PhD is the author's contribution to academic reflection. It is based on his logistics practitioners experience with the leading UK grocery retailer, Tesco. That live experience was during a time of great change in the supply chain structure. Those changes were not merely reiterations of past practice and past relationships. They were major transformations in the supply chain strategy. They demonstrated that the retailer possessed the ability to implement structural change in its relationship with the suppliers. This thesis studies the nature of that change. It is a change in the ownership and control over the retail supply chain. The author's working experience was closely involved in the retail logistics implications of that shift in power balance from supplier to retailer.

The link between the author's practitioner experience and the world of academia is the Institute for Retail Studies at the University of Stirling. It provided the opportunity to collaborate with academics, who were knowledgeable about retailing and marketing. The first collaboration was an MBA. That was followed by a series of joint articles, chapters in books and finally co-authoring a book, published in 2006. Another part of the collaboration was participation in various executive programmes run by the Institute, presenting on a range of retail logistics topics. One of the strengths of embarking on a PhD is the contact with professional academics. This contact was facilitated through the annual Logistics Research Network Conference. That contact provided the author with the opportunity for direct conversations about his research topic with knowledgeable academics.

The thoughts on the research topic began to settle on the supply chain change in Tesco. Gradually the attention focused on the change in relationship between suppliers and retailers. There was much general academic discussion about these relationships and the use of power and control in the supply chain. Gradually the theme that emerged was ‘the role of the retailer in retail supply chain change’. However, that on its own lacked impact. If Tesco, as a retailer, had initiated these strategic changes; it raised questions about channel leadership, it added a twist to the topic. Then, buried deep in American manufacturing marketing literature, was the expression, ‘*channel captain*’. That presented a good challenge for a piece of research. That was worth examining.

The decision was made: the thesis **Aim** was: to examine ‘*the role of Retailers as Channel Captains in retail supply chain change: the example of Tesco*’. It would be a broader, deeper and more demanding research task. It would be set firmly within the contemporary debate about the nature of supply chain relationships and practitioner initiatives, such as Efficient Consumer Response. It required the author to re-examine his practitioner experience from a new perspective. It was much wider than the operational detail of retail logistics. It was broader because it required a higher level of reflection. That level would be the interplay between retailer and supplier about the control over the strategy of the supply chain structure. That strategy had wider aims than simply moving products from supplier to store. There was competitive advantage and the capability to support strong retail expansion at stake. It would even go further and underpin the growing strength of the Tesco brand. It would be deeper because the author was in a position to re-visit his practitioner operational experience. That experience was in both retail logistics and the supply channel. It was in the mature ambient centralised distribution operation. It was also in the emerging structures of

temperature controlled logistics. In this latter sector, it spanned the transition from supplier organised logistics to retailer organised logistics.

A practitioner can bring practical experience to the academic debate. It was not theoretical models or hypothetical cases that were needed in this research. What was needed was insight into real events. The external observer does not often get the opportunity to go behind the scenes and find out the nuances of what is happening. This thesis, then, draws together two strands. The first is the public academic reflections and analysis of retailing, retail logistics and supply chain management. Through his extended collaboration with the Institute for Retail Studies at the University of Stirling, the author gained access to the depth and breadth of their retail research. What he could also do is revisit those American origins of the concept of the channel captain. The second strand is the practitioner reflection on real events. The author would be in a position to reveal directly their detail and subtlety. The thesis aim would be to elicit reflections on the nature of the relationship behaviour that really took place. The purpose would be to examine the extent to which those participating showed and understanding that these events were part of a larger transformation; namely, that of retail supply chain change. The anticipation is that the two strands together will produce more insight than examining each in isolation. This is a PhD with a practitioner dimension. The contribution it aspires to make is to place the concept of the retailer acting as channel captain in a real setting. Then it is there for future researchers to see, as part of the evidence of the processes of retail supply chain change in a major UK retailer.

The process of conducting this research is founded on the three objectives that supported the building blocks of the thesis topic. The first was the investigation

into the historical origins of the concept of the '*channel captain*' in American manufacturing marketing in 1960's. This necessitated a visit to America to meet the authors, James Stock and Stanley C Hollander. The second objective is the consideration of the general nature of modern European retailers and their varying stages of involvement in retail supply chain change. In this the author was dependent on the work of his colleagues at the Institute for Retail Studies. The conclusion of this examination is that an in depth study of Tesco would provide the most benefit to academic and practitioner knowledge. The third objective is an examination of the role and behaviour of Tesco as a Retailer in retail supply chain change. This would cover some more general description and analysis of elements of the supply chain: retail logistics, the supply channel and managing change. It would then provide a series of cases from real events. They would be the material for the more detailed and nuanced reflections and analysis in terms of retail supply chain change. The whole thesis would then be a culmination of the process of intertwining the academic and the practitioner elements into a high quality contribution.

After the Introduction in Chapter One, the thesis starts with the historical investigation into the American origins of the concept of channel captain in Chapter Two. Then it moves immediately onto a general consideration of the modern European retailing scene. This reveals that most of the major grocery retailers control their retail supply chains. It reveals change in the balance of power between suppliers and retailers. Given the author's operational experience, it is logical to conduct an in-depth examination of the retailer Tesco. The next chapters consider the role of the channel captain in retail supply chain change. The sequence chosen reflects the order that retailers get involved. The first, Chapter Three, is retail logistics, which is the movement of goods from centralised distribution centres to retail store. The second,



Chapter Four, is the supply channel, which is the movement of goods from the supplier to distribution centre. Chapter Five, Managing Change, examines different approaches to supply chain change and relationship. This investigates another aspect of the Aim, namely, the examination of the behaviour of the Retailer as Channel Captain in retail supply chain change. Chapter Six, Methodology, explains the reasons for choosing participant action research combined with case study approach.

Thus far the thesis structure has been examining the broader dimension of the role of the Retailer as channel captain in retail supply chain change. This breadth is complemented with more depth in Chapter Seven, which is a series of twenty cases, all real events, all known to the author. It provides a variety of angles, nuances and detail about retail supply chain change, beginning at the operational level and then exploring different examples at the tactical and strategic levels. These are analysed in Chapter Eight to elicit the results of the intertwining of the academic and practitioner strands. Finally, this Chapter Nine provides an overall judgement on the thesis, its process and its contribution to academic and business knowledge.

This chapter will now proceed with sections on: Meeting the Objectives; Conclusions and Contribution; and finally, Limitations and Future Work. Meeting the Objectives provides an account and summary of the results for each objective in turn. Conclusion and Contribution, discusses the broader issues that arise from the examination of the thesis topic and the contribution that the thesis makes to academic and business knowledge. Limitations and Future Work, is in two sections. The first section, describes aspects of the research process that were constrained either by the author's circumstances or the nature of the methodology selected. The second section

explores some opportunities for further work under the headings: depth, breadth and global, which concludes the whole document.

## 9.2 Meeting the Objectives

There are three objectives for the thesis. The first objective is to investigate the origins of the concept of Channel Captain. The second objective is to consider if there are one or more modern European retailers who act as channel captains and to select the retailer Tesco as an example for further study. The third objective is to examine the role and behaviour of a retailer acting as a channel captain. These three objectives have been achieved by bringing together academic analysis and practitioner operational experience. The process of working through each objective in sequence has attained the goal of fulfilling the thesis Aim. Here is a summary of the results for each objective.

### 9.2.1 Origins

The first objective is to investigate the origins of the concept of Channel Captain. At first, the author had some difficulty in uncovering these origins until, in 2003; he met and interviewed two American authors, James Stock and Stanley C Hollander on the topic. Their advice and guidance was helpful in putting these origins, particularly the work of E.J. McCarthy, into the context of the academic thinking and business practice during that period of 1970's America. At that time, marketing thinking was evolving from a functional framework into a managerial perspective. This was part of an emerging view that it was the marketing channels themselves that compete with each other. It was about channel competition and not just product competition. This led logically to proposing that the channel needed an organiser, a leader, a Captain. Those origins primarily depicted that channel captain as the

manufacturer. That manufacturer, with a strong national or international Brand, organised the marketing channel through wholesalers to promote, distribute and develop sales of product in the different destination markets. The channel captain model had expectations about desirable behaviour; for example, how best to deal with the task of handling conflict. That conflict might be with wholesalers or between wholesalers working in the same region. Although the model was predominately about manufacturers, it was seen as having the potential to be applied to other parties in the marketing channel.

There was awareness that entities other than the manufacturer might be the channel captain. More specifically, that the wholesalers in a region might themselves organise their regional market, especially if that was remote from the manufacturer's sphere of influence. Despite much debate between academic commentators; retailers were not normally identified as channel captains, which might reflect their limited sphere of influence, since they were more local or regional rather than national. Stanley C Hollander, however, was clear that the large department stores, such as Mace's or Sears & Roebuck, were the channel organisers, even in the 1930's. Although the term channel captain was not used back then, Stan Hollander affirmed that these retailers acted as the companies that led the supply channel and made the decisions on supply, implementing a policy that was termed: specification buying for some products. The retailer collaborated with chosen suppliers in order that they produced products for which the retailer controlled the detail of quality and design to a set price. This built on their strengths of international purchasing strategy, bringing products from a variety of sources, national and international, into the department stores for consumers to buy.

The term channel captain was in use in the academic and professional literature till the end of 1980's. Towards the end of this period the retailers, because of their closeness to the consumers and the greater availability of product choice, were gaining in power and position at the head of the vertical marketing channels. But the description of their role as channel captains was not as prominent as that of the manufacturers. However, the term channel captain gradually fell out of use. The reason seems to be that this managerial perspective on marketing had become established and embedded in the business culture and the need to be so explicit about the role receded naturally. These origins provided some guidance about the attributes of a channel captain and the business conditions in which the role could emerge. This guidance can help with the process of considering the existence of modern European retailers acting as channel captains. In this way the completion of the first objective provides tools to consider the second objective.

### **9.2.2 Retailers**

The second objective is to consider whether there exist one or more modern European retailers who are acting as channel captains and to justify the selection of Tesco as an example. This is a wide-ranging topic; it began with a broad consideration of retailing in general and grocery retailing in particular. One variant of modern retailing is the large national multiple retailer with an international presence and a global reach for sourcing products. Such a retailer has a strong brand, large scale and a powerful position in the marketplace. Their power has grown because of the market concentration that has taken place, their centralised organisation and their closeness to the consumer. One of the enablers of their success has been their control over the supply channel. They have organised the suppliers and the flow of products to achieve their retailing business objectives of sales growth and improved their market position.

There are countries where the major grocery retailers together command a high percentage of the market share. A number of these grocery retailers also implement direct control over their supply chains as part of their business strategy. In these circumstances retailer control over the supply chain is becoming commonplace. Some of the major European grocery retailers are acting as channel captains in retail supply chain change; even though that title is not ascribed to such companies. The first result of the second objective is that it has identified some of those retailers, who could be suitable companies for further study.

The second result is to select a retailer, Tesco, as an example for further study. This is a critical decision point in the thesis process. The choice produces its own type of contribution to the academic literature. The benefit of selecting this particular retailer is that it provides an opportunity to focus in some depth on its role and behaviour. The limitation of selecting Tesco as an example is that it is a view from a single company, which may or may not be typical of the retailers as a group. However, other retailers may not allow the author openness in terms of accessibility to events. That would influence the ability to reveal some of the depth of insight into the channel captain role and behaviour in retail supply chain change in those retailers. The opportunity to enhance the depth of the investigation through great insights from particular real events requires open access being granted to the author. Hence, the selection of Tesco as the retail company for examination in this thesis was strongly influenced by the author's operational experiences in this major UK multiple food retailer. The Institute for Retail Studies at University of Stirling has had a long relationship with Tesco over a period of more than twenty years. It reaches back to a period close to its major decision to get involved in centralised distribution for its own survival. The reflections of Tesco Main Board Director, Donald Harris, from the

1970's, particularly during Operation Checkout in 1977, emphasise the trauma and shock of those supply delivery problems that were triggered by the outstanding retail success of Operation Checkout. It is such a dramatic story that it brings home very clearly why the retailer then wanted to be in control of their own destiny and find a better way of organising the supply channel. The author had direct experience of the continuing developments from 1984 to 1998. The selection of Tesco made it easier to conduct the further study required to progress the third objective of the thesis.

### **9.2.3 Role & Behaviour**

The third objective of the thesis is to examine the role and behaviour of a retailer acting as a Channel Captain. The author had operational experience in both the retail logistics and the supplier logistics segments of the total supply channel from producer to consumer for a major UK multiple food retailer. These are the two components of the physical logistics in the supply channel. The movement of goods outbound from distribution centres to the retail stores and the inbound movement of goods from the suppliers into the distribution centres. They are presented in this sequence because it is the order in which the retailers took over control in the supply chain. In the initial stages of the evolution of the channel control process, the retailer began by setting up its own centralised buying functions across each of the product groups. At the same time there was a policy of increasing the centralisation of the warehousing, distribution and transport functions, which enhanced the leverage of the buyer's bargaining power. As a result, the retailer gained improved product availability and also enhanced product margins. These were the benefits of implementing a strategy of centralised distribution under its own control. It was a major improvement over the direct delivery service from the supplier to the retail stores, organised by the manufacturers and their transport and logistics companies. It was retail logistics, then,

that was the first phase of channel control by the retailer as channel captain. This strategy rapidly spread right across the full product range found in the retail store.

The second phase of channel control by the retailer as channel captain was supplier logistics, which is the organisation of the logistics of the inbound movement of goods from supplier to centralised distribution. This time the retailers gained by improving the coordination of the timing of product flow through the logistics system, which provided fresher products for the consumer and provided a further benefit of enhanced product margins. These benefits were achieved by the retailer's ability to coordinate the various components of the supply chain. They are also the benefits from the large scale of the multiple retail operation. This strategy was seen as a process of aligning the whole supply chain; from the producer through to the retail store, in order to better meet the needs of the consumer. It was also an exercise in improved logistics efficiency. In the early stages this was about shared user distribution alongside dedicated logistics and transport. This involvement in supplier logistics gradually developed into Primary Distribution. By the millennium, the commercial and distribution divisions agreed to a joint team that implemented a policy of Factory Gate Pricing, as part of its Step Change programme. This is a strategy of full retail control, including the direct payment, of the inbound movement of goods from supplier to the distribution centres. Primary Distribution had a separate budget and the cost of the delivery was taken out of the buyer's gross margin. The commercial members of the team conducted the negotiation with the suppliers. The distribution members of the team conducted the logistics reorganisation and negotiation with the logistics service providers. This has brought about a full reversal of the logistics set up that prevailed in the 1960's, when it was the manufacturers who owned and controlled the warehousing and transport operations.

There is the other dimension of channel control that is usually referred to as Supply Chain Management. This organises the information and data flow from retail to the suppliers, which in turn enables the physical product to be organised and delivered. There were two benefits from this information control. One was the reduction in order lead times, together with increased delivery frequency. The second was the improvement in stock turn in the distribution pipeline, and at the retail store. The disciplines and procedures were closely linked to the developments that took place within the retail store itself. The whole system was treated as an integrated process. All these aspects are included in the role of the channel captain.

However, having summarised the tasks for the role, there is, in addition, the debate about the manner in which the retailer conducts the role with the suppliers and logistics service providers. Here, the Efficient Consumer Response movement has striven to promote a collaborative, also called associative, partnership between retailer and manufacturer, between buyer and seller. That is the predominant style in which the role of the channel organiser, leader, and captain is expected to be conducted. The case studies provide a selection of real practical examples of collaborative, leadership, also called democracy. They provide the inside story for a set of events; selected to illustrate change management actions to eliminate instances of dysfunction in the supply chain and create more integrated solutions. The selection is based on events personally known to the author. It is recognised, however, that other colleagues and operators have similar stories based on their experience in their parts of the supply channel. This third objective completes the process of exploration of the topic of *'the role of Retailers as channel captains in retail supply chain change: the example of Tesco'*.



## 9.3 Conclusions

This section on conclusions is an opportunity to reflect on the issues that arise from the thesis topic. These are grouped under the subheadings: the Concept, the Role, the Behaviour, followed by Author Learning. The final and the most important section is the Contribution to academic and business learning.

### 9.3.1 The Concept

The concept of the channel captain had been useful in America during 1960s to early 1980s. It was introduced during a transition phase in management thinking about manufacturing led marketing channels. Its use symbolised the need for someone to take responsibility for making the channel happen in an integrated and effective manner. Its period of usefulness coincided with the growing awareness of the ability of marketing channels to compete with each other as channels. It was a concept of its time, with the American spirit of team sports and leadership. It marked a change in the evolution of marketing channel thinking, which then broadened out to include other parties in the channel. Wholesalers could be channel captains. Some types of retailers, such as the large department stores, acted as channel captains, but were not referred to as such in the literature. This development in the concept of managing the marketing channel made it easier for manufacturers to accept the benefits of setting up long term alliances with transport and distribution companies. This model of manufacturing controlled distribution was also the dominant practice in the UK during 1960's and 1970's.

The concept is useful when there is absolute clarity about the identity of the dominant company in the marketing channel. In those earlier days, it was the American manufacturer with a national or international Brand. Its application was in the context

of the debate about the use of power and control in the buyer–seller relationships; their confrontation; their collaboration. This encompassed further exploration of the theories about the nature and dynamics of the power relationship. Its application to manufacturers was gradually being overtaken by events. There was an increasing focus on customer choice. There was also a strengthening of the retailers' ability to exercise control and choice over the use of their shelf space. By then the marketing power balance was beginning to change its focus onto consumer choice rather than volume product sales. Mass retailers were beginning to decide which product ranges and brands they needed to stock in order to meet the needs of their customers and give them great choice. This type of retailer was becoming the head of the vertical marketing channel; in effect, taking on the channel captain role. The clarity about the identity of the channel captain, that had existed when the concept of channel captain was first introduced, was beginning to get lost as the retailer gradually increased in strength and power. At the same time, the concept of channel captain became embedded in management thinking; and as James Stock explained, there was no longer a need to keep talking about it. The thinking had moved on to other aspects of channel relationships.

The concept is useful in European retailing today. The point has now come when there is clarity, once again, about the identity of the channel captain. This time, though, it is clearly the retailers who are the channel captains. Market concentration has strengthened the retailers' position relative to suppliers. But, the use of the concept is rare. It has not become established or widespread. The retailers, even though they may not explicitly be called the 'channel captains', are expected to behave in a certain style of leadership. This links up with discussion about the retailers' use of power and the need for collaboration with suppliers. In the UK, this is exemplified in the Efficient

Consumer Response movement. The ECR concept has proven to be useful in both America and Europe.

What is against the idea of a channel captain and the activities and ideas it represents? For some supply chains it is not applicable; it may be considered too simplistic or out of date. If there is no clarity or agreement about the identity of the channel leader, then there probably will not be the recognition and trust from the other channel members. If several members of the supply chain each regard themselves as the channel leader they need to agree whether they are collaborating or becoming rivals for the leadership. Conflicts of interest between the companies could then create greater dysfunction of the supply chain. The members may demand a more egalitarian, more collaborative or associative relationship between the companies, with much greater independence for each member. This is the type of position or assumption seems to be taken by the Efficient Consumer Response movement. Although a channel member might be larger or stronger there is explicit pressure to engage in the industry goals on a basis of greater equality. This leaves the movement open to a lack of leadership if the companies are not willing to take part.

### **9.3.2 The Role**

Leadership is the hallmark of the role of a channel captain in retail supply chain change. But, differing supply chains permit varying opportunities to exercise that leadership. This can be linked to the retailer's position in the life cycle of channel leadership for that particular supply chain. One way to assess the role is to measure the extent to which it is possible to demonstrate that leadership. This could be expressed as steps towards leadership, starting with follower, and then progressing through emerging, early adopter, creative, and mature. The body of the thesis provided information about

the sequence in which retailers generally get involved with the supply chain. The first segment is retail logistics, which is the delivery from centralised distribution centre to retail store. The second segment is the supply channel; the delivery from the producer inbound to the retail distribution centre.

The degree of leadership, even in the first segment of retail logistics, can vary by the type of supply chain. For example, the ambient grocery products were often centralised first into the retail distribution centres. The UK multiple retailers tackled this sector at an early stage, so by the 1990s, this sector was in a mature state of development. The distribution centres and vehicles are visible for everyone to see. The warehouse technology though, which was already well established, is still evolving and developing. As a group, the retailers are the channel captains for the ambient grocery channel. But an individual retailer within that set might be a follower, an early adopter or even a leader, pushing forward processes and practices.

Using these steps or categories is a way to express an assessment of the role of individual retailers as channel leaders. For instance, was Tesco a leader in retail supply chain change? Yes, undoubtedly, but not always. In the past, when Tesco had centralised only a small percentage of the ambient grocery, they were more like early adopters. Other retailers had already pursued the centralisation strategy for ambient products. But that was before the effect of Operation Checkout in 1977. After the success of Operation Checkout, with its the delivery problems, Tesco in effect became the channel captain. They made a firm and all embracing strategic decision to get fully involved in centralisation across their product channels. In reality, it was a series of decisions, looking at the different product channels according to their capability to sustain the growth in the business. It was from that Board decision that Tesco took the

initiative away from the suppliers. Tesco wanted to control its retail supply chain. It had the strong desire and the will power to make it happen; to implement retail supply chain change.

The same issue can be considered for the temperature controlled supply chain. A few retailers, for example, Marks & Spencer, were well established and in control over their retail supply chain. They already had an excellent single temperature contract logistics service in place. In the case of Tesco, the assessment is quite different. Tesco had a series of single temperature supply channels each dedicated to a distinct product sector. But, each channel had a restricted capability to expand and grow. The supply chain capability assessment made by Tesco in the mid 1980s, concluded that the single channel supply chain strategy of '*more of the same*' was inadequate. It would require too much investment and be too complex and inefficient to sustain the company's growth into the future. A new model of supply chain structure was required to provide the logistics capability for the future growth intended for the business. That was precisely the conclusion that drove Tesco, as a retailer, to take the initiative with composite distribution. That is why the decision was bold. It really made Tesco stand out as the leader, as the Channel Captain. It was a step change of enormous proportions. It had vast scale, huge volumes, and multiple temperatures that consolidated a variety of product groups. It was precisely not: '*more of the same*' supplier logistics formula.

No supplier could have ventured into composite. Only a retailer with the courage and the conviction based on *previous* experience of the failure of supplier organised logistics could do this. The spectre of Operation Checkout and its supplier problems still haunted the Boardroom. It was after all only ten years on. Michael

Darnell was the Distribution Director at the time of Composite, he was a calm hand on the tiller; guiding the strategy through its initial difficulties. One logistics contractor's lack of performance at one of the sites resulted in Tesco taking that composite in-house. That logistics service provider had not worked with Tesco in retail logistics before; they were not accustomed to the Tesco culture and practices. All the other logistics service providers who were appointed were companies with existing Tesco contracts and had experience of its culture and way of working.

Was Tesco special? Yes, in many ways. Following Operation Checkout in 1977, Tesco was determined to be the supply chain channel organiser and made the distribution and logistics decisions to meet the needs of the retail business. It acted as a strong and competent supply chain leader. The author was fortunate to be there as a practitioner, during the transition phase between the first phase and the second phase of retailer control over the supply chain: the point where the interplay between supplier led logistics and retailer led logistics was becoming visible through the logistics changes that were being implemented. Many of those changes, transitions, shifts in power, were not visible externally at the time; the public gaze was diverted onto the implementation of composite distribution on its grand scale. The actions taken with the temperature controlled supply channels ahead of the composite implementation were part of a transition process. That was not just about logistics but also about implementation with conviction and drive. The rate of change was fast. There was the vision and goal of composite on the business horizon. Without that goal, the pre-composite finessing would have been merely a tweaking of the process, a repetition of a strategy that had already been judged to be inadequate and unable to provide the capability to handle the company's intended future growth. With composite as the goal, those same actions

acted as stepping-stones of improvement, paving the way for a smooth transition from the old system into the new.

The role of channel captain is powerful for the author as a practitioner; reflecting on the logistics changes and a real life involvement in the mid to late 1980s with the leading UK grocery retailer. The operational task with the contract distribution network prior to Composite was tough. It was creating an improved service and a higher standard of performance. It involved extensive work with temperature controlled supply channels that were closely associated with the suppliers' logistics structure. In these product supply channels, the retailer was in the process of emerging as the channel captain, which was a different position from that held in the ambient grocery supply chain. The long term effect was channel leadership, to the benefit of the supply chain.

Supply chains compete. Tesco temperature controlled retail supply chain changes created barriers to market entry in chilled product groups for competitor retailers, brand manufacturers, and for smaller retail companies that could only justify a simpler temperature controlled supply channel structure. It also opened up avenues to market for specialist niche suppliers, like case 7.3 St Peter's Fish. This increased the value of the category management for the product by partnering small suppliers with national retailers. It enhanced the retailer brand for quality products. This was a shift in retailer supplier relations that side stepped the head to head encounters of the branded ambient manufacturers. Without realising it at the time, it embodied a great deal of the best practice desired by Efficient Consumer Response.

### 9.3.2.1 *Tesco Brand*

The development of the retailer brand in the UK has been strong in the fresh chilled product sector. For example, Marks & Spencer fresh chilled quality products were the market leader and the benchmark at that time, for others to aspire towards. Marks & Spencer had conditioned the behaviour of their customer not only to perceive the product offering as excellent quality (high price), but also to come in early, especially on Saturdays, to buy from limited stock availability (scarce supply). The business target for Tesco was to bring that high quality and variety to all consumers, at a less expensive price and with full on-shelf availability all of the time. The transformation of the chilled distribution supply chain structure, through composite, enabled that goal to be attained. For the traditional chilled food branded manufacturers, the supply chain through composite was simply a substitute for their own very effective single temperature logistics channel.

The process of implementing composite distribution helped Tesco become a Brand leader in the chilled sector. The company had developed with the mainstream manufacturers a range of the retailer's own label fresh chilled products, following the model from ambient grocery. But, there was a more dramatic change going on at the same time. The national multiple retailer was taking over from the local butcher, the local greengrocer, and the local baker. This process was much lamented by some consumers; they saw their small local shops closing down. But, judging by the growth in sales for those products, the switch in consumer behaviour was real and dramatic.

For fruit and vegetables, fresh meat and poultry, morning goods and cakes, the transition to composite was more like a transformation, a repositioning of their image with the consumer. These products are considered strong destination shopping



drivers. The consequence of the strict temperature control was fresher, long lasting fruit and vegetables. The fresh meat and poultry suppliers prepared luxury meals and the retailer gave national coverage to specialist bakery products. This transformation created a positive response from the consumer to these products, compared to the quality they had been accustomed to buying locally. The transition to the composite supply chain strategy created a surge in the value of the retail brand. In those early days of composite, before all the other retailers caught up, the contrast was tangible; the consumers noticed; sales surged, volumes burgeoned. Today, much of that is forgotten, as those standards, which at the time were the new benchmark, have now become the norm. The role of Tesco, the retailer as channel captain in retail supply chain change was to achieve the stature of emerging as the brand leader. No manufacturer on their own could compete with that. The retail supply chain change strategy created not only competitive advantage; it enhanced the retail Brand.

### **9.3.3 The Behaviour**

There is a major theme that runs through the channel captain concept. It is involvement. The message to the 1960's American manufacturers can be summed up as: *'get involved in making the marketing channel work properly'*. Another way of expressing this is that the manufacturer should not just presume the marketing channel will automatically operate effectively by its own. Nor should the manufacturer take a view that the channel problems are all external to the manufacturer; for example: a view that 'it is all their fault' or 'they should sort it out'. The involvement of the leading company makes a difference. They can help put solutions in place. The same message applies to modern European retailers. It is worthwhile their getting involved with managing the supply chain. The case of the strawberries, 7.5, was selected to show how that can work. Retailers need to be part of the solution. The role of being a channel

captain is one of involvement and participation. It is best done collaboratively. The cases in chapter seven highlight supply chain change behaviour. Each is selected to embody a different aspect or nuance of the relationship and interaction between the retailer, the supplier and the logistics service provider, as analysed in chapter eight. The detail in these cases is not visible to the outside observer; that is why they have been documented in this thesis. Then others later will be able to view them in the light of the behaviour of the retailer as channel captain in retail supply chain change.

The culture of a company and the behaviour of its representatives might be so strongly aligned and firmly embedded that the channel captain style of behaviour continues even when an individual moves on from that role. However, if the alignment is fragile or weakly embedded, then the standing of the channel captain is more vulnerable. The two are inter-related and can influence the effectiveness of the supply chain. The track record over a period of time can be a strong influence over the reactions to individual incidents. This brings the discussion back to the earlier point. The appropriate channel leader, in helping the channel perform well, re-enforces the channel captain concept so as to encourage involvement. The dominant vision is that channels compete rather than individual companies on their own.

#### **9.3.4 Author Learning**

What has been the new knowledge that the author has learnt as a result of this PhD? A major item of new knowledge the author acquired is the interesting literature search about American manufacturing and marketing origins of the concept of channel captain. The topic is closely linked to developments in marketing thinking. The experience was linked with making the acquaintance of American authors who were knowledgeable about American retailing. In particular, it was a special privilege

to meet Stanley C Hollander and receive his advice. The subsequent time spent in the Michigan State University library was valuable. It provided an opportunity to follow up the leads Stan Hollander had suggested. The author was able to access their library resource and find additional material about the concept of the channel captain, which he brought back to the UK for further reading and reflection.

The second item of new knowledge for the author is the exposure to the academic literature on a wider basis relating to the thesis topic. The facilities of online searching facilities were very good during the latter stages of the PhD. It transformed and improved the distance learning part of the research. The benefit of academic journals is their discipline about references, which make interesting reading in themselves. The other aspect of this academic exposure was the pleasure of meeting so many academic professionals, especially through the Logistics Research Network Conferences. It broadened the author's awareness of the wide range of debate and research that is taking place in the UK and Europe. A further aspect of this academic exposure is the benefit of collaborative writing, which enabled the author to make the transition from business report to academic paper. It was a special pleasure to be part of a team, writing a book.

A third item of new knowledge has been gained through the extended cooperation with the academic colleagues at the Institute for Retail Studies at Stirling University. It improved the author's understanding of the drivers of retail development and the interaction between retail and its logistics and supply chain. One example would be the link between retailer brand and the composite supply chain for chilled products. It broadened his knowledge of the wider European retailing scene. As portrayed through the thesis, the process of reviewing and revisiting real events has

revealed new insights for the author about the change management process in channel behaviour. Finally it allowed the author to experience the benefits of revisiting his practitioner experience through the channel captain perspective. It also makes him appreciate that his operational experience took place during an important enhancement phase of the UK's leading grocery retailer that is now an international retailer.

### **9.3.5 Contribution**

There are several contributions for both academia and business. The first contribution is the rediscovery of the concept of channel captain and its application to contemporary debate. The second contribution is revisiting the historical origins of the concept of channel captain in the light of contemporary retail and supply chain developments. The third contribution is the construction of a Channel Captain Ideal profile of behaviour from the literature and operational experience in Tesco. The fourth contribution is the examination of the transition phase as a retailer moves from logistics strategy to strategic logistics in which logistics is a means of gaining competitive advantage. The fifth contribution is exposition of the development of primary distribution in the agribusiness sector, which is a dimension of the retailer – supplier relationship that is not usually included in the academic literature. The sixth contribution is placing the practitioners experience into the academic arena.

The first contribution is the rediscovery of the original use of the concept of channel captain. This is a contribution in the context of the application of the channel captain concept to European supply chains. Clearly marketing academics, especially in America, are acquainted with the application of the concept in both manufacturing and retailing. The term channel captain is not in use in current academic papers, for example, at the Logistics Research Network Conferences. When the author discussed

the thesis topic with academic colleagues in Europe, there was interest in what might be the results of the research.

The contribution adds historical depth to contemporary debate. This contribution comes from the original insights and analysis of the authors cited in this thesis: Kelley 1953, McCarthy 1960, Mallen 1963, Moyer 1975, and Hollander 2003. The concept of channel captain was an important component in the evolution of the marketing thinking during the 1960's. The concept drew attention to the importance of the role of leading the marketing channel in an effective and collaborative manner. In the 1960s, it was a message to the big American manufacturers not to neglect the importance of planning the allocation of their distribution channels in their policies on Place.

That was one phase in a much longer time horizon that started in 1890s. Then it was the manufacturers who were small, while the wholesalers were the middlemen, controlling access to the marketplace. Subsequently, the manufacturers dramatically increased their scale and size until they squeezed the wholesalers out of their dominant role. Then, after the 1960s, the balance of power changed yet again. In the consumer market, the mass retailers grew in scale and power until they were in position at the head of the marketing channel. The retailers had become the channel captains. One example of their channel leadership was their use of specification buying. The literature from that period in America reflects different camps. Some were totally on the side of the manufacturer as channel captain, others on the side of the retailer. These historical events and analysis provide historical depth to the contemporary debate about the use of power by the retailers in 2000s Europe.

The second contribution is providing contemporary breadth to those historical origins; Dawson 1990, Hines 2004, Gattorna 1998, Spekeman 2002, Christopher 2003, Lonsdale 2002. Koehurst 1999, Fernie 1992 & 2004. It is the re-application of the channel captain concept to the modern European retailer. It is a huge shift in time, culture, consumer habits, marketing, technology, supply chain, logistics practice, global sourcing and retailer environment. One aspect of the channel is quite distinctive compared to the historical American setting. It is not the manufacturers who are the channel leaders in the supply chain, but the retailers. On first examination there is more to contrast than compare. But the core idea of a team captain is readily understood in everyday language. The message from the past is: manage the marketing channel properly with the channel members. The message for the present is: lead the strategy and get involved with the supply chain partners productively. Both focus on the vision that it is channels that compete with channels. Both encourage companies within the same channel to avoid self-interested conflict as it impacts on channel efficiency. There is external evidence of a number of large European retailers controlling their physical distribution and supply chain management. Each is a channel captain. There are some retailers who are leading the industry in supply chain practice and other retailers who are followers, implementing proven practices, sometimes using competent logistics service providers. In Europe there is Efficient Consumer Response, which embodies some of the spirit of the channel captain concept; but clearly does not wish to use that phraseology.

The third contribution is the profile of a Channel Captain Ideal through the in-depth examination of the role and behaviour through the selected cases. These covered the transition period from the supplier led logistics to the retailer led logistics in Tesco. This relates to Tesco as a channel leader at two levels. The first level is as the

channel captain for the Tesco supply chain itself. The second level is more broadly, that Tesco is the leading grocery retailer in the UK and from that position makes a leadership contribution to the industry as a whole in supply chain management practices. It is a leader and other smaller retailers, and retailers from other countries around the world, follow the same policy by adopting similar practices in their own supply chains. The selected cases are presented to illustrate a variety of supply chain circumstances. Each event is real and takes a supply chain situation that needs some improvement and enhancement. It presents the real life interaction that took place to implement retail supply chain change. They reflect some of the better practices about the behaviour and style in which such change can be conducted.

The author's experience in presenting to business colleagues is that there is an interest in real events. In that way they can understand the context, think how it might apply in their own business context. They like to hear both what was done and how it was done. These cases re-enforce the benefits of being a company that is integrated internally and part of an effective and coordinated supply chain. They demonstrate the importance of being involved in supply chain change by taking ownership of the issues it raises. The retailer benefits from this collaborative involvement because the retailer can implement changes within their own organisation that enhance the effectiveness of the supply chain as a whole. This is a contribution to the practitioner community. It is a contribution to the academic community, who will approach the cases from their own theoretical or specialist background.

The fourth contribution is an illustration of the transition phase between logistics strategy and strategic logistics (Bourlakis & Bourlakis 2001). One example was the exploration of the link between the implementation of the composite

distribution strategy and the growth of the retailer brand across the fresh, chilled product groups. This demonstrates that the retail supply chain change has benefits additional to efficiency and cost elimination. As explained, the temperature controlled supply channel was in a different phase from the ambient centralisation process. The latter was well established and Tesco acted more as an early adopter rather than an industry leader, when it changed the pace at which it increased its ambient centralisation percentage. The chilled and frozen supply channels were more supplier-driven prior to the composite strategy implementation. The author was in charge of the pre-composite contract distribution networks for chilled and frozen foods. Produce distribution remained in house. He knows from direct experience their strengths and limitations. The step change impact of composite distribution was industry leadership by Tesco. It was a very decisive move away from the supplier logistics networks. The quality of logistics service, daily deliveries, sales based ordering systems, with strict temperature control from produce to retail customer, all provided the retail brand offer with strong support. The freshness of the chill product, especially produce was enhanced as a result of these strict disciplines. The rate of growth of the produce and chill sector was strong and enabled the large retailer to enhance the retail brand.

A fifth contribution is the supply chain analysis of the role of primary distribution and the agribusiness sector. The major grocery UK retailers have implemented category management as part of Efficient Consumer Response. The consequent product and supplier rationalisation was widespread, especially in those categories dominated by private label, namely fresh produce, meat and dairy products. The benefits are lower transaction costs and a reduction in the risks associated with quality and food safety by dealing with fewer, larger and more sophisticated suppliers. However, the market concentration acquired by these retailers increases because they



control access to consumers, which strengthens their buyer power. The Office of Fair Trading (OFT 2004) reviewed the implementation of the legally binding Code of Practice, introduced in 2002, by the top four retailers. This Code of Practice was intended to exemplify best practice in commercial relationship, underpinned by three key principles for all parties involved. First, the need to respond quickly to customers and deliver value. Second, the supply chain participants benefit by working together to expand the market for their products and develop of profitable and sustainable business. Third, all trading partners should be treated fairly and reasonably.

This review was conducted through a survey, which produced empirical evidence from suppliers on the nature of their relationships with supermarkets (Fearne et al 2005). This investigation is limited to the buyer –seller relationship. The same limitation applies to other research. An example is the work investigating the nature and management of power in a vertical supply chain context, which selected the UK fresh food channels because the business relationships are imbalanced (Hingley 2005). The retailers are powerful buyers and suppliers are largely dependent. Fresh foods are typically unbranded in the UK and sector origin and growth has been reliant on the growth and channel dominance of supermarket chains. These concerns of the agribusiness sector and the related research do not include investigation into the structure and evolution of primary distribution between suppliers and retailer regional distribution centres. There is a gap in the agribusiness research literature. This thesis makes a contribution to this debate. It analyses the evolution of retail control of primary distribution particularly in the fresh food sectors, which was an area of the author's direct operational experience.

The sixth contribution is the placing of one practitioner's experience into the academic arena. The case studies in Chapter Seven constitute an extended review or longitudinal study of Tesco and the internal dynamics of its evolution towards its role as channel captain in the supply chain at the operational, tactical and strategic levels. This thesis is intended to provide value to future researchers as evidence of real events that illustrate the role and behaviour of the UK's leading grocery retailer as channel captain in retail supply chain change. The contribution is made with the recognition that many colleagues in the retail and logistics industry have valuable contributions from their own events to share on this theme of retail supply chain change.

## 9.4 Limitations and Future Research

This section covers the limitations on the research and ideas for future work that could be worthwhile investigating. There were several types of limitations around this PhD thesis. They can be covered by the topics: methodology, practitioner, and PhD circumstances. There are various areas for further work and research. These are grouped under the headings of Depth, Breadth, and Global. Depth relates to retailer specific topics. Breadth examines opportunities for learning across the broader retail industry. Global considers the value for retailers who are expanding internationally; for retailers who are still developing in their own countries, and for suppliers who are seeking to supply the major retailers in Europe.

### 9.4.1 Limitations

The first item of limitations is methodology. The main consideration for the methodology is its practicality. The methodology options, described in chapter three, were limited by some considerations. The first was the degree of access that retailers and suppliers would allow the author. It was anticipated that his Tesco retail

background would limit the independence and detachment that could be attained. While this might have been less of an issue for a more generalised research approach, it would have been a significant factor for any in-depth investigation. The second factor is a consequence of this restriction on access to retailers and suppliers. It could have introduced a strong bias in the responses to any questionnaire or semi-structured interviews. Different interviewees might respond with contrasting value judgements, influenced more by the Tesco retail background of the author than by the nature of the topic under investigation. The decision was made to avoid these risks, as it was anticipated that they could outweigh any apparent benefit from the result. Involvement at that time might also place a constraint on future research that the author might be required to conduct. This decision ruled out some very interesting research opportunities. High on the list would have been an investigation into the Factory Gate Pricing policy that both Tesco and Sainsbury's were implementing just after 2000 and its impact on relationships between the retailers, their suppliers and the logistics service providers. This is a topic that is listed below for Future Work.

The consequence of this decision was the option to reflect more deeply about real events from the author's operational retail logistics experience that would be pertinent to achieving the aim of the thesis. Part of the aim is to examine the behaviour of the retailer as channel captain in retail supply chain change. The intention would be to identify a sample of instances that exemplified a good style of channel captain behaviour across a range of different supply chain circumstances. The events are real and were selected by the author from his direct knowledge or experience. They are not the type of events it would be easy to validate independently after the length of time that has elapsed since they occurred. This is a limitation on their future application. Equally, the author could have chosen to include in the selection a range of real events

that showed negative types of interaction. These would then be examples of a channel captain behaving ineptly in order to demonstrate the consequent disruption to channel effectiveness. The decision not to include some negative events might be considered a limitation on the methodology choice made for this research. But, the events selected mostly begin from a channel situation that is disrupted in some way. The cases then move through the detail of the action taken, which was effective in achieving a more integrated supply chain. They demonstrate the process of making that change. The research does provide real life cases, which are then available for future researchers to review. They are intended to be a valuable contribution to the knowledge base for academics and practitioners. In the author's experience, operators are interested in hearing the inside story of real events because they are easier to understand and apply to similar situations they might encounter in their own business environment. They like to know how things are done as well as what is done.

The second limitation is related to being a practitioner. The author's practitioner background required some hard work to get him accustomed to write in the academic style. The solution was to partake in collaborative writing with colleagues at the Institute for Retail Studies at Stirling University and the Packaging Logistics Department at Lund University, Sweden. This resulted in the publication of articles for journals, conferences, chapters in books and even a co-authored book. This process of joint authorship helped the author evolve from the writing style of a business report to that of academic research. There is another limitation from the author's practitioner's background in logistics operations. This relates to the topic chosen for the thesis. It requires a more reflective appraisal of that operational experience. This is not a technical document, either from a logistics operations point of view or from a theoretical framework, such as behavioural psychology. It has a limited focus

conveying an internal portrayal of the events in the cases. It does however place those internal observations into a more public domain, for others to assess.

The third category of limitation relates to the circumstances around this PhD. This doctorate is being done on a part time distance-learning basis. It started in 1997 and is being submitted in 2006, which is nine years. There are repercussions from these circumstances. The author runs a private business as a management consultant in retail logistics. As might be expected, there are obligations in running a private business that can disrupt a plan for academic research. Sometimes, the author would make a commitment and allocate time to conduct aspects of the PhD. But, from time to time, these good intentions would be swept aside by the pressures and demands of business from clients to meet their deadlines. This reflects the feast and famine fluctuations that can occur in a private management consultancy. The consequence has been this prolonged length of elapsed time between starting and completing this part time PhD. That has given rise to issues about the coverage for the literature search and also the timeframe for the Tesco retail logistics review. A decision had to be made about the cut-off time for these activities. For the literature review the focus is on the period 1997 to 2004. For the Tesco operational review the time span is from 1984 to 1998, which is the period of the direct experience by the author; supplemented by further investigations up to 2004. One limitation is that it reduces the immediacy of the research.

However, the author takes the view that his direct involvement with Tesco between 1984 and 1998 covered a period of evolution in the supply chain that is particularly pertinent to the aim of this thesis. He experienced for himself the transition from a supplier driven supply chain to a retailer led supply chain. His experience was at a senior level within the company, implementing supply chain logistics change. He was

closely associated, during that time, with colleagues who were planning the detail of the supply chain and logistics policy, in particular composite distribution. His reflection on that experience is from a practical involvement of the situation before as well as after the step-change of composite. He also knew personally the senior directors, who had been at the top level of Tesco during the 1977 Operation Checkout success, with its supplier delivery issues. That experience retains its interest for both the academic and the practitioner. In some ways, allowing additional time to elapse permits a more mature reflection. The passing of time can reveal aspects that have a lasting benefit, and make it easier to identify effects that are transient. The timescale for the transition from supplier domination to retailer domination over the supply channel has been long and gradual. It has accelerated in recent times in Europe, where there is now greater clarity that it is the retailer who is now the channel captain.

#### **9.4.2 Future Research**

The areas for further research are grouped under the headings of Greater Depth, Regional Breadth, and Global, International and Emergent Retailers. Greater Depth relates to the retailer Tesco on specific topics. Regional Breadth examines opportunities for learning across the broader retail industry by region, eg UK and EU. Global, International and Emergent Retailers considers the value for retailers who are expanding internationally; for retailers who are still developing in their own countries, and for suppliers who are seeking to supply the major retailers in Europe.

##### **9.4.2.1 *Greater Depth: Tesco***

There are aspects of Tesco the retailer acting as channel captain that could be researched to a greater depth. The topics would be a) primary distribution and transport; b) the viewpoint of suppliers; c) the perspective of contract distribution or

logistics service providers, and d) the role of Tesco within the industry influencing associations such as the Institute of Grocery Distribution with its program of Efficient Consumer Response and supply chain research.

Primary Distribution, as it evolves into its mature stage, is an excellent topic for further research with Tesco. At the time of researching for this thesis, the author had information about primary distribution but made a judgement that it was too soon in the process to conduct an academic assessment. Now might be a suitable time to conduct further academic investigation. The recent implementation of primary distribution has created a condition in the industry that is a full reversal of the status of the supply channel as it had been in the 1960's. Back then it was the manufacturers who owned the warehousing and transport operations, which were subsequently separated out as independent transport and warehousing services on behalf of the manufacturers. It is that strategic decision by the manufacturers to focus on what they considered their core business and contract out the warehousing and transport which makes an interesting start part to this further research. Yet now, some fifty years later, it is those manufacturers and suppliers, who are reacting in a negative way to the retailers because the retailers have extended their control further up the supply channel through the Factory Gate Pricing strategy in primary distribution.

This topic was not one restricted to Tesco alone. There were several UK retailers progressing the same strategy with their suppliers and inbound transport. It quickly became an industry wide change and the IGD (2003) collated information from retailers and suppliers. This is an excellent account of the events and the reactions to this change. Hence as well as being a topic suitable for Greater Depth with Tesco, it is

also an industry research topic for the next section, Regional Breadth, especially for the UK. However, the topic will be discussed solely in this section to avoid duplication.

Tesco Primary Distribution has implemented a Factory Gate Pricing policy beginning with its frozen suppliers between 2001 and 2003. Tesco Primary Distribution now organise and pay directly for the physical flow of goods from the supplier to the retailer distribution centre, through retailer appointed transport and warehouse logistics service providers. Further research could investigate three topics; the first could examine the internal changes in Tesco; the second could elicit and consider the views of the unsuccessful transport and logistics service providers and the suppliers they had been serving, and the third could study the views of those transport and logistics service providers, who were successful in gaining the primary distribution contracts from Tesco.

The first topic of the further research would be to examine the internal organisational changes that Tesco as a company had to make to create the primary distribution function by aligning the retailer's centralised buying with its distribution and supply chain functions. This part of the research relates to the internal dynamics of the evolution of primary distribution and the conditions that are required to be successful in implementing this change in the supply chain. The second topic of the further research would be a more detailed understanding of the views of the manufacturers and the logistics service providers about the Factory Gate Pricing policy. For those who were not successful, it has removed from their operations, the large-scale volumes that had been going to the multiple retailers' distribution centres. Their claim is that the result has been a loss of critical mass from their business, which has created inefficiency in the rump of remaining work to the smaller retail and other operations.



Their experience is that the retailer exercised its power in a dictatorial manner. The Tesco position is that this is not the case as the principle of the primary distribution rationalisation is to identify those operators with a structural synergy, which would produce transport efficiency improvement for the volume taken as a whole. This aspect of greater efficiency could be more clearly investigated with those operators who were successful in winning these transport contracts from Tesco.

As an overarching research topic, these tensions raise wider issues about the relationships between the three parties, retailers, suppliers, and logistics service providers and how they are conducted. To reinforce the need for this further research, a gap in the literature has been identified, as demonstrated in the agribusiness (see 9.3.5) where the research questions are about the exercise of power between retailers and suppliers in their activity of buying as a dyadic relationship. It does not investigate their activity in the supply chain, transport or logistics, a subject where further research into the changes brought about by the presence of retail primary distribution would provide new insight into the debate about retailer – supplier relationships. Primary Distribution includes the transport operator or logistics service provider as an important participant in the relationship. The activity is not solely a dyadic relationship because it involves three parties. Further research could examine the implications of the shift in power balance in the supply chain for each of three participants, who are critical to its success, retailer, supplier and logistics service provider.

The final research topic on this list for Greater Depth is the examination of the role of Tesco as a leading retailer in the work of the Institute of Grocery Distribution (IGD) through its programme of Efficient Consumer Response and its annual supply chain research programme. The IGD brings together the main parties in the Grocery

Industry, the retailers and the suppliers, although it does not directly involve transport operators or logistic service providers. In this context Tesco is called upon to champion various projects and industry initiatives in a collaborative style with suppliers and other retailers. The term Channel Captain is not one that is used in these projects, but the desired attributes of the retailer's conduct are a close match to those identified in this thesis. The research question would be to examine these desired attributes in this industry setting and so bring them into the academic literature and extend learning from this tradition. The IGD has an established reputation for bringing all parties in the grocery supply chain together in an environment, which is conducive to positive and open exchange of ideas and issues with the overriding objective of better serving the consumer and growing the grocery retail business in the country

#### **9.4.2.2 *Regional Breadth: Other Retailers***

A broader view is the issue of transferring to other retailers the lessons from the Tesco story. The broader area of further research would investigate the changing awareness in other retailers about the possibility of their role as channel captain. In the UK and other countries in Europe, there are retailers who are thinking about the benefits of taking control over their supply channel on either an "emergent" or "deliberate" logistics strategy (Bourlakis & Bourlakis 2001). There now exists an example from Tesco that they can evaluate and make their own business decisions to progress to a position of channel leadership in the supply chain. There is also the availability of logistics service providers, who have had good quality experience gained from their involvement with the retail leaders and early adopters of centralised retail distribution. These other retailers may be motivated by the need to organise and control their own destiny or by their assessment that the supply chain is part of gaining competitive advantage. In the modern retailing environment do these retailers now regard retail

controlled supply chain strategy as an essential part of being a retailer? How can the learning from Tesco be extended to the range of other retailers in the regions of Europe?

The different regions of Europe can be defined specifically for the purposes of this future research into seven areas. The first region is the United Kingdom, with its four leading grocery retailers, Tesco, Asda, Sainsbury, Morrison, and the other smaller retailers. The second region is the core of mainland Europe, where multiple retailing has been well established, France, Germany Holland, Belgium, Austria and Switzerland. The third region covers the Nordic countries, including Denmark. These countries have strong cooperative retailers, who have high market share as well as private retailers. There has been some recent restructuring of the grocery retail market. Most of these retailers have adopted centralised distribution in more recent times applying the model from the UK and the core mainland European countries. The fourth region is the area that can loosely be designated as Southern European, where multiple retailing is not as strongly established as in the previous regions. The countries in this fourth region are Spain, Portugal, Italy, and Greece. All of these countries now have multiple grocery retailers, who are either national or extensions of retailers from other countries. In this southern region, the development of centralised distribution is more recent. The changes in the retail and distribution structure have been compressed in time and the small retailer methods are still present or within recent experience. The fifth region contains those countries in Eastern Europe, which have recently joined the European Union. This region includes, Hungary, Poland, Czech Republic and Slovakia. These countries have seen a dramatic change in retailing over the past ten to fifteen years. They have been the markets that the established European retailers have targeted for expansion, bringing with them their own ways of organising the supply chain, distribution and logistics. These countries have experienced a sea change in retailing and its supporting

infrastructure. The sixth region contains those countries in North East Europe, Latvia, Lithuania, and Estonia. These countries are in more recent transition into the European Union, and together with Russia, are about to experience changes in the retail market structure and supporting functions. The seventh region consists of those countries in South Eastern Europe or the Balkans, which are in the process of joining the European Union. These countries are Slovenia, Serbia, Herzegovina, Macedonia, Turkey, and Cyprus. Each of these seven regions can be studied in isolation or in comparison to each other.

There are three possible approaches to this regional retail supply chain research. One method of conducting this further research is a benchmark evaluation to identify the different retailers and map their position towards establishing their role as channel captain in supply chain change. This would produce a benchmark map classifying retailers and countries according to their retail supply chain status. This benchmark map could be reset for different periods of time, e.g.; the present, ten years ago, five years in the future. A second method of conducting this further research is to study the expansion methods of the large grocery retailers into countries outside their home market. There are several research questions that could be asked. How do these retailers apply their supply chain strategy to support their retail expansion into other countries? Does their supply chain strategy differ from that applied in their home market? How does the power relationship between retailer and manufacturer or supplier change outside the home market? Do such retailers show greater supply chain leadership outside their home market than they do within their home market? A third method of conducting this further research is to examine the role of the logistics service provider or contract distribution operator in supporting retailers to gain supply chain leadership in the different regions. There are a variety of research questions that could

be pursued. How have those logistic service providers applied the earlier experience they have gained from working for the leading retailers in the mature multiple retail markets? Do retailers bring their established logistics service providers with them into new markets? Do retailers contract out or conduct their supply chain, distribution and logistics in house when expanding into new regions?

This broader research into the retail supply chains in the different regions of Europe would fill a gap in the academic and business literature. The Institute of Grocery Distribution has recently expanded the scope of its research on retailers outside the UK. This may develop into a fuller exploration of the supply chain development and the role of the retailer in leading supply chain change. The IGD would be a suitable institute to link up with in conducting this type of broader research into retailers by region.

#### **9.4.2.3 *Global, International and Emergent Retailers***

Further research into Global, International and Emergent Retailers has four components. The first component consists of those retailers who are judged to be Global Retailers. The second component is composed of those retailers who are judged to be International Retailers but not yet sufficiently established as global retailers. The third component is that group of Emergent Retailers, who are regional or national retailers in countries outside the European Union or North America. The use of the term emergent is to classify the development status of those multiple retailers and is not used to imply that the countries in which they are operating are necessarily emergent as economies. The fourth component is the category of suppliers in various countries that struggle to gain access to the European major retailers for their products. The experience gained with those retailers who are now in a mature phase of supply channel

control could provide other retailers with benchmarks and milestones on the route to establishing a centralised distribution strategy.

The first group are those retailers that are judged to be Global Retailers. These are Wal-Mart, Carrefour and Tesco (IGD 2006b) (Table 9.1). These global retailers are identified and assessed using a number of measures, which are more than just size alone. It is about international presence, retailing vision and global strategy and culture. The IGD has constructed a Global Retail Index (GRI), which uses a range of hard and soft factors to assess the extent to which retailers have become 'globalised', providing a benchmark for retailers and suppliers worldwide. By net turnover Wal-Mart is by far the largest global retailer, with world with sales of \$285,222 million in their fiscal year 2005. However Carrefour holds the number one position as a global retailer on the IGD Global Retail Index ahead of Wal-Mart, with Tesco third. These three retailers are in a category of their own as leading global retailers. Further research into these retailers would reveal more information about their supply chain leadership and how they have been successful globally. That would form a base from which concepts and constructs could be defined and used to analyse other retailers as they each have a strategy, which they apply to their supply chain to support their global expansion.

The second group are those retailers that are judged to be International Retailers (IGD 2006b) (Table 9.1). These are in two categories; those who are almost global and those with the potential to be global. Their retail strategies are analysed by commentators, such as IGD. However, further research into the changes they are making to their supply chain strategies would highlight their analysis of the successful strategies being applied by the three global retailers. This research would apply the

concepts and constructs from the three global grocery retailers as a benchmark to both categories of international retailers and examine the degree of leadership skills that they demonstrate. The last ten retailers in the top thirty retailers are leading domestic and emerging international retailers who still have a significant gap to fill to become global. ‘Grocery Retailers’ are defined by IGD as those retailers where ‘food and drink’ accounts for a significant proportion of sales (over 25%) and where grocery is key to the business strategy. These leading thirty international grocery retailers generated \$1,403 billion in 2004/2005, of which Wal-Mart contributed some 20%; the next nine contributed 38% and the next twenty 42%. This set of thirty retailers is therefore a suitable group for further research.

The third group are the Emergent Retailers, who are regional or national retailers, outside the European Union or North America, that are still in a development process towards mature status as a retailer leading their supply chain. This classification is stimulated by the author’s study visits between 2000 and 2004 to Greece, Mexico, South Africa and Jordan, which revealed the different stages of some of the retailers and suppliers operating in such countries. One conclusion from these visits is that retailers vary in their awareness of the role of the supply chain in their retail strategy. A second conclusion is that evaluating these retailers from a mature benchmark can indicate their probable development, even though they themselves may not be aware of that potential. This research would need to part of some broader retail analysis for one of the international regions, such as the work of the IGD, who currently monitor over a hundred retailers in forty five countries, a research programme that they are expanding and deepening to include the supply chain.

IGD 2006 Global Retail Index (GRI); Retailer Rank by Grocery Turnover League (sales \$10bn+)					
Rank GRI	Rank T/over	Retailer	Country of Origin	GRI score	Analysis
1	2	Carrefour	France	87	Leading global retailers
2	1	Wal-Mart Stores	US	85	
3	5	Tesco	UK	73	
4	3	Metro Group	Germany	71	Leading international retailers (nearly global)
5	4	Ahold	Netherlands	67	
6	14	Auchan	France	56	
7	19	Seven & I	Japan	54	
8	9	Aldi	Germany	53	
9	20	Groupe Casino	France	53	
10	7	Costco	US	52	
11	25	Delhaize Group	Belgium	52	
12	8	Rewe Group	Germany	49	Leading international retailers (potential to be global)
13	10	Lidl & Schwarz	Germany	45	
14	22	Tenglemann (inc A&P)	Germany	44	
15	17	Spar International	Netherlands	43	
16	16	Aeon	Japan	42	
17	12	ITM Entreprises Intermarche Spar	France	34	
18	18	Leclerc	France	30	
19	13	Edeka Gruppe (inc AVA)	Germany	27	
20	15	Safeway Inc	US	24	Leading domestic and emerging international retailers (significant gap to be global)
21	6	Kroger	US	23	
22	39	Coop Norden	Scandinavia	23	
23	34	Marks & Spencer	UK	22	
24	36	Cora Louis Delhaize	France	21	
25	31	Migros	Switzerland	19	
26	35	Coop Italia	Italy	19	
27	27	Loblaws Companies	Canada	17	
28	24	Woolworths	Australia	17	
29	37	Lawson	Japan	16	
30	11	Abertson's	US	15	

Source: IGD Global Grocery Retailers 2006

**Table 9.1 Global and International Grocery Retailers**

The fourth group are those emergent suppliers, who do not know how to gain access to the markets of the major European retailers. The author's study visits in 2003 and 2004 to Mexico, South Africa and Jordan revealed some of the difficulties facing producers, for example, of fresh fruit and vegetables. The smaller suppliers in particular face hurdles in their aspiration to supply the multiple retailer chains. At present, their options may be so limited that it is difficult for them to reach markets beyond their home economy. The changing organisation within retail supply channels requires a different approach from suppliers. They have to change their understanding



and approach from product production to retail niche marketing if they are to find a space on the supermarket shelves for their products. This is a difficult area. But the attraction of gaining entry to the European supermarkets is very strong. A better knowledge of these supply chain processes would benefit those suppliers, who currently struggle to access the major retailers. Further research, even with a view to applying the models of the mature retail supply chains, would best be part of a programme conducted by a recognised Food Channel Institute, as the marketing strategy is critical to the success of such suppliers.

This section on Further Research has identified a series of options for Greater Depth, Regional Breadth and Global or International spheres of investigation. Such research, if it were done in conjunction with broader retailing analysis, would make a valued contribution to an understanding and an application of good retail supply chain change and leadership.

## 9.5 Summary

This draws this thesis to a close. The final chapter has summarised the aim and results of the thesis. It has demonstrated that there is both academic and practitioner value in the topic: The role of Retailers as Channel Captains in retail supply chain change.

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