THE INFLUENCE OF
SUPPLY CHAIN COLLABORATION
ON
CUSTOMER VALUE

by
PIERRE LINFORD

Submitted in the fulfillment
of the requirements for the degree
MASTER OF COMMERCII
in
LOGISTICS MANAGEMENT
in the
FACULTY OF ECONOMIC AND MANAGEMENT SCIENCES
at the
RAND AFRIKAANS UNIVERSITY

SUPERVISOR: PROF. J WALTERS
CO-SUPERVISOR: MR. PJ KILBOURN
ACKNOWLEDGEMENTS

I wish to acknowledge God almighty for everything.

My highly valued appreciation goes to Prof. Jackie Walters for his dedication to quality, high personal standards, leadership by example, and patience, as well as to Mr Peter Kilboum for his contribution to this study. My appreciation is extended also to the examiners of this dissertation.

I also wish to recognise three of my mentors, Mr. Ludo van Rie for his role in my career development, Mr. Gerard de Villiers for his role in my understanding of strategic logistics management, as well as Mr. Willem Cilliers for his contribution to my understanding of supply chain management.

My sincere thanks to my wife Renske, and my children Pierre and Christine for all their love and the sacrifices they made. Lastly, I wish to thank my parents for their encouragement.
TABLE OF CONTENTS

Executive summary

PART 1: INTRODUCTION TO THE STUDY

<table>
<thead>
<tr>
<th>Chapter 1: Introduction</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Introduction to the study, and background information</td>
<td>1</td>
</tr>
<tr>
<td>1.2 Definition of the problem statement</td>
<td>6</td>
</tr>
<tr>
<td>1.3 Motivation for the study</td>
<td>7</td>
</tr>
<tr>
<td>1.4 Primary &amp; secondary study objectives</td>
<td>7</td>
</tr>
<tr>
<td>1.5 Scope of study</td>
<td>7</td>
</tr>
<tr>
<td>1.6 Research methodology</td>
<td>8</td>
</tr>
<tr>
<td>1.7 Overview of the study layout</td>
<td>8</td>
</tr>
<tr>
<td>1.7.1 Integrated business logistics and supply chain management</td>
<td>8</td>
</tr>
<tr>
<td>1.7.2 Customer service management</td>
<td>8</td>
</tr>
<tr>
<td>1.7.3 Distribution Management</td>
<td>8</td>
</tr>
<tr>
<td>1.7.4 Factors to consider when designing the customer value proposition</td>
<td>9</td>
</tr>
<tr>
<td>1.7.5 Supply chain collaboration</td>
<td>9</td>
</tr>
<tr>
<td>1.7.6 The relationship between supply chain collaboration and customer value</td>
<td>9</td>
</tr>
<tr>
<td>1.7.7 Principles for successful supply chain collaboration</td>
<td>9</td>
</tr>
<tr>
<td>1.7.8 Conclusion</td>
<td>10</td>
</tr>
</tbody>
</table>

PART 2: THEORETICAL FOUNDATION

<table>
<thead>
<tr>
<th>Chapter 2: Integrated logistics and supply chain management</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1 Introduction to logistics and supply chain management</td>
<td>11</td>
</tr>
<tr>
<td>2.2 Strategic supply chain design</td>
<td>15</td>
</tr>
<tr>
<td>2.2.1 Customer service design</td>
<td>15</td>
</tr>
<tr>
<td>2.2.2 Partnership development</td>
<td>19</td>
</tr>
<tr>
<td>2.3 Supply chain structure</td>
<td>20</td>
</tr>
<tr>
<td>2.3.1 Channel strategy</td>
<td>21</td>
</tr>
<tr>
<td>2.3.2 Network design</td>
<td>22</td>
</tr>
</tbody>
</table>
2.4 Functional design of the supply chain
   2.4.1 Purchasing, materials management and manufacturing logistics
   2.4.2 Transportation management
   2.4.3 Distribution centre design and operations
2.5 Supply chain implementation
   2.5.1 Logistics information systems
   2.5.2 Facilities & equipment
   2.5.3 Policies & procedures
   2.5.4 Organisation and change management
2.6 Benefits of integration
2.7 Challenges of integrated business logistics and supply chain management
2.8 Conclusion

Chapter 3: Customer service management
3.1 Introduction to customer service management
3.2 Customer segmentation
3.3 Establishing customer needs
3.4 Customer service and product life cycles
3.5 Customer service design
3.6 Key customer service performance indicators
3.7 Benefits of value-adding customer service
3.8 Challenges facing customer service management
3.9 Conclusion

Chapter 4: Distribution management
4.1 Introduction to distribution management
4.2 Distribution strategy
   4.2.1 Partnership development
   4.2.2 Channel strategy
   4.2.3 Network design
### 4.3 Distribution planning 73

### 4.4 Conclusion 76

### PART 3: RESEARCH RESULTS 78

#### Chapter 5: Factors to consider when designing the customer value proposition 78

<table>
<thead>
<tr>
<th>Section</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1 Introduction to the customer value proposition</td>
<td>78</td>
</tr>
<tr>
<td>5.2 Factors that influence customer value</td>
<td>81</td>
</tr>
<tr>
<td>5.2.1 Quality</td>
<td>83</td>
</tr>
<tr>
<td>5.2.2 Service differentiation</td>
<td>87</td>
</tr>
<tr>
<td>5.2.3 Total logistics cost</td>
<td>91</td>
</tr>
<tr>
<td>5.2.4 Lead-time</td>
<td>98</td>
</tr>
<tr>
<td>5.3 Conclusion</td>
<td>107</td>
</tr>
</tbody>
</table>

#### Chapter 6: Supply chain collaboration 109

<table>
<thead>
<tr>
<th>Section</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1 Introduction to supply chain collaboration</td>
<td>109</td>
</tr>
<tr>
<td>6.2 Areas of supply chain collaboration</td>
<td>110</td>
</tr>
<tr>
<td>6.2.1 Information sharing</td>
<td>110</td>
</tr>
<tr>
<td>6.2.2 Process specialisation</td>
<td>112</td>
</tr>
<tr>
<td>6.2.3 Supply and demand integration</td>
<td>112</td>
</tr>
<tr>
<td>6.3 The collaboration formation process</td>
<td>115</td>
</tr>
<tr>
<td>6.4 Types of supply chain relationships</td>
<td>119</td>
</tr>
<tr>
<td>6.4.1 Informal cooperative ventures</td>
<td>120</td>
</tr>
<tr>
<td>6.4.2 Formal cooperative ventures</td>
<td>121</td>
</tr>
<tr>
<td>6.4.3 Joint ventures</td>
<td>124</td>
</tr>
<tr>
<td>6.4.4 Partnerships</td>
<td>125</td>
</tr>
<tr>
<td>6.4.5 Restructuring</td>
<td>128</td>
</tr>
<tr>
<td>6.4.6 Mergers</td>
<td>128</td>
</tr>
<tr>
<td>6.4.7 Acquisitions</td>
<td>129</td>
</tr>
<tr>
<td>6.5 Conclusion</td>
<td>129</td>
</tr>
</tbody>
</table>
Chapter 7: The relationship between supply chain collaboration and customer value

7.1 Introduction

7.2 Common missteps why supply chain collaboration fail to add customer value

7.2.1 Business culture and leadership

7.2.2 Lacking common understanding or definition

7.2.3 Lack of information sharing

7.2.4 Lack of segmentation

7.2.5 Lack of trust and security

7.2.6 Inconsistency in defining standards and measuring performance

7.2.7 Focusing only on technology

7.3 Factors to consider during supply chain collaboration

7.3.1 Common vision

7.3.2 Single-mindedness in purpose and resolve

7.3.3 Align measurement, compensation and rewards

7.3.4 Willingness to be technologically adventurous

7.3.5 Focus on differentiation rather that reduced cost

7.3.6 Clearly understanding core competencies

7.3.7 Effective collaboration with suppliers

7.4 Examples of supply chain collaboration and how it impacts on customer value

7.4.1 Automotive supply chain partnering

7.4.2 Tibbett & Britten Africa and Unilever.

7.4.3 FORD Motor Company and Daimler Chrysler

7.5 Conclusion
LIST OF FIGURES

Figure 2.1: Integrated framework for business logistics 13
Figure 2.2: The strategic design process 16
Figure 2.3: The total cost diagram 17
Figure 2.4: Demand information sharing model 24
Figure 2.5: Key logistics performance measures 31
Figure 3.1: Integrated marketing management and logistics management 36
Figure 3.2: The "Pareto" analysis of profitable customer 39
Figure 3.3: The typical product life cycle 43
Figure 3.4: The relationship between customer service levels and total costs 45
Figure 3.5: Market based strategic options 46
Figure 3.6: The 'S'-curve of diminishing returns on customer service 47
Figure 3.7: The impact of customer service on marketing effectiveness 50
Figure 3.8: Value of retained customers 51
Figure 3.9: The shrinking service window 53
Figure 3.10: Shifting the cost curve whilst maintaining the service levels 54
Figure 3.11: Pareto analysis for both customer and product profitability 55
Figure 3.12: Customer service offerings per logistics segment 56
Figure 3.13: The customer segmentation balance 57
Figure 3.14: The cost service benefit 58
Figure 4.1: Integrated framework for business logistics 59
Figure 4.2: Physical network designs and trading channel strategies 61
Figure 4.3: Alternative distribution channels 64
Figure 4.4: Supply chain mapping 75
Figure 5.1: Generic competitive strategies 78
Figure 5.2: Value disciplines 81
Figure 5.3: Factors that influence customer value added 82
Figure 5.4: The augmented product 83
Figure 5.5: Moving towards customer success 91
Figure 5.6: The cost of design and engineering changes 93
Figure 5.7: Strategic inventory management leading to customer value added 95
Figure 5.8: Total cost of ownership diagram 97
Figure 5.9: Market share declines when product shortages exists: Compaq 98
Figure 5.10: Concept to delivery lead-time 99
Figure 5.11: Total order cycle: a customer’s perspective 101
Figure 5.12: Customer order processing – variation in lead time 101
Figure 5.13: Goods and demand information flow in an isolated supply chain 102
Figure 5.14: Goods and demand information flow in a collaborative supply chain 103
Figure 5.15: Response to market forces 104
Figure 5.16: Demand and supply characteristics 105
Figure 5.17: Decoupling points and strategic inventory 106
Figure 6.1: Supply chain dynamics: the 'Forrester' effect 111
Figure 6.2: Longer supply chains put the supplier at risk 111
Figure 6.3: Synchronised supply and demand planning 113
Figure 6.4: Integrated supply and demand planning processes 114
Figure 6.5: Integrated supply and demand planning processes 117
Figure 6.6: Types of supply chain relationships 120
Figure 6.7: A framework for logistics outsourcing decisions 123
Figure 6.8: A framework for fourth party logistics partnerships 126
Figure 7.1: Self interest determines the level of cooperation 133
Figure 7.2: Collaborative planning, forecasting and replenishment (CPFR) 136
Figure 7.3: Supply chain segments 137
Figure 7.4: An ethic of collaboration 139
Figure 7.5: The logistics balance scorecard 144
Figure 7.6: Technology and collaboration 145
Figure 7.7: Technology and collaboration 148
Figure 8.1: Market segmentation 168
Figure 8.2: Some customers erode profitability 169
Figure 8.3: Customer profitability matrix 170
Figure 8.4: A product and / or service offering profitability matrix 171
Figure 8.5: Four basic procurement strategies 172
Figure 8.6: Supplier's strategic response to procurement strategies 173
Figure 8.7: Collaborative supply chain alignment 174
Figure 8.8: Strategic vs. tactical alignment 175
Figure 8.9: The market influence on supply chains
Figure 8.10: Emerging opportunities to collaborate
Figure 8.11: Business process alignment across business functions
Figure 8.12: Traditional or 'baron-type' organisations
Figure 8.13: Collaborative organisational structures
Figure 8.14: Kotter's eight phases of change
Figure 8.15: 'T-shaped' skills profile
Figure 8.16: The extended enterprise point of view
Figure 8.17: A phased approach for supply chain collaboration
Figure 9.1: Components of logistics management
Figure 9.2: The scope of supply chain management
Figure 9.3: The shrinking service window
Figure 9.4: Channel separation
Figure 9.5: Customer value
Figure 9.6: A product customer matrix leading to supply chain efficiency
Figure 9.7: Emerging opportunities to collaborate
Figure 9.8: Potential level of customer value added
LIST OF TABLES

Table 3.1: ABC analysis of customer account profitability 38
Business logistics is a broad, far-reaching field of study, impacting on a society’s standard of living. Business logistics is the art of balancing customer service levels, with the minimum total logistics costs. In other words, the business logistics practitioner cannot only be concerned with customer service levels or consumer value, but also has to be concerned with shareholder value. Business logistics differs from military logistics in that the latter also focuses on service delivery, but the cost is almost irrelevant. In military operations, successful results (winning the battle) far outstrip the total cost parameter.

This study of business logistics and supply chain management illustrated how supply chain collaboration can create an enabling environment, within which service levels will enhance customer value, whilst shareholder value will also increase. This can be achieved by collaborating within and across industries, with the view to gain economies of scale. However, such collaboration will require high levels of maturity amongst all role players within the supply chain.

Whilst partnerships are relatively commonplace, true alliances are more difficult to identify. Several high-profile alliances in the pharmaceutical, automotive, mass merchandise and fast moving consumer goods industries have recently gained publicity. Developing alliances has appeal because they can magnify the economic and market leverage of individual firms without financial investment.

In essence, the goal of alliances is to cooperatively build on the combined resources of participating organisations with the view to improve the performance, quality and competitiveness of the channel. Such cooperation requires a commitment to information sharing and problem solving. The expected result is a win-win for all participants. This type of collaborative alliance represents the channel arrangement most often referred to as a supply chain.
PART 1: INTRODUCTION TO THE STUDY

CHAPTER 1: INTRODUCTION

1.1 INTRODUCTION TO THE STUDY AND BACKGROUND INFORMATION

Business logistics impacts significantly on the standard of living and the quality of life of any society. It is argued that a country’s Gross Domestic Product per capita is in direct relation to its business logistics infrastructure, and ability to deliver customer service to the desired levels.

It is therefore vitally important, for the new democratic South Africa, to realign its macro-, market-, and micro environmental policies to create an enabling business environment.

Business logistics, has been defined by the Council of Logistics Management (CLM) as: “the process of planning, implementing, and controlling the efficient, cost effective flow and storage of raw materials, in-process inventory, finished goods, and related information from point-of-origin to point-of-consumption, for the purpose of conforming to customer requirements” (Lambert & Stock, 1993:4)

It is therefore important to note that the purpose of the logistics management process is to conform to customer requirements.

One cannot obtain success in business by working in segmented functional silos. The goals of business logistics management can only be achieved by means of an integrative approach. Of all the business functions, one could argue that one of the most crucial, certainly on a strategic level, is the relationship between logistics management and marketing management. One cannot achieve success in the one function, without taking cognisance of the objectives and the potential impact on the
other. The two functions, more than any other business functions complements each other.

An important milestone during the evolution of logistics management as we know it today, was the formulation of the *marketing concept*. Lambert and Stock (1993:7) say that during the 1950's, a number of companies formulated and adopted the so-called *marketing concept*. The companies mentioned are General Electric, Proctor & Gamble, IBM, McDonalds, Quaker Oats, General Foods, United Airlines, and Whirlpool Corporation. The above-mentioned firms are without exception, all still in business today. Hence, it is fair to conclude that the adoption of the *marketing concept* has provided companies with a long-term competitive advantage.

Lambert and Stock (1993:7) went on to define the *marketing concept* as: "The *marketing management philosophy that holds that achieving organizational goals depends on determining the needs and wants of target markets and delivering the desired satisfaction more effectively and efficiently than competitors."

Lambert and Stock (1993:7) go on to argue that this concept forms the foundation of the well-known philosophy of "*the customer is king*". It is clear from the above, that the *marketing concept* influences, if not dictates, the customer service policy.

The policy formulation process is a management instrument in the hands of all role players. It normally is a means to an end, especially in the case of logistics, due to the derived nature of the demand for logistic solutions. The policy formulation process will result in an industry enabling strategy. As such, a policy document is always a compromise, and never a perfect fit. Policy makers should always attempt to gain maximum buy-in. The economic synergy lies in the collective result of policies.
The economic subjects influenced by policies are:

- Households
- Businesses
- Governments
- International communities

The role players are:

- Users of commodities and/or services
- Suppliers of commodities and/or services
- Governments
- Government agents
- Commerce & Industry
- International communities

It is clear from the above that business logisticians, together with their strategic marketing colleagues, also have an external focus towards the market- and macro environments. Industry, and the thought leaders of the business logistics industry have realised this, and in 1998 the Council of Logistics Management revised the definition of logistics as follows: "Logistics is that part of the supply chain process that plans, implements, and controls the efficient, effective flow and storage of goods, services, and related information from point of origin to point of final consumption in order to meet customers' requirements" (Stock & Lambert, 2001:57)

The revised definition now includes the broader concept of supply chain management, as well as services. Service industries, utility companies and specialist logistics service providers such as third party and fourth party logistics providers are now one of the focal points of business logistics and supply chain management studies.
In 2000, the Council of Logistics Management (CLM) defined Supply Chain Management as: “the systematic, strategic coordination of the traditional business functions and tactics within a particular company, and across businesses within the supply chain, for the purpose of improving the long term performance of the individual companies and the supply chain as a whole”.

From the above updated revision of logistics management and the new definition of supply chain management, it is clear that the two fields of study (business logistics & supply chain management) compliments each other, and that supply chain management is the broader of the two concepts. Supply chain management is indeed a very complex process, and it extends beyond the traditional enterprise, as is generally known. Imagine wanting to manage all the business processes and role players for all products and services from point of origin to point of final consumption. This can realistically only be achieved through a collaborative effort in the supply chain.

The supply chain is a channel whereby products and materials are physically transferred through the system.

By implication, this then means that a philosophy of “do what you do best and outsource the rest” can be adopted. However, one should not oversimplify the debate as to “what is core business?” Businesses ought to be very mindful not to outsource their competitive edge or advantage, and then loose control of their competitive positioning.

In many cases, it could be economically more viable to outsource to supply chain partners, as opposed to in-source all these functions. This holds particularly true due to the economies of scale that can potentially be gained. Outsourcing as a means of supply chain collaboration will be discussed in detail in chapter 6.
However, the choice of the type of collaborative relationship that one considers entering into, will depend on the advantages a company stands to gain from this potential relationship, or the disadvantages or lost opportunities that a company stands to loose from not entering into such a relationship.

Software supplier and developer JD Edwards ran an advertisement in Business Day on 12 February 2001, under the banner, "COLLABORATE OR DIE". The advertisement read as follows: "Rattle some cages. Deploy the troops. It's time to power up your enterprise's collaborative network. After all, it's collaboration that's driving profitability in the Internet economy. A collaborative network lets you share information and processes with the outside world – so you can harness the power of your partners, vendors, customers, and employees to boost efficiencies, build value and achieve competitive advantage. But to collaborate, you need absolute freedom. That's what you get from JD Edwards. We provide the only web-enabled enterprise foundation that gives you the freedom to choose the best solutions. You can run with any idea. Plug in any application, and connect with any business partner running any software."

One of the areas to collaborate is information sharing. It is argued during the 3rd South African '20 Keys' conference that the new economy started after the end of the cold war, according to Venter, B. (2000) - Managing Director of Organisation Development International (Pty) Ltd. Venter continues to say that in the era of the cold war, the strategic question was "how big is your gun?" In other words, the 'war' was won or lost with military power. Venter goes on to argue, that since the fall of the Berlin wall and the advent of the new economy, the strategic question to ask is "how fast is your modem?" In other words, the 'war' is these days being fought on the business front, and is being won or lost on the drivers of the so-called new economy. One of the drivers of the new economy is information sharing. Companies no longer compete, especially not globally, but supply chains do. Supply chains need to replace inventory with information, because it is cheaper to manage
information than to carry inventory. However, collaboration is more than just information sharing. This will be discussed in more detail in chapter 6.

1.2 DEFINITION OF THE PROBLEM STATEMENT

South Africans live in post apartheid South Africa, or the new South Africa as it is commonly referred to. Some people believed that the subsequent abolition of sanctions and open trade agreements would bring about prosperity and new dimensions of wealth. Much hype was created with reference to the low standard of living and the need to improve on this.

However, South Africans still conform to the basic economic reality of having unlimited needs with limited resources. Many more South African citizens are travelling abroad, but without fail, most return filled with a feeling of disillusionment, because of South Africa's customer service levels, as experienced by the consumer, does not match their experiences abroad. Rude was the awakening that the new political order was not the end of all South Africa's problems, but indeed the beginning of a new economic reality, being that of having to become world competitive.

Are South African business leaders either unwilling or unable to perform on a par with the rest of the world, or are there environmental circumstances hindering the leaders of industry from achieving this much needed improved performance?

Supply chain collaboration has to date failed to deliver on the expectations created around the potential benefits. This study will focus on supply chain collaboration as one method to improve customer value added and shareholder value.
1.3 MOTIVATION FOR THE STUDY

The study is undertaken to evaluate whether the business climate allows and/or encourages supply chain collaboration, and to furthermore evaluate whether these alliances will make a positive contribution towards customer and shareholder value added.

1.4 PRIMARY AND SECONDARY STUDY OBJECTIVES

The primary study objective is to research the correlation between customer value added and supply chain collaboration.

A secondary objective is to study the shareholder value added by enhancing customer value through supply chain collaboration.

1.5 SCOPE OF THE STUDY

Due to the extreme complexity involved in managing the total supply chain, including all products and business processes from point of origin to point of final consumption, a tendency developed whereby management rather focused on the supply chain components and processes involved from point of their involvement up to the point of final consumption. (It goes without saying that management will also pay specific attention to first tier suppliers.)

Hence, this dissertation will cover a study of supply chain collaboration and will focus on the outbound side or the distribution function of the supply chain as detailed in chapter 4, and more specifically on collaboration in the trading channel and network design. Specific reference to the standard of service delivery, and the value added in the process will also be made.
1.6 RESEARCH METHODOLOGY

A literature study will be done of the theoretical aspects as well as case studies of successful supply chain collaboration.

1.7 OVERVIEW OF THE STUDY LAYOUT

The next paragraphs will discuss the study on a chapter-by-chapter basis.

1.7.1 INTEGRATED BUSINESS LOGISTICS AND SUPPLY CHAIN MANAGEMENT

In chapter two, the subject of integrated business logistics and supply chain management will be discussed. It is necessary to lay a sound theoretical foundation with regard to supply chain management in order to understand the area where collaboration could potentially add customer value.

1.7.2 CUSTOMER SERVICE MANAGEMENT

In chapter three, the concept of customer service management will be analysed as well as the elements that make up customer service management. Customer service management is made up of many components and it is important to understand these basics in order to build or derive a customer value proposition.

1.7.3 DISTRIBUTION MANAGEMENT

In chapter four, distribution management will be explored. It is in this area of distribution management that many opportunities for supply chain collaboration present themselves. This study will however focus on the outbound link of the supply chain.
1.7.4 FACTORS TO CONSIDER WHEN DESIGNING THE CUSTOMER VALUE PROPOSITION

Customer value is derived from four main groups of key performance areas. In chapter five the factors that ought to be considered when designing the customer value proposition will be explored.

1.7.5 SUPPLY CHAIN COLLABORATION

There are many possibilities and methodologies to collaborate, within a supply chain or outside of a supply chain. In chapter six, this study will analyse the different types or forms of collaborative arrangements within supply chains.

1.7.6 THE RELATIONSHIP BETWEEN SUPPLY CHAIN COLLABORATION AND CUSTOMER VALUE

In chapter seven, the study will analyse the positive correlation between supply chain collaboration and improved levels of customer value-added, customer loyalty, customer retention and long term supply chain success. Case studies will be quoted to confirm examples where supply chain collaboration indeed added to customer value.

1.7.7 PRINCIPLES FOR SUCCESSFUL SUPPLY CHAIN COLLABORATION

The focus of chapter eight will be on the identification of principles that are deemed necessary for successful supply chain collaboration, as well as potential barriers that could hinder successful supply chain collaboration. The chapter will be approached from a strategic marketing perspective, also identifying emerging opportunities for collaboration. The necessity for alignment of strategic and tactical activities as well
as the alignment of business processes will be discussed. Lastly internal and external barriers to supply chain collaboration will be analysed.

1.7.8 CONCLUSION

Chapter nine will conclude the study by briefly summarising the findings and conclusions of the above chapters and will be followed with an overall conclusion on the importance of collaborative commerce in a modern trading environment.

The added benefits of collaboration are enhanced customer service, higher value for the customer, greater customer loyalty, greater customer retention, greater market share and improved business results. These aspects will form the core content of the conclusion.
PART 1: INTRODUCTION TO THE STUDY

CHAPTER 1: INTRODUCTION

1.1 INTRODUCTION TO THE STUDY AND BACKGROUND INFORMATION

Business logistics impacts significantly on the standard of living and the quality of life of any society. It is argued that a country’s Gross Domestic Product per capita is in direct relation to its business logistics infrastructure, and ability to deliver customer service to the desired levels.

It is therefore vitally important, for the new democratic South Africa, to realign its macro-, market-, and micro environmental policies to create an enabling business environment.

Business logistics, has been defined by the Council of Logistics Management (CLM) as: “the process of planning, implementing, and controlling the efficient, cost effective flow and storage of raw materials, in-process inventory, finished goods, and related information from point-of-origin to point-of-consumption, for the purpose of conforming to customer requirements” (Lambert & Stock, 1993:4)

It is therefore important to note that the purpose of the logistics management process is to conform to customer requirements.

One cannot obtain success in business by working in segmented functional silos. The goals of business logistics management can only be achieved by means of an integrative approach. Of all the business functions, one could argue that one of the most crucial, certainly on a strategic level, is the relationship between logistics management and marketing management. One cannot achieve success in the one function, without taking cognisance of the objectives and the potential impact on the
other. The two functions, more than any other business functions complements each
other.

An important milestone during the evolution of logistics management as we know it
today, was the formulation of the marketing concept. Lambert and Stock (1993:7)
say that during the 1950's, a number of companies formulated and adopted the so-
called marketing concept. The companies mentioned are General Electric, Proctor &
Gamble, IBM, McDonalds, Quaker Oats, General Foods, United Airlines, and
Whirlpool Corporation. The above-mentioned firms are without exception, all still in
business today. Hence, it is fair to conclude that the adoption of the marketing
concept has provided companies with a long-term competitive advantage.

Lambert and Stock (1993:7) went on to define the marketing concept as: "The
marketing management philosophy that holds that achieving organizational goals
depends on determining the needs and wants of target markets and delivering the
desired satisfaction more effectively and efficiently than competitors."

Lambert and Stock (1993:7) go on to argue that this concept forms the foundation of
the well-known philosophy of "the customer is king". It is clear from the above, that
the marketing concept influences, if not dictates, the customer service policy.

The policy formulation process is a management instrument in the hands of all role
players. It normally is a means to an end, especially in the case of logistics, due to
the derived nature of the demand for logistic solutions. The policy formulation
process will result in an industry enabling strategy. As such, a policy document is
always a compromise, and never a perfect fit. Policy makers should always attempt
to gain maximum buy-in. The economic synergy lies in the collective result of
policies.
The economic subjects influenced by policies are:

- Households
- Businesses
- Governments
- International communities

The role players are:

- Users of commodities and/or services
- Suppliers of commodities and/or services
- Governments
- Government agents
- Commerce & Industry
- International communities

It is clear from the above that business logisticians, together with their strategic marketing colleagues, also have an external focus towards the market- and macro environments. Industry, and the thought leaders of the business logistics industry have realised this, and in 1998 the Council of Logistics Management revised the definition of logistics as follows: “Logistics is that part of the supply chain process that plans, implements, and controls the efficient, effective flow and storage of goods, services, and related information from point of origin to point of final consumption in order to meet customers’ requirements” (Stock & Lambert, 2001:57)

The revised definition now includes the broader concept of supply chain management, as well as services. Service industries, utility companies and specialist logistics service providers such as third party and fourth party logistics providers are now one of the focal points of business logistics and supply chain management studies.
In 2000, the Council of Logistics Management (CLM) defined Supply Chain Management as: "the systematic, strategic coordination of the traditional business functions and tactics within a particular company, and across businesses within the supply chain, for the purpose of improving the long term performance of the individual companies and the supply chain as a whole".

From the above updated revision of logistics management and the new definition of supply chain management, it is clear that the two fields of study (business logistics & supply chain management) compliments each other, and that supply chain management is the broader of the two concepts. Supply chain management is indeed a very complex process, and it extends beyond the traditional enterprise, as is generally known. Imagine wanting to manage all the business processes and role players for all products and services from point of origin to point of final consumption. This can realistically only be achieved through a collaborative effort in the supply chain.

The supply chain is a channel whereby products and materials are physically transferred through the system.

By implication, this then means that a philosophy of "do what you do best and outsource the rest" can be adopted. However, one should not oversimplify the debate as to "what is core business?" Businesses ought to be very mindful not to outsource their competitive edge or advantage, and then lose control of their competitive positioning.

In many cases, it could be economically more viable to outsource to supply chain partners, as opposed to in-source all these functions. This holds particularly true due to the economies of scale that can potentially be gained. Outsourcing as a means of supply chain collaboration will be discussed in detail in chapter 6.
However, the choice of the type of collaborative relationship that one considers entering into, will depend on the advantages a company stands to gain from this potential relationship, or the disadvantages or lost opportunities that a company stands to lose from not entering into such a relationship.

Software supplier and developer JD Edwards ran an advertisement in Business Day on 12 February 2001, under the banner, “COLLABORATE OR DIE”. The advertisement read as follows: “Rattle some cages. Deploy the troops. It’s time to power up your enterprise’s collaborative network. After all, it’s collaboration that’s driving profitability in the Internet economy. A collaborative network lets you share information and processes with the outside world – so you can harness the power of your partners, vendors, customers, and employees to boost efficiencies, build value and achieve competitive advantage. But to collaborate, you need absolute freedom. That’s what you get from JD Edwards. We provide the only web-enabled enterprise foundation that gives you the freedom to choose the best solutions. You can run with any idea. Plug in any application, and connect with any business partner running any software.”

One of the areas to collaborate is information sharing. It is argued during the 3rd South African ‘20 Keys’ conference that the new economy started after the end of the cold war, according to Venter, B. (2000) - Managing Director of Organisation Development International (Pty) Ltd. Venter continues to say that in the era of the cold war, the strategic question was “how big is your gun?” In other words, the ‘war’ was won or lost with military power. Venter goes on to argue, that since the fall of the Berlin wall and the advent of the new economy, the strategic question to ask is “how fast is your modem?” In other words, the ‘war’ is these days being fought on the business front, and is being won or lost on the drivers of the so-called new economy. One of the drivers of the new economy is information sharing. Companies no longer compete, especially not globally, but supply chains do. Supply chains need to replace inventory with information, because it is cheaper to manage
information than to carry inventory. However, collaboration is more than just information sharing. This will be discussed in more detail in chapter 6.

1.2 DEFINITION OF THE PROBLEM STATEMENT

South Africans live in post apartheid South Africa, or the new South Africa as it is commonly referred to. Some people believed that the subsequent abolition of sanctions and open trade agreements would bring about prosperity and new dimensions of wealth. Much hype was created with reference to the low standard of living and the need to improve on this.

However, South Africans still conform to the basic economic reality of having unlimited needs with limited resources. Many more South African citizens are travelling abroad, but without fail, most return filled with a feeling of disillusionment, because of South Africa's customer service levels, as experienced by the consumer, does not match their experiences abroad. Rude was the awakening that the new political order was not the end of all South Africa's problems, but indeed the beginning of a new economic reality, being that of having to become world competitive.

Are South African business leaders either unwilling or unable to perform on a par with the rest of the world, or are there environmental circumstances hindering the leaders of industry from achieving this much needed improved performance?

Supply chain collaboration has to date failed to deliver on the expectations created around the potential benefits. This study will focus on supply chain collaboration as one method to improve customer value added and shareholder value.
1.3 MOTIVATION FOR THE STUDY

The study is undertaken to evaluate whether the business climate allows and/or encourages supply chain collaboration, and to furthermore evaluate whether these alliances will make a positive contribution towards customer and shareholder value added.

1.4 PRIMARY AND SECONDARY STUDY OBJECTIVES

The primary study objective is to research the correlation between customer value added and supply chain collaboration.

A secondary objective is to study the shareholder value added by enhancing customer value through supply chain collaboration.

1.5 SCOPE OF THE STUDY

Due to the extreme complexity involved in managing the total supply chain, including all products and business processes from point of origin to point of final consumption, a tendency developed whereby management rather focused on the supply chain components and processes involved from point of their involvement up to the point of final consumption. (It goes without saying that management will also pay specific attention to first tier suppliers.)

Hence, this dissertation will cover a study of supply chain collaboration and will focus on the outbound side or the distribution function of the supply chain as detailed in chapter 4, and more specifically on collaboration in the trading channel and network design. Specific reference to the standard of service delivery, and the value added in the process will also be made.
1.6 RESEARCH METHODOLOGY

A literature study will be done of the theoretical aspects as well as case studies of successful supply chain collaboration.

1.7 OVERVIEW OF THE STUDY LAYOUT

The next paragraphs will discuss the study on a chapter-by-chapter basis.

1.7.1 INTEGRATED BUSINESS LOGISTICS AND SUPPLY CHAIN MANAGEMENT

In chapter two, the subject of integrated business logistics and supply chain management will be discussed. It is necessary to lay a sound theoretical foundation with regard to supply chain management in order to understand the area where collaboration could potentially add customer value.

1.7.2 CUSTOMER SERVICE MANAGEMENT

In chapter three, the concept of customer service management will be analysed as well as the elements that make up customer service management. Customer service management is made up of many components and it is important to understand these basics in order to build or derive a customer value proposition.

1.7.3 DISTRIBUTION MANAGEMENT

In chapter four, distribution management will be explored. It is in this area of distribution management that many opportunities for supply chain collaboration present themselves. This study will however focus on the outbound link of the supply chain.
1.7.4 FACTORS TO CONSIDER WHEN DESIGNING THE CUSTOMER VALUE PROPOSITION

Customer value is derived from four main groups of key performance areas. In chapter five the factors that ought to be considered when designing the customer value proposition will be explored.

1.7.5 SUPPLY CHAIN COLLABORATION

There are many possibilities and methodologies to collaborate, within a supply chain or outside of a supply chain. In chapter six, this study will analyse the different types or forms of collaborative arrangements within supply chains.

1.7.6 THE RELATIONSHIP BETWEEN SUPPLY CHAIN COLLABORATION AND CUSTOMER VALUE

In chapter seven, the study will analyse the positive correlation between supply chain collaboration and improved levels of customer value-added, customer loyalty, customer retention and long term supply chain success. Case studies will be quoted to confirm examples where supply chain collaboration indeed added to customer value.

1.7.7 PRINCIPLES FOR SUCCESSFUL SUPPLY CHAIN COLLABORATION

The focus of chapter eight will be on the identification of principles that are deemed necessary for successful supply chain collaboration, as well as potential barriers that could hinder successful supply chain collaboration. The chapter will be approached from a strategic marketing perspective, also identifying emerging opportunities for collaboration. The necessity for alignment of strategic and tactical activities as well
as the alignment of business processes will be discussed. Lastly internal and external barriers to supply chain collaboration will be analysed.

1.7.8 CONCLUSION

Chapter nine will conclude the study by briefly summarising the findings and conclusions of the above chapters and will be followed with an overall conclusion on the importance of collaborative commerce in a modern trading environment.

The added benefits of collaboration are enhanced customer service, higher value for the customer, greater customer loyalty, greater customer retention, greater market share and improved business results. These aspects will form the core content of the conclusion.
PART 2: THEORETICAL FOUNDATION

CHAPTER 2: INTEGRATED LOGISTICS AND SUPPLY CHAIN MANAGEMENT

2.1 INTRODUCTION TO LOGISTICS AND SUPPLY CHAIN MANAGEMENT

The purpose of this chapter is to provide a broad overview and integrated framework of supply chain management. This chapter will also put in context the scope and focus areas of this study, being in the areas of strategic supply chain design and supply chain structure.

Vogt, Pienaar & de Wit (2002:1) argues that business logistics management rose to prominence in South Africa during the nineties. Many manufacturing enterprises have developed their production processes to a point of optimum efficiency. Further cost savings are unlikely in the area of manufacturing. Effective logistics management is the remaining management function where significant cost savings can still be realised. Modern computer technology and systems enables businesses to leverage the potential of continuously improving logistics systems and integration across businesses. It is now also possible to enable the 'extended enterprise' or 'supply chain' to leverage similar benefits.

South African companies are exposed to increased globalisation that brings with it many threats and opportunities, even more so after the election of the democratic government in 1994, when sanctions were abolished. There is considerable industry consolidation these days, through acts of outsourcing, buy-outs, take-overs, collaborative agreements and joint ventures. This brings about increased competition, possibly due to excess capacity. (However, manufacturing and supply chain capacity does not fall within the scope of this dissertation). Hence, the concept of integrated business logistics is fast becoming an integral part of corporate strategy.
Flowing from the corporate strategy, the logistics mission and strategic objectives forms the foundation for integrating all logistics activities within the organisation. This approach fully supports the corporate strategic objectives in terms of strategic marketing objectives, customer service level specifications, total cost and quality objectives.

The concept of integrated business logistics seeks to integrate the different functional silos into cross-functional or commodity teams in order to achieve optimum levels of customer service, at the minimum total logistics cost, thereby leveraging competitive positioning into maximum profitability.

The organisational structure seeks radical change from the rigid multi-layer vertical organisations of the past to multi-disciplinary cross-functional teams. These teams work within generally flatter vertical structures, as well as across the horizontal disciplines of the functional activities.

Cascading down from the business logistics objectives is a carefully aligned set of logistics performance measures, taking into account the inherent conflict between maximising customer service levels and minimising total logistics costs.

The primary focus of supply chain management is the customer. However, an integrated supply chain need to co-ordinate a myriad of activities in order to achieve the desired level of customer service at the least total logistics cost, and to take market share away from other supply chains.

Considering the integrated framework for business logistics as per figure 2.1 (adapted from personal correspondence between Anderson Consulting and De Villiers, 1999), business logistics consists of eleven inter-related theoretical constructs, all of which supports the business's high level goal of improved customer service levels, at minimum total logistics costs.
A discussion on each of the theoretical constructs will follow, as well as the inter-relationship between them. It is important to focus both on the vertical integration between the four levels, as well as on the horizontal integration between the elements on the same level.

The concept of integrated business logistics at all levels is relatively new to South African industry. Traditionally, only top management had an overview of all business activities. This resulted in functional specialisation due to middle and lower management not being informed of the overall strategies and objectives, and very little feedback from the lower levels were either encouraged or received. Hence, there has been little buy-in and/or understanding from lower levels regarding the corporate strategy, and also limited alignment between the corporate strategy and the logistics strategy.
The other problem that compounded the issue is the fact that functionaries have been measured on their functional successes, rather than their collective conformance to customer requirements whilst minimising total logistics costs. This resulted in operational functions operating independently within their own systems, procedures, information requirements, targets and goals. These functions often duplicate infrastructure and are traditionally not necessarily aligned with the corporate objectives. Measuring functional business results in isolation leads to the formation and underpinning of 'functional business silos'.

The key therefore is for an organisation to make the transition from a functional organisation to a horizontal organisation that focuses on logistics processes. The integration of multiple organisational structures and functions into a successful role-player in a seamless supply chain, is a vision that is only beginning to evolve in most companies.

It is vitally important for the strategic logistics objectives to cascade down the organisation, converting customer service level commitments and total cost objectives into functional reality. This is a never-ending process, because an organisation must continually adapt to the changing business logistics environment within which it chooses to operate. This strategic alignment between corporate objectives and functional performance is traditionally one of the most neglected areas of business management, and there is still much opportunity for improvement, in order to gain a long term, sustainable competitive advantage.

Horizontal integration between functions is the skewer through an organisation that forms the trading path, and results in an order processing or fulfilment procedure, which directly influences the trade-off between customer service levels and total costs. It effectively links functional silos or departments together across boundaries within the organisation.
As such, a matrix and/or cross-functional organisation of this magnitude and complexity is easier said than done. It requires disciplined interaction between functionaries, very often with conflicting interests and priorities. Carefully designed performance criteria, aligned with the business objectives as well as with the logistics objectives, may contribute towards greater co-operation and achievement of the organisation goals.

2.2 STRATEGIC SUPPLY CHAIN DESIGN

It is important on the strategic level to understand the influence of the macro and market environments on the micro-environment, and vice versa. Key issues that need to be addressed are the basic and distinctive needs of segments within industries as well as the distinctive needs of customers within an industry. One cannot begin to contemplate a differentiated logistics or supply chain strategy if one does not understand which needs must be addressed. Only then can the logistics strategy lead to a differentiated position and a sustainable competitive advantage.

2.2.1 CUSTOMER SERVICE DESIGN

Customer service design starts with an enterprise’s strategic design. Refer to figure 2.2 for a diagrammatic presentation of a typical strategic design process.

The direction of any organisation depends on its corporate strategy. The corporate strategy is normally captured in a vision, mission statement, strategic objectives, and corporate values, and is created at the highest level in the organisation.
The logistics and supply chain strategies are derived from the corporate strategy, and must be integrated with the marketing strategy, and be aligned with the environmental factors of the market within which the company operates. In order to achieve this, the market must first be segmented into industries, and the industries then into customers or customer groupings. Logistics management systems or logistics business processes must then be designed commensurate with the needs or demands of customers in such industries, and similarly, logistics service offerings must be aligned to meet specific requirements. Such logistics processes could vary from sensitivity for cost efficiency on the one extreme of a scale, to agility or flexibility for responsiveness on the other extreme of the scale. Therefore, one size (or logistics service offering) does not fit all industries or customer segments.
From the ‘total cost’ diagram illustrated in figure 2.3, it is clear that logistics provides the place P of the four P’s of the marketing mix. The logistics strategy must also conform to the four ‘A’s of business strategy being Alignment, Agreement, Acknowledgement and Adjustment.

The total cost concept is the key to managing the logistics process. Therefore, the objective of an organisation ought to be the reduction of total cost of the logistics activities rather than focusing on each activity in isolation. Measuring total cost will contribute towards moving away from the functional silo effect.

Business strategy gives direction and requires resources in order to be implemented. A corporate strategy must also be communicated to all levels of the organisation, in order to achieve maximum buy-in. The top management team ought to align the logistics strategy with the corporate goals. Horizontal integration at the business strategy level is normally not an issue, as long as
management understands the inter relationship between marketing and logistics, especially at the strategic level.

Developing an integrated business logistics strategy is a complex process. Through an integrated logistics strategy, a company must achieve a sustainable competitive advantage through increased customer utility, which results in increased customer satisfaction and customer retention, by more accurately anticipating future demand and by better utilising the resources of all the business logistics processes and the entire supply chain.

Aligning the logistics strategy with the organisation’s corporate strategy will result in the following overall benefits, depending on the successful implementation thereof:

- Conformance to customer service specifications;
- maximising customer satisfaction;
- reduction in total costs by means of an integrated, cross functional, holistic approach;
- coordinating the logistics goals between all functions;
- creating harmony within the organisation, on a micro level;
- coordinating the supply chain in both the micro- and market environments;
- increased margins;
- reduced inventories;
- becoming the least cost, preferred supplier;
- growing the business and to gain market share;
- gaining a competitive advantage over the opposition; and
- succeeding in achieving the right product, in the right place, at the right time, in the right quantity, of the right quality, in the right condition, and at the right price.

Source: Compiled by the author for the purpose of this study
2.2.2 PARTNERSHIP DEVELOPMENT

Developing close operating relationships with key trading partners in the supply chain is essential for success. Bowersox and Closs (1996:88) wrote that the leading industrialist of the previous century, Henry Ford, envisaged a totally self-sufficient industrial empire. Henry Ford's objective was to have control. To ensure reliability in supply, Ford invested in coalmines, iron-ore deposits, timberlands, glass factories, and even land to grow soybeans for use in paint manufacturing. Bowersox and Closs go on to say that in order to control all aspects of inventory movement, Ford also invested in trucks, railroads, and maritime vessels.

Ford eventually realised that the key to success was to have a network of independent dealers. He also realised that specialist businesses could perform some of the functions better that the Ford bureaucracy. Henry Ford found out that no business could be self-sufficient.

In the modern competitive society, businesses no longer compete for market share, but supply chains do. The philosophy is that all channel members are integrated and aligned to create a seamless, effective and efficient supply system. In this way, customer value may be added at minimum total cost.

There are many forms of supply chain relationships. Some examples are outsourcing, strategic alliances, joint ventures, third party logistics service providers (3PL), and fourth party logistics service providers (4PL). (These concepts will be discussed in detail in chapter 6.) These relationships are built on mutual trust and shared information.

Supply chain collaboration is arguably one of the most challenging areas of supply chain management in the South African industry. Kilbourn of the Rand Afrikaans University argues in the April 2000 issue of Materials Handling Today that collaboration between suppliers and distributors is possibly the biggest
problem facing the South African supply chain industry. Kilbourn goes on to say, "an adversarial culture will most certainly negate any effort to integrate a supply chain." Supply chain collaboration is based on the premise that information will be shared.

Individual companies no longer compete, but networks of supply chains do. Supply chain efficiency is measured as the total supply chain throughput for a certain period, divided by average supply chain inventory during the same period.

Supply chain partnerships are tailored business relationships based on mutual trust, openness, shared risk, and shared rewards that yield a competitive advantage, resulting in business performance greater than what could be achieved individually.

These collaborative arrangements works well towards supporting logistics objectives and will result in improved order cycle consistency and shorter lead-times by working closely with key suppliers with resulting reduction in operating costs and increased flexibility.

2.3 SUPPLY CHAIN STRUCTURE

The supply chain should profitably satisfy customer needs and generate maximum impact within the market environment, in order to maximise market share for the supply chain partners. A supply chain serves to bridge the gap between the sources or suppliers of raw materials, the production of goods in a commodity environment, or the creators of capacity in a service environment, and the consumption of goods or services. There is no "best" supply chain configuration or design, but one can design an optimal supply chain commensurate with the needs of the organisation.
Channel strategy and network design need to be integrated horizontally, and must also be aligned vertically with supply chain relationships and the customer service design. (Supply chain structure and design will be discussed in detail in chapter 4)

2.3.1 CHANNEL STRATEGY

A distribution channel is the collection of organisational units, institutions or agencies within or external to the manufacturer, which perform the functions that support marketing. (De Villiers, 1999)

The purpose of a distribution channel is to provide customers with the desired combination of its output (lot size, on-time delivery, and market coverage) at minimum total logistics cost. (De Villiers, 1999)

Consumers determine channel structure by purchasing combinations of service outputs. Channel performance can lead to competitive advantage when no other group of institutions (channel) generates more profits or better customer satisfaction per RAND of product cost.

Functions and responsibilities will be shifted from one channel member to another in order to achieve the most effective structure with the most efficient results. Channel members ought to rather collaborate than to compete. This could possibly form the basis of supply chain collaboration.

Businesses may wish to exercise control over other channel members to ensure product quality and after sales service. The need for channel control is driven by the desire to protect the individual business’ long-term interest, as well as the long-term interests of the extended business enterprise, being the supply chain.
2.3.2 NETWORK DESIGN

Both qualitative and quantitative techniques are used to determine the best location of facilities, whether it being raw material storage facilities, manufacturing facilities, centralised or decentralised distribution facilities, and/or wholesaler or retailer sales outlets.

The Centre of Gravity analysis is the quantitative technique most widely used to calculate the optimum positioning of facilities. There are however a number of qualitative aspects that must also be taken into account, which will be discussed in detail in chapter 4.

Infrastructure and optimum positioning of facilities is essential to cater for the cost effective physical flow of goods from point of origin to the point of final consumption.

2.4 FUNCTIONAL DESIGN OF THE SUPPLY CHAIN

The functional level is normally the most challenging level of business logistics to integrate.

Vertical integration can be achieved by obtaining maximum buy-in from functional specialists. This is normally achieved by involving functionaries in the change management interventions. Furthermore, vertical integration is also enhanced by top management support of bottom-up initiatives.

However, in most companies, the functional level is horizontally fragmented into the various functional departments and/or divisions and/or business units, thus leading to functional silos that makes horizontal integration with supply chain objectives very challenging.
With reference to figure 2.1, horizontal integration is particularly challenging, mainly due to how management measures the performance of these functionaries. These functional silos could consist of purchasing, materials management, planning, production, transport, and warehousing. These functional specialised activities will be discussed in more detail in the next few pages of this chapter.

It is fact that the way management measures people, influences the way people behave. For example, if management measures production plant utilisation and productivity levels in isolation, the manufacturing function will be encouraged to have long production runs, thereby minimising set up times and optimising capacity utilisation.

Traditionally, each department or division, particularly in larger organisations developed their own processes and procedures, usually in isolation. This results in built-in conflict due to a lack of co-ordination between functions, with poor internal and external customer service.

However, many firms are moving towards integrated supply chain management, which means making a transition from a functional organisation to a process organisation. For example, the Sales and Marketing function cannot make unrealistic commitments without taking the capacity constraints of distribution, throughput and / or material supply into consideration.

Cultural change is a pre-requisite for horizontal integration. One can enhance horizontal integration on the functional level by implementing cross-functional teams. One could still find it difficult to implement decisions if these functional specialists report to their functional line managers. However, the organisation could be restructured into a process-driven organisation, whereby the project leader will have a much better chance of implementing the decisions of the cross-functional teams.
Functional integration must also be demand driven. Demand integration is the key to an effective supply chain. Demand management balances customer requirements with supply capability. Quantitative and qualitative forecasting techniques ought to take historical patterns as well as anticipated trends into account. However, most critical is to share this demand forecast across the extended enterprise.

Figure 2.4 depicts a typical demand management model, with the emphasis on sharing information across the supply chain.

**Figure 2.4 – Demand information sharing model**

![Diagram of demand information sharing model]


### 2.4.1 PURCHASING, MATERIALS MANAGEMENT AND MANUFACTURING LOGISTICS

From an integrative perspective, purchasing does not only serve the needs of manufacturing but must also understand and integrate the needs of customers.
Purchasing must also forge long term, but not irrevocable relationships with suppliers, in order to achieve the goal of supporting the supply chain objectives.

The Purchasing Department’s strategic role is to perform the sourcing related activities in line with the strategic objectives of the company. Purchasing does not only buy goods or services for reselling, but is also involved in the buying of capital goods and services for own use or consumption. Purchasing can make a major contribution towards profit leveraging and customer service levels, provided their goals are integrated with the overall logistics goals of the organisation.

The core functions of purchasing are:
- Supplier selection;
- value proposition analysis;
- total Quality Management;
- negotiation;
- expediting;
- in-bound transport; and
- quantity determination.

Materials management finds itself as the skewer between purchasing and manufacturing logistics. According to Coyle, Bardi, & Langley (1996:47) materials management focuses on the movement and storage of materials within a firm, as opposed to physical distribution that focuses on the movement and storage of finished products.

There is also increasing awareness of excess inventories, and how it negatively influences the bottom line of business.
The core functions of materials management are:

- Integration of demand forecasts with material supply planning;
- Determining economic order quantities;
- Master Planning;
- Master Scheduling;
- Material Requirements Planning (MRP I);
- Distribution Requirements Planning I (DRP I); and
- Distribution Resource Planning II (DRP II).

The classic interface area between logistics and manufacturing management relates to the length of production runs, according to Coyle, Bardi, & Langley (1996:37). Manufacturing logistics focuses on the optimum trade off between traditional manufacturing economies of scale, and key logistics performance indicators such as customer service levels, minimum total logistics costs, and asset utilisation.

The core functions of manufacturing logistics are:

- Length of production runs;
- Lot quantity costs;
- Switching costs;
- Rough Cut Capacity planning;
- Manufacturing agility aspects of;
  - Volume flexibility;
  - Mix flexibility;
- Raw material inventory availability;
- Work in process inventories;
- Finished goods inventory levels;
- Customer service levels;
Product design and configuration issues of;
  - Postponement;
  - Speculation;
Manufacturing logistics concepts of;
  - Assemble to order;
  - Make to forecast;
  - Make to order;
  - Purchase and make to order;
Theory of constraints; and
Manufacturing resource planning (MRP II).

2.4.2 TRANSPORTATION MANAGEMENT

Transport is provided in five primary modes, namely road, air, maritime, rail and pipelines, and a variety of intermodal combinations.

Business logistics is primarily concerned with freight transport. The demand for transport is derived from another need, namely that of the need to transport goods from point A to point B. Therefore, transport is a means to an end.

The macro functions of transport are as follows:

- The strategic function of transport relates to its military function. Without transport, a country would be unable to deploy its defence force to the hot spots where they are needed. Another strategic function of transport could be to support the macro economic policies and transport will hence be essential to facilitate international trade.
- The political function of transport relates mainly to public transport. Due to especially the Group Areas Act of the previous government, people were forced to live in certain areas, not necessarily close to the workplace. Government provided subsidised public transport for commuters, and it will take many years before this culture or legacy will
be replaced with one of willingness to pay for the full cost of the service.

- The social function of transport refers primarily to the improvement in quality of life of the economic subjects of a society.
- The economic function of transport relates firstly to the need to have labour available at the economic opportunities, and secondly to the role transport contributes towards the gross domestic product and to the economic growth and development of a country. Transport adds place utility and contributes towards time utility, in the supply chain.

According to Vogt, Pienaar & de Wit, (2002:178) the following three factors contributes towards transport economies of scale:

- Increase of vehicle sizes and maximisation of the utilisation of their capacity
- Increase fleet size and maximise the utilisation of its capacity
- Intensify the use of indivisible facilities and infrastructure whenever these are owned. (This argument will be further explored in chapter 6)

### 2.4.3 DISTRIBUTION CENTRE DESIGN & OPERATIONS

The main aspects of facility design are the purpose of the facility and the growth forecast of the facility over its lifetime.

The purpose of the facility evolves around customer needs, and the function required from the facility in terms of activities and material handling requirements. Products that require similar storage and handling infrastructure are grouped together. Product groups may differ for example in terms of temperature zones, storage-, transhipment-, or cross-dock operations. Each product grouping differs in terms of infrastructure and process, and expansion requirements must be kept in mind during the initial design.
The future needs over the expected life span of the facility must be estimated. A warehouse is not just a building, but also consists of access roads, transport-, goods receiving-, picking-, and despatch areas, storage racks, isles, movement zones, loading and off-loading docks, fire and security risks, lighting, material handling equipment and infrastructure, operations and warehouse management systems.

2.5 SUPPLY CHAIN IMPLEMENTATION

The key to supply chain implementation is shared logistics information. Logistics information systems will enable an enterprise to establish an order management system, monitor asset utilisation and to measure performance.

2.5.1 LOGISTICS INFORMATION SYSTEMS

Information is the key to integrated logistics management, and accurate information is essential to integrate the various logistics functions. The rapid technological progress that has been made with respect to availing information has enabled supply chains to share information relatively cost effectively. The cost of the other main logistics cost drivers has remained high.

Fast, accurate, real time – “Live” information is essential. Nick Tselentis, executive director of South Africa's Grocery Manufacturers Association went on record saying that for every invoice from a grocery supplier, 1,2 credit notes are being issued. (Business Day, 24 February 2000.) This is a very good example of how inaccurate information adversely affects the business process.

Suitable technology is available to generate the desired level of management information. This forms the basis of an adequate and effective logistics decision support system.
2.5.2 FACILITIES & EQUIPMENT

Facilities include manufacturing plants, and warehouses and/or distribution centres. Whether these are public or private will depend on the channel strategy and network design.

Each facility must be designed for optimal current efficiency and must take cognisance of anticipated future needs over the life expectancy of the facility. Only part of the investment is in the land and buildings. Therefore, it is imperative that handling-, and storage infrastructure is also supportive of the strategic logistics objectives.

2.5.3 POLICIES AND PROCEDURES

Policies are more detailed than organisational strategy development. The role of policy in the micro logistics environment is to create a regulatory framework, to address issues in a systematic and orderly way, to create an enabling environment, and to enable employees to turn threats into opportunities.

The purpose of policy is to resolve issues in a productive environment, reduce conflict, to create an environment for employees to conclude optimal economic transactions, to optimally utilise the scarce production factors namely capital, labour, raw materials and management ability.

The nature of policy formulation process is continuous, complex, dynamic, interactive, needs driven, and transparent. The policy formulation process is a management instrument in the hands of all role players, and it can be a means to an end, especially in the case of logistics, due to the derived nature of the demand for logistic solutions. The policy formulation process will result in an enabling strategy. As such, a policy document is always a compromise or trade off, and never a perfect fit.
Procedures on the other hand are a series of related steps or tasks expressed in chronological order to achieve a specific outcome. Routine activities can also be handled via procedures.

Examples of integrated management procedures are order processing procedures, purchasing, receiving, costing, and despatch & invoicing procedures, to name few.

2.5.4 ORGANISATION AND CHANGE MANAGEMENT

This is the major challenge, mainly as a result of how management measures the performance of the functionaries. It is imperative not to only measure the functional efficiency of an individual, but also to measure their logistics effectiveness. Figure 2.5 depicts the overall key logistics performance indicators.

Figure 2.5 – Key logistics performance measures

Source: Cilliers (2003)
For example, it is critical that the manufacturing person is not only measured on the unit production costs, but also on customer service levels. If the manufacturing function produces more of the same, the unit cost will come down, but the enterprise might be out of stock of a much-needed stock-keeping unit (SKU), and over stocked with another SKU.

Equally important are the human resources and organisational cultures. As stated above, horizontal integration is particularly dependent on the interaction of people from different levels and functions. If a culture of cooperation, transparency, collective performance measurement, and information sharing is not encouraged, horizontal integration will be hampered.

It is said that we all hate change, yet without it we would all still be driving model T Fords. If an enterprise wants to survive, it needs to change. Otherwise, the competition will overtake one. Change can also be positive, but must be managed.

2.6 BENEFITS OF INTEGRATION

Vertical integration ensures that the logistics strategy is aligned with corporate strategy. Vertical integration ensures that the corporate strategy is communicated at all levels of the organisation. Vertical integration also ensures performance measurement is based on the relationship of customer service conformance versus total logistics costs.

Horizontal integration results in quicker response to market requirements, better asset utilisation, and lower total logistics costs.

The overall objective of integrated, demand driven supply chains is to replace inventories with information, because information is cheaper.
2.7 CHALLENGES OF INTEGRATED BUSINESS LOGISTICS AND SUPPLY CHAIN MANAGEMENT

The corporate culture must be conducive of integrated performance measurement. This is arguably the single biggest factor that will either encourage integration, or revert back to the functional silo mentality. Responsibility and accountability must be clearly defined, with measurable key performance indicators and meaningful performance reward incentives.

Integrated logistics information systems are required, drilling down from the strategic market analysis to order processing and order fulfilment activities. Sharing information can enhance supply chain efficiency.

Lean manufacturing must be complimented by agile logistics concepts. Time to market must be reduced without sacrificing quality. Supply chains must be designed commensurate with industry parameters and customer expectations, for example, a low cost supply chain on the one end of the continuum and a highly responsive supply chain on the other side of the continuum.

Supply chains must be able to accommodate mass customisation when required, and the market will dictate the logistics concepts that need to be deployed under such circumstances.

Supply chain efficiency is measured as the supply chain throughput divided by total supply chain inventory. Hence, total average supply chain inventory must be managed.

2.8 CONCLUSION

Integrated business logistics management is an essential aspect of business strategy. Each level of management has to interact beyond vertical and horizontal
levels, in order to deliver the required levels of customer service at the least total logistics costs. The era of functionally organised companies is over.

Advanced computerised planning systems, able to do integrated resource planning on an enterprise level will be the decision support system for larger enterprises in future.

An organisation wishing to implement integrated business logistics management, faces many great challenges, but can potentially reap considerable benefits. A well-designed and integrated business logistics management strategy ought to result in a sustainable competitive advantage.

The purpose of this chapter was to illustrate a broad framework of the complex and integrated nature of supply chain management. The context and scope of this study will be in the areas of strategic supply chain design and supply chain collaboration in the outbound side to the supply chain.
CHAPTER 3: CUSTOMER SERVICE MANAGEMENT

3.1 INTRODUCTION TO CUSTOMER SERVICE MANAGEMENT

The purpose of this chapter is to describe the area of customer service management. It is in this domain of customer service management that the study will explore opportunities of adding customer value by means of collaborating in the supply chain.

Business logistics contributes to an organisation's success by providing customers with timely and accurate product delivery, according to Bowersox & Closs (1996:57). Therefore, business logistics is about providing the right goods and services to customers at the right place, at the right time, in the right quantity, of the right quality, in the right condition, and at the right price. In order to achieve this, the logistics processes must both be efficient and effective.

To be efficient, the logistics process must use the minimum resources to perform all the activities in the logistics process of providing goods and services. To be effective is far more difficult. The logistics and marketing functions complement each other, and together play a key role in customer satisfaction. Logistics impacts directly on the ability of an enterprise to market its goods or services. Refer to figure 3.1, indicating how logistics compliments the four P's of the marketing mix, as illustrated in Stock & Lambert (2000:97)

From the diagram illustrated in figure 3.1, it is clear that logistics plays a key role in providing the place P of the four P's of the marketing mix. Logistics influences the total cost and hence the price of the good or service. Product quality, both the actual product as well as the packaging quality, is also directly affected by the logistics activities. Lastly, but most importantly, logistics activities directly influence the customer service levels. Therefore, effective logistics could lead to competitive advantage, which in turn is a major source of promotional messages.
Christopher (1998:39) refers to LaLonde and Zinszer's research in defining the scope of customer service. Christopher writes that the scope of customer service can be categorised into three main headings, each with sub-headings:

**Pre-transaction elements**
- Written customer service policy
- Ease of which to do business
- Organisational structure
- System flexibility

**Transaction elements**
- Order cycle time
- Inventory availability
- Order fill rate
- Order status information

**Post-transaction elements**
- Availability of spare parts
- Call-out time
- Product tracing / warranty
- Customer complaints and claims

Source: Stock and Lambert. (2001:8)
The importance of these variants will differ from industry to industry. The aim of business logistics management is to satisfy the needs of customers. It is therefore important to segment the customers, and to analyse the processes involved in the establishment of the needs of those customers. Customer service is key to logistics strategy.

3.2 CUSTOMER SEGMENTATION

This section focuses on market segmentation in terms of industry segmentation and customer segmentation within industries. The market is typically segmented into industries such as the automotive industry, pharmaceutical industry, fast moving consumer goods industry, and mining industry to mention but a few. Unique key performance indicators are then identified for those industries. For example, in the pharmaceutical industry, the following are examples of key performance areas:

- conformance to legal requirements for scheduled medicines;
- cold chain management for temperature sensitive medicines;
- responsive supply chains for life saving drugs;
- accurate management of shelf life and sell-by dates;
- batch traceability; and
- sensitive reverse logistics and disposal procedures.

Industries are then further segmented into customers or customer groupings, with similar logistics needs. Again, in the pharmaceutical industry for example, typical customer segments could be:

- export customers;
- wholesalers;
- state or government tenders;
- private hospitals and/or clinics;
- pharmacies; and
- dispensing doctors.
Each of these customer groupings could potentially have different logistics needs, which will result in a differentiated supply chain offering, or a unique sales proposition. A unique sales proposition includes an offering that will differentiate the business from its competitors. It could include either a value adding, differentiated, or 'branded' offering, which will be sold at a premium, or a lower cost product or service, also known as low cost commodities, which will be more competitively priced.

Bowersox & Closs (1996:59) argues that volume is secondary to profit. Table 3.1 shows how an ABC analysis can be used to classify customers into different categories of profitability.

Table 3.1 – ABC analysis of customer account profitability.

<table>
<thead>
<tr>
<th>Customer</th>
<th>Annual Sales (Rand)</th>
<th>Cost of Sales (Rand)</th>
<th>Annual Profit (Rand)</th>
<th>Ranked by Profit</th>
<th>% of Total Profit</th>
<th>Cum % of Profit</th>
<th>ABC Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>35,000</td>
<td>28,000</td>
<td>7,000</td>
<td>D</td>
<td>80,000</td>
<td>32.00</td>
<td>32.00</td>
</tr>
<tr>
<td>B</td>
<td>40,000</td>
<td>30,000</td>
<td>10,000</td>
<td>J</td>
<td>70,000</td>
<td>28.00</td>
<td>60.00</td>
</tr>
<tr>
<td>C</td>
<td>10,000</td>
<td>8,000</td>
<td>2,000</td>
<td>E</td>
<td>50,000</td>
<td>20.00</td>
<td>80.00</td>
</tr>
<tr>
<td>D</td>
<td>540,000</td>
<td>460,000</td>
<td>80,000</td>
<td>H</td>
<td>15,000</td>
<td>6.00</td>
<td>86.00</td>
</tr>
<tr>
<td>E</td>
<td>250,000</td>
<td>200,000</td>
<td>50,000</td>
<td>B</td>
<td>10,000</td>
<td>4.00</td>
<td>90.00</td>
</tr>
<tr>
<td>F</td>
<td>25,000</td>
<td>17,000</td>
<td>8,000</td>
<td>F</td>
<td>8,000</td>
<td>3.20</td>
<td>93.20</td>
</tr>
<tr>
<td>G</td>
<td>15,000</td>
<td>12,000</td>
<td>3,000</td>
<td>A</td>
<td>7,000</td>
<td>2.80</td>
<td>95.00</td>
</tr>
<tr>
<td>H</td>
<td>30,000</td>
<td>15,000</td>
<td>15,000</td>
<td>I</td>
<td>5,000</td>
<td>2.00</td>
<td>98.00</td>
</tr>
<tr>
<td>I</td>
<td>25,000</td>
<td>20,000</td>
<td>5,000</td>
<td>G</td>
<td>3,000</td>
<td>1.20</td>
<td>99.20</td>
</tr>
<tr>
<td>J</td>
<td>700,000</td>
<td>630,000</td>
<td>70,000</td>
<td>C</td>
<td>2,000</td>
<td>0.80</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Total 1,670,000 1,420,000 250,000 Total 250,000 100.00

Source: This table was developed by the author.

The principle of customer account profitability (CAP) is that businesses ought to make a thorough and highly detailed analysis of their customer base, according to Fawcett, McLeish & Ogden (1992:17). It is critical to ensure that each account, market segment, or range of line items attracts not only enough revenue, but also substantial contribution to overheads and profit, which will justify the costs incurred in servicing that customer.
Figure 3.2 refers to graphical analysis of customer account profitability. The graph indicates that roughly 20% of customers account for 80% of the profits, 50% of the customers account for 15% of the profits, and 30% for 5% of the profits.

**Figure 3.2 – The “Pareto” analysis of profitable customers**

Source: Christopher. (1998:57)

It is important not to treat all customers the same. The 20% of customers that constitutes 80% of the profit ought to enjoy higher levels of customer service and marketing attention.

**To conclude, it is important to establish the needs of each customer or customer grouping known as a customer segment, because only then can one design a service offering in line with the customer’s needs.**
3.3 ESTABLISHING CUSTOMER NEEDS

The key strategic objectives of the marketing function are to penetrate identified market segments, and to generate profitable transactions for the long-term welfare of the business enterprise.

Bowersox & Closs (1996:57) states that any delivery destination is a customer in a business logistics system. They continue that typical delivery destinations are consumer's homes, retail sales outlets, wholesale businesses, warehouses, and manufacturing plants. Both external and internal customer groupings are important. Refer to paragraph 3.2 for a more detailed discussion on customer segmentation.

It is useful to base customer needs analysis on the so-called marketing concept. The marketing concept evolved when the seller-dominated markets were transformed to buyer-dominated markets, after World War II. Lambert and Stock (1993:7) defined the marketing concept as: "The marketing management philosophy that holds that achieving organizational goals depends on determining the needs and wants of target markets and delivering the desired satisfaction more effectively and efficiently than competitors."

It is important to design an enterprise's customer-service policy around the customers' requirements and not on perceptions of what management thinks the customers need. The marketing concept advocates the identification of specific customer needs, and then responds to those needs by focusing all the available resources to uniquely satisfy those customer requirements. Bowersox & Closs (1996:59) are of the opinion that the marketing concept builds on three fundamental principles, namely:

- The customer's needs are more basic than products or services. (The premise is to develop sufficient insight into basic needs so that products and services can be matched to these opportunities. Successful marketing starts with an in-depth study of customers to identify product and service opportunities. If these opportunities can be economically satisfied, then the
potential exists to develop a business relationship. If customers will be satisfied with one colour of appliance, being white, it makes little sense to offer six different colours.

- Products and/or services are only meaningful when they are available and positioned from the customer's perspective. (Customers essentially derive four types of utility from a product or service. These utilities are form, place, time and possession utility. Form utility is when raw materials or basic inputs are converted into a product and/or service that the customer will find useful. Form utility is created by the production, manufacturing, or operations function. Place and time utilities are created by the logistics function. Place utility is the value of availability of goods or services in places where there is a market demand for them. Time utility is the availability of goods or the availability of capacity in the case of a service, when it is needed. Possession utility is created when customers acquire a good or a service, and is created by the interaction between buyers and sales persons. Profitable transactions will only materialise when all four utilities are combined in a timely manner, commensurate with customer needs. These basic utilities form the essence of the market offering).

- Volume is secondary to profit. (It is important to primarily ensure profitability per transaction, prior to increasing the volume of transactions. Therefore, variations in product or service offering are justified if a customer or a segment of customers values the benefits of the alternative offering, and are willing to pay for it. It is equally important to note that customers or customer groupings are often prepared to pay for additional benefits, but not for features alone.)

Customer service audits can be used to accurately establish customer service needs. External customer service audits are used for two purposes, namely to establish the elements of customer service that customers believe are important when making a decision to buy, and also to determine how customers perceive
the service being offered. The latter shall be dealt with in the section about key customer performance indicators (Paragraph 3.6).

According to Stock and Lambert (2001:110), the first step of an external customer service audit is to establish the customer service variables most important to a business’s customers. Stock and Lambert go on to argue that customer service variables that could be important includes:

- average order cycle time;
- order cycle variability;
- number of orders shipped complete;
- in-stock variability;
- accuracy in filling orders;
- projected delivery date;
- advanced notice of shipping delays;
- order status information;
- action on complaints;
- returns policy;
- remote order transmission (computer to computer order entry);
- ability to expedite emergency orders;
- billing procedures;
- palletisation and unitisation of loads for handling efficiency;
- speed and accuracy of invoicing;
- handling of claims;
- availability of inventory;
- freight pickup for distributors wishing to pick up freight at the manufacturer;
- backhaul policy; and
- freedom by the customer to select his or her own carrier.

It is obvious that the marketing and logistics functions ought to collaborate with external customer service audits. Results of customer service audits must be analysed carefully. Customers may rate some variables as very important, but there may be very few or no service providers who are performing to a
satisfactory level. This could indicate opportunities to provide a differentiated service to the market. It is also conceivable that customers may rate a variable as low in importance, because none of the service providers offers this service. Hence, the respondents do not know how to interpret the potential benefits in such a service. If these opportunities are exploited, substantial competitive advantage could be gained, which could lead to increased market share.

3.4 CUSTOMER SERVICE AND PRODUCT LIFE CYCLES

The desired customer service requirements change over time, according to Bowersox & Closs (1996:62 – 66). The well-known product life cycle consists of four basic phases namely: introduction-, growth-, saturation or maturity-, and the obsolescence phase. Refer to figure 3.3 for a graphical presentation, contrasting product sales volumes over the duration of the typical product life cycle.

Figure 3.3 — The typical product life cycle

![Figure 3.3](image)

Source: Bowersox & Closs (1996:62)

During the introduction or launch phase, the marketing goal is to gain a foothold in the market, and the logistics goal is high product availability. A high degree of advertising and promotion will be required. However, it is wasteful and frustrating
to spend much on a promotion campaign, only to be unable to supply when the need arises. Logistics flexibility is required, both in terms of volume flexibility and mix flexibility, due to the unknown nature of demand. Therefore, replenishment planning needs to be contingency based, and the logistics system must have the capability of rapid inventory replenishment, if the product is accepted in the market. The market may also reject the product during this launch phase. Demand is often erratic and shipment sizes are normally relatively small. The demand for high levels of customer service goes hand in hand with high logistics costs.

During the growth phase, the product normally achieves market acceptance, and market penetration expands. Demand becomes more predictable. Customer service levels are planned to achieve the projected profits in line with the customer account profitability principles discussed above, and the customer service policies are formulated. The service levels versus cost of service ratio become more balanced.

During the saturation phase, more entrants are competing for the same market, market share is declining and competition is much more intense. Customer service levels and pricing are adjusted to maximise customer account profitability.

During the saturation phase, service levels are scaled down to endeavour to maximise customer account profitability. This results in reductions in inventory and distribution costs. The customer service level strategy, supported by logistics, is to minimise risk.

### 3.5 CUSTOMER SERVICE DESIGN

Customer service design is about implementation of a business's competitive positioning strategy. Competitive positioning is the strategic intent of a business enterprise in relation to what logistics products and/or service offerings will be offered. The result of a competitive positioning strategy is a unique sales proposition. A unique sales proposition includes an offering that will differentiate
the business from its competitors. It could include either a value adding, differentiated, or 'branded' offering, which will be sold at a premium, or a lower cost product or service, also known as low cost commodities, which will be more competitively priced.

Customer service levels directly influence total logistics costs. The higher the customer service level, the higher the total logistics costs. Refer to figure 3.4 for a diagrammatical illustration of the exponential relationship between customer service levels and total logistics costs.

Figure 3.4 – The relationship between customer service levels and total logistics costs.

From the above, it is clear that one must take great care in designing one's market offering. If one specifies the customer service level too high, the business could fail because the total costs could be too high. If one specifies the customer service level too low, one could loose market share. Richard Lynch in his book, *Corporate Strategy*, (1997:486-489) defines four categories of market based strategic options, being focused cost leadership, broad cost leadership, focused
differentiated leadership and broad differentiated leadership. Refer to figure 3.5 for a diagrammatic representation of the four strategies.

Figure 3.5 – Market based strategic options.

![Diagram showing the four types of market-based strategic options: Lower cost differentiation, Broad cost leadership strategy, Broad differentiation strategy, Focused cost strategy, Focused differentiation strategy.]

Source: Lynch. (1997:491)

One needs to design one’s sales proposition and/or customer value proposition keeping the unique industry and market segment parameters in mind. If for example, a business has only a few products, and the business competes in the pharmaceutical industry that demands high levels of customer service for life saving drugs, it could be advisable to adopt a focused differentiated customer service strategy. It means that the business will design a highly responsive supply chain that will support the customer service level policy of having life saving drugs available within five hours, anywhere in South Africa.

The strategy is focused in terms of target market, because it may only supply a selection of drugs, possibly to a selection of delivery points. Similarly, the strategy is differentiated, because it guarantees a high level of availability, which in turn offers high customer service levels.
If, for example, a business has many products and targets the lower income group, and also competes in the pharmaceutical industry, a broad cost leadership strategy could be advisable. The strategy is broad due to the many products or stock-keeping units (SKU’s), and is cost biased due to the competitive nature of the pricing strategy. The customer service offering would then be commensurate with a low cost supply chain.

Customer service management from a tactical supply chain alignment perspective must also focus on the alignment of the customer service levels and commitments with the supply chain structure as well as with all the processes at the functional level.

Regarding absolute or optimum levels of service, after some point or service level, there will be diminishing returns, as per Christopher (1998:55). Refer to figure 3.6 for a diagrammatic illustration of the so-called S-curve of diminishing returns. It follows logically that one must not endeavour to reach an optimum. In most markets, there is a minimum level of service that is deemed acceptable, which is also known as the 'service threshold'. Marginal improvement above these levels will not yield much better returns.

Figure 3.6 – The 'S'-curve of diminishing returns on customer service.

Source: Christopher. (1998:55)
Once the threshold is passed, increasing returns to service level improvements will occur, until one reaches the point of diminishing returns, where one embarks on service overkill.

### 3.6 KEY CUSTOMER SERVICE PERFORMANCE INDICATORS

Enterprises guided by market opportunity, regard satisfying customers as the key motivational factor behind all activities. Customer service is a measure of how well the logistics system performs in creating time and place utility for customers. Customer service is the output of the supply chain.

The customer service level specification is key to total logistics costs. The total cost concept is the key to effectively managing the integrated logistics process. The goal of an organisation is therefore, to reduce total cost of the logistics activities rather than focusing on each activity in isolation, given a certain customer service specification.

Performance measurement can be divided into internal performance measurement and external performance measurement. Internal performance measurement focuses on comparing business activities and processes with internally agreed standards, budgets, goals, and policies. External performance measurement is necessary to monitor and understand threats, to identify opportunities, to maintain a focused customer perspective and to gain innovative insights from other businesses and industries.

Customer service performance indicators are indicative of a business's performance in the market. Current practise is to interpret the percentage of customer demand activities satisfied as the service level achieved. It is interesting to note that customer service level variables are both internal and external, listed under 'customer service management' and 'market share' respectively. The author compiled the following list of logistics service performance indicators, illustrating the integrated nature of customer service level variables:
• Internal performance measures
  o Customer service management
    ▪ Is there a written customer service policy statement?
    ▪ How is customer service currently measured?
    ▪ What are the performance standards or objectives?
    ▪ How does the internal customer service reporting structure work?
    ▪ How effective is the communication flow?
    ▪ What is the current level of performance?
      • Percentage of orders satisfied over time
      • Percentage of lines delivered per order
      • Percentage of units delivered per order
      • Percentage of orders delivered within the promised cycle time
      • Percentage of returns, complaints, refusals.
  o Reduction in total logistics costs
    ▪ Optimum inventories
    ▪ Organisational harmony
    ▪ Reverse logistics costs
    ▪ Non conformance costs
  o Asset utilisation
  o Increased profit margins
  o Productivity

• External performance measures
  o Market share
    ▪ Conformance to customer service level specifications
    ▪ Customer satisfaction
    ▪ Customer retention
    ▪ Becoming the least cost, preferred supplier
    ▪ Growth in market share
    ▪ Warranties honoured
  o Best practice benchmarking
As discussed in paragraph 3.3, external customer service audits are used for two purposes, namely to establish the elements of customer service that customers believe are important when making a decision to buy, which is important when one endeavours to establish customer needs, and also to determine how customers perceive the service being offered. The latter is used for external performance measurement. The external customer service audit must be complimented by an internal customer service audit. The main purpose of the internal customer audit is to identify inconsistencies between a business's practices and the expectations of its customers, according to Stock & Lambert (2001:117).

3.7 BENEFITS OF VALUE-ADDING CUSTOMER SERVICE

Christopher (1998:43) summarises the benefits in terms of marketing effectiveness as improved market share, better customer retention, and superior return on investment. Refer to figure 3.7.

**Figure 3.7 — The impact of customer service on marketing effectiveness**

Source: Christopher. (1998:43)
It is a long and expensive process to build market share. So-called customer acquisition costs are very high. Once a substantial or desired market share is achieved, it is critical to maintain the market share. One of the methods to achieve this is to retain customers.

Christopher (1996:45) writes that the importance of customer retention can be illustrated by the lifetime value of customers, being ‘the average transaction value, times the yearly frequency of the purchase, times the customer's life expectancy’. He goes on to argue that retained customers are more profitable than new customers. Refer to figure 3.8 for a graphical illustration of this principle.

**Figure 3.8 — Value of retained customers**

![Diagram](image)

Source: Christopher. (1998:43)

It costs less to sell to retained customers, because a business does not have to spend as much on advertising and promotion. Retained customers are also likely to give more of their business to a long-standing relationship with a reliable supplier that has a good reputation with the customer. Customer service
management plays a key role in customer loyalty. The emerging field of study focusing on this aspect of marketing is called Customer Relationship Marketing (CRM).

Customer retention also impacts positively on the financial results. Stock and Lambert (2001:111) says that a 5% reduction in customers lost can result in a 50% increase in profits.

As discussed above, customer retention will improve revenue growth and profitability. Improved customer service will lead to better relations and could also reduce the cash-to-cash cycle, thereby reducing the working capital, and positively impacting on return on investment.

Value-added logistics and customer service could do even more to support the above arguments. The author of this study developed the following examples for the purposes of the study:

- Providing a delivery service:
- providing customer follow up:
- providing financing:
- price marking by manufacturers:
- final packaging:
- vendor managed inventory:
- advanced shipping notices:
- fine picked, mixed store-ready pallets for cross docking:
- precise delivery windows:
- direct store deliveries: and
- point-of-sale presentations.

3.8 CHALLENGES FACING CUSTOMER SERVICE MANAGEMENT

The combination of reduced economic growth and increasing competition is forcing the business world in all industries to concentrate more on efficient and effective deployment of logistics resources. Customer service management is an
example of such a logistics resource. More attention will in future be paid to the continuous objective measurement of a business’s performance, and especially on the assessment of those scarce logistics resources that contribute to the creation of competitive advantage.

With regard to customer service management, Bowersox and Closs (1996:75) further refer to the ever-increasing customer expectations as ‘the shrinking service window’. Refer to figure 3.9 for a graphical presentation of the ‘shrinking service window’. Most customers segments and industries have traditional explicit or implied service levels that were generally accepted as adequate. These days, there is more pressure on reduction in lead times and an improvement in fill rates. The norms of yesteryear no longer apply today. Norms that were order winners some five years ago are merely order qualifiers today.

Figure 3.9 — The shrinking service window

![Graph of the shrinking service window](image)

Source: Bowersox and Closs. (1996:75)

Secondly, another challenge facing the customer service management environment is the pressure to provide infinite choice to customers (or mass customisation, as it is also known in logistics terminology. Consider all the different colours of paint that are on offer these days. It is only possible to
achieve this through a process of manufacturing postponement, according to Bowersox and Closs (1996:472)

Manufacturing postponement is based on the principle of assembly to order. A variety of sub-assemblies are kept in stock, and are only integrated into the final product once the exact customer specification is known. The principle is about postponing the decision and risk to integrate the inventory into the final form. In the paint example above, white base coat and variety of colouring agents are kept at the point of sale. The final mixture is only made at the point of sale, once the customer has placed his/her order. This principle reduces the number of stock keeping units, the overall stock levels as well as the risk of obsolescence.

Thirdly, figure 3.10 illustrates an improvement in service level without an increase in cost. This type of innovative improvement to customer service levels will become the order of the day in the next ten years, if enterprises wish to survive. Shifting the cost curve can be achieved for example by means of a fast, highly responsive communication link, complemented by a fast and reliable transport link, thereby reducing average inventory levels whilst maintaining or even improving customer service levels. Refer to Christopher (1998:55)

Figure 3.10 — Shifting the cost curve whilst maintaining the service levels.

Source: Christopher. (1998:55)
The fourth challenge or major focus point for customer service management will be to identify profitable accounts. In figure 3.11, Christopher (1998:60) illustrates that, using the Pareto analysis for both customers and products; one can conclude that whilst 20% of customers buy 20% of products, then only \((0.2 \times 0.2 = 0.04)\) 4% of customer purchases result in \((0.8 \times 0.8 = 0.64)\) 64% of total profit. (The fundamental argument is that 20% of customers provides for 80% of profits, and 20% of product also provides for 80% of profits.)

Figure 3.11 – Pareto analysis for both customer and product profitability.

![Pareto analysis diagram]

Source: Christopher. (1998:60)

It follows that this type of analysis will become more critical in future, in order to satisfy the right customers and to maintain inventory of the right product. The highest levels of customer service and availability must obviously be offered to key customers ordering key products. This means that customer service management will become much more qualitative in future.
Lastly, Gattorna (1998:47) designed three steps to be followed in order to design customer service offerings per logistically distinctive segment. Refer to figure 3.12. It is fact that ‘one size fits all” is no longer an acceptable approach to be used when designing customer service offerings.

**Figure 3.12 – Customer service offerings per logistics segment.**

- Identify logistics service requirements across the entire base
- Understand the logistical & economic drivers for the requirement of services
- Create a logical grouping for those customers with similar requirements
- Identify opportunities to deliver service to customer groups throughout the entire supply chain

- Identify opportunities to differentiate based on service bundles
- Determine customer’s strategic attractiveness
- Develop specific service strategies that address the strategic attractiveness
- Build a business case for new service offerings, considering cost-to-serve
- Test service offerings with customers

- Align logistics strategies with customer interface strategies such as Sales and Marketing
- Align the impact of the new service strategies with the supply chain configuration and the tactical supply chain activities
- Determine the impact of service strategies on existing outsourcing contracts

**Source:** Gattorna. (1998:47)

### 3.9 CONCLUSION

According to Gattorna (1998:48), the ‘science’ of segmenting customers from a logistics perspective is not different from the traditional sales and marketing segmentation. The only difference lies in the factors used in defining the different logistics segments. These factors will obviously be highly logistics specific and can be broken down into two broad categories namely, customers’ logistics needs and product characteristics. Customers might require regular services and/or emergency order fills, to mention only two extreme examples of logistics needs. Gattorna goes on to argue that finding a balance requires the development of a reasonable number of customers that are similar enough to have common logistics needs. Refer to figure 3.13 for a diagrammatic
presentation of the determination of where to position the fulcrum point on the continuum of “one-size-fits-all” versus “segment-of-one”.

**Figure 3.13 – The customer segmentation balance**

<table>
<thead>
<tr>
<th>ONE SIZE FITS ALL</th>
<th>INDIVIDUALLY CUSTOMIZED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard logistics service provided to all customers</td>
<td>Logistics service customised for every customer</td>
</tr>
<tr>
<td>• Cost-reduction focus</td>
<td>• Customer service focus</td>
</tr>
<tr>
<td>• Simplification of logistics activity</td>
<td>• Provide individually customised service</td>
</tr>
<tr>
<td>• Standardisation</td>
<td>• High cost-to-serve</td>
</tr>
<tr>
<td>• Low cost-to-serve</td>
<td></td>
</tr>
</tbody>
</table>

**Logistically Distinctive Segmentation**

Segment customers according to logistics requirements
- Segments are significantly different
- Segments are large enough to build critical mass per service / value proposition

Source: Gattorna. (1998:48)

Refer to the illustration in figure 3.14. As per Christopher (1998:56) it is clear that the top dotted line graph represents the potential diminishing revenue curve of increasing customer service levels, which was discussed in paragraph 3.5. The solid line graph underneath represents the cost line, which was also discussed in section 3.5. The larger the gap between the potential revenue curve and the cost curve, the larger the margin, as indicated in the shaded area. The challenge lies in maximising the earnings or profitability, by either having a steeper revenue curve, getting quick wins, or by moving the cost curve horizontally to the right, as discussed in section 3.8.
The purpose of this chapter was to describe the area of customer service management. It is in this area of customer service management that this study will explore opportunities of adding maximum value by means of collaborating in the supply chain. It is vitally important that all supply chain members ought to collaborate in an aligned manner, in order to exploit maximum financial gain out of the optimum customer service level.
CHAPTER 4: DISTRIBUTION MANAGEMENT

4.1 INTRODUCTION TO DISTRIBUTION MANAGEMENT

The purpose of this chapter is to describe the functional areas where supply chain collaboration will essentially be effected. In other words, it is in this functional area of distribution management where this study will focus on how collaboration in the supply chain can influence customer service value. Therefore, this chapter will describe and ‘define’ the scope of where collaboration for the purpose of this dissertation will take place. This introduction to distribution management will be followed by discussions on distribution strategy, and an explanation of a distribution plan.

Considering the integrated framework in figure 4.1 (adapted from Anderson Consulting), business logistics consists of eleven inter-related theoretical constructs, all of which supports the business’s high level goal of improved customer service levels, at minimum total logistics costs.

Figure 4.1 – Integrated framework for business logistics.

Source: De Villiers (1999)
Distribution management is dealt with in the above diagram on the strategic and structural design levels of the supply chain, and is about the integration at strategic management level of the outbound theoretical constructs of the supply chain. Most of the elements indicated in figure 4.1 are relevant on both inbound and outbound sides, but for purpose of this study, the following three concepts will be focused on:

- Partnership development;
- channel strategy; and
- network design.

These concepts will be discussed separately in the following pages and although the mentioned concepts will receive specific attention, it is important to confirm that the integration of all the elements are important to ensure that the complete supply chain will be optimised. Integration will be discussed again in section 4.2.1. Products are often commodities that provide very little if any differentiation that could lead to a competitive advantage. Hence, supply chain management or distribution management particularly could provide such a competitive advantage.

This suggests that one should analyse the supply chain from the different perspectives namely a physical network and a trading channel, which is referred to by Lambert, Stock and Ellram (1998:515) in the structural design of the supply chain as 'channel separation'. Figure 4.2 illustrates these two concepts diagrammatically.

On the one hand, one should analyse and evaluate the physical network, such as number and location of depots, but at the same time one should develop appropriate trading channels that will allow collaboration of the distribution function in the supply chain.
4.2 DISTRIBUTION STRATEGY

Logistics strategy, and therefore also distribution strategy, must be derived from corporate strategy, and must be aligned with the corporate strategy to complement and/or support the strategic intent of the organisation. Logistics strategy, and more specifically distribution strategy has developed into one of the key corporate objectives of maximising profitability by means of optimising the balance between customer service levels and total logistics costs. According to de Villiers, in his paper 'Developing a distribution channel strategy', (De Villiers.1999: 2) the high costs associated with logistics activities, competing in mature markets and the increasing concern for customer satisfaction have resulted in management awareness of the growing importance of developing a distribution channel strategy as part of the overall strategic business planning process.

Christopher wrote that many companies have recognised the need to develop more formal approaches to planning. This enables the business to anticipate
change rather than react to it, and assists in the identification of risk in alternative strategies. The basis for the development of viable distribution strategies rests upon the recognition of customer service requirements and the costs of providing that service, combined with an understanding of high-level corporate goals (Christopher, 1986:145-149).

In a three day seminar during 2002 on supply chain management, Christopher also quoted Ralf Borsodi from a 1929 publication, *The Distribution Age*, that in the 50 years between 1870 and 1920 the cost of distributing necessities and luxuries has nearly trebled whilst production costs have gone down by one fifth. Christopher went on to conclude that not much has changed over the last seventy years, what is being saved in production, is lost in distribution.

The Council of Logistics Management (CLM) in the USA defined strategic logistics management as:

"A unified, comprehensive, and integrated planning process to achieve competitive advantage through increased value and customer service, which results in superior customer satisfaction (where we want to be), by anticipating future demand for logistics services and managing the resources of the entire supply chain (how to get there). This planning is done within the context of the overall corporate goals" (De Villiers, 1999).

This definition is equally suitable for developing a distribution channel strategy, although the latter would be focused on managing the resources of the *distribution* section of the supply chain.

Lambert and Stock (1993:72) define a channel of distribution as:

"... the collection of organization units, either internal or external to the manufacturer, which performs the functions involved in product marketing."
Another definition of the distribution channel, quoted by de Villiers (1999), is:

"... the route along which a product and its title (i.e. the rights of ownership) flow from production to consumption."

However, the activities performed by a distribution channel fall into three categories:

Firstly, activities concerned with changes in ownership - that is negotiation, buying and selling; the trading channel.

Secondly, activities concerned with the physical supply of the product including transportation and storage; the physical distribution network.

Thirdly, activities that are auxiliary to or facilitate either of the above such as collecting, disseminating and sharing information, risk-taking, financing and promotional activities that are collaborative in nature.

The question of who should be responsible for the different activities, which is what the development of a distribution strategy is all about, is similar to the typical make-or-buy decision. The services offered vary greatly, and it is important to consider the following control aspects:

- Exclusivity of service;
- range of managerial activities;
- continuity of relationship, commitment and reliability;
- performance measurement;
- cost control through pricing agreement;
- commercial and financial security;
- customer relations; and
- industrial relations.
The physical aspects affecting the outsourcing decision would include:

- Throughput potential and variability;
- operational flexibility;
- service level;
- geographical coverage; and
- product or market specialisation.

Figure 4.3 illustrates some of the permutations of alternative distribution channels available to different markets.

**Figure 4.3 – Alternative distribution channels.**

Source: De Villiers. (1999:fig 5)

The most prevalent form of collaboration in the outbound link of the supply chain is outsourcing to third party logistics service providers. It is not the purpose of this study to deal with the make-or-buy decision, or outsourcing, in much detail, other than to briefly refer to the most important advantages and disadvantages and a short definition of outsourcing:
Outsourcing is contracting with an outside vendor to handle a function that formerly was handled internally, according to Gattoma, J.L. (1998:417.)

According to De Villiers, G., "Third-Party Logistics", Logistics News, Bolton Publications, Johannesburg, June / July. (1997:3-6), the benefits of outsourcing include:

- Spreading the risk;
- exploiting logistics to gain competitive advantage;
- ability to focus on core activities ('stick to the knitting');
- off-balance sheet financing; and
- gaining access to sophisticated technology (specialisation).

De Villiers continues in the same article with the disadvantages of outsourcing being:

- Loss of control;
- lack of cost justification;
- inflexible systems;
- adverse employee relations; and
- change in management.

Wentworth, F. provides an interesting perspective on the matter of outsourcing and recently listed the following arguments in the case against outsourcing services in an article "Outsourcing Services: The Case Against", Logistics & Transport Focus, The Institute of Logistics and Transport (March 2003:57-59).

- Loss of control over quality and service;
- loss of control over efficiency;
- loss of control over the price; and
- loss of control over the future.
Wentworth is of the opinion that outsourcing can be difficult to administer effectively, runs a serious risk of resulting in higher costs and in lower quality and service, and fundamentally represents an abdication of management responsibility.

**4.2.1 PARTNERSHIP DEVELOPMENT**

Much hype is being made of supply chain integration across the extended enterprise. This means that integration must not only happen within the organisation, but also with supply chain partners, upstream and/or downstream within the supply chain, for the benefit of all the supply chain partners. It can hence be derived that the supply chain or extended enterprise consists of more that two businesses, and their financial success depends significantly on each other. They are subsequently all exposed to common risk and can in fact not achieve success in isolation. Such supply chains are commonly found on the outbound or distribution side of business, but can also be found within businesses between business units, and also on the inbound side of business. The scope of this study however focuses on the outbound or distribution side of the extended enterprise.

De Villiers (1999) suggested the following main determinants of channel structure:

- Firstly, the requirements of the final customer.

- Secondly, the capabilities of the freight owner, or originating firm.

- Thirdly, the availability and willingness of appropriate intermediaries to participate in the channel.

Hence, collaboration in the supply chain has been identified as a key performance area for many years. Due to the interdependency of the various supply chain partners, it is imperative that they cooperate in order to share information, reduce risk and maximise the profitability in the long term.
However, businesses do not seek to have strategic supply chain relationships with all trading partners, or with all products. Strategic relations are only sought and implemented for products and/or services where the financial implications are high as well as where the risk of not having the product available will have a significant effect on the performance of the businesses. Therefore, for example, suppliers of routine products like office paper never becomes part of generic supply chains, other than their own supply chain for the primary supply of the paper. This topic will be explored in detail in chapter 6, where a detailed analysis of various levels of supply chain collaboration will be explored.

4.2.2 CHANNEL STRATEGY

Channel strategy is all about the ‘trading channel’ or ‘transactional channel’ that a product follows after manufacturing to the point of consumption. This channel is also sometimes described in industry as the ‘channel of the ownership’ or ‘channel of the title’ of the product to the market.

This trading channel strategy is the commercial channel through which a product’s ownership goes. It is also sometimes referred to as the marketing channel. It is in this trading channel that supply chain collaborative relationships are formed.

Channel strategy will largely be influenced by a business’s market coverage objectives, which in turn is derived from a business’s long-term strategic objectives. The various market-covering options are:

- Intensive distribution
- Selective distribution
- Exclusive distribution

Intensive distribution is commensurate with products of high availability such as fast moving consumer goods, soft drinks and cigarettes for example. An intensive distribution strategy must be complimented with a ‘make-and-ship-
to-stock' logistics concept. The basic premise is that an intensive distribution channel strategy must ensure availability of product at an arms length at all times, with high levels of customer order fill. Intensive distribution strategies often lead to complex arrangements of in-sourced or outsourced supply chain partners, also known as intermediaries. It is between these intermediaries that there is much opportunity to collaborate.

Selective distribution is commensurate with branded products that enjoy some exclusivity. Selective distribution strategies are often used for branded products in the apparel industry such as Nike, Billabong, CAT, Quicksilver, Roxy, Bill, Bad Boy, Bad Girl and toy industry brand names like Birdhouse, Lego, Barbie. Selective distribution is applied to products that the buying public are prepared to travel to buy, and does not have to be available in a convenience store. Other examples of products that are distributed by means of a selective distribution strategy are the so-called white goods such as washing machines and fridges. The logistics concept associated with selective distribution is 'make-and-ship-to-central-stock' or even 'make-to-stock' in the luxury car market such as Daimler Chrysler South Africa's 'C Class' Mercedes Benz. Selective distribution strategies also have intermediaries, and there is ample opportunity for collaboration, both upstream in the inbound chain and downstream in the outbound chain.

Exclusive distribution strategies are aligned with products that customers are prepared to wait for. Fill rates and delivery frequency for these products can be lower and will be acceptable. Typical products are exclusive cars such as Jaguar and Rolls Royce, designer houses, tailored clothing to mention a few examples. The logistics concepts normally employed with exclusive distribution are buy-and-make-to-order as well as engineer-to-order. Although there are normally fewer intermediaries involved with intensive distribution, there is still opportunity to collaborate, but arguably more so upstream in the inbound chain.

It is obvious that the distribution strategy must be aligned with the market requirements, the corporate strategy as well as the strategic marketing
objectives. Rushton and Oxley (1991:58-60) describe the following important factors that affect the decisions when designing distribution channels:

- Market characteristics;
- product characteristics;
- channel characteristics;
- competitive characteristics; and
- company resources.

However, distinction must be made between the commercial channel and the physical flow or network design. Figure 4.2 graphically illustrates the differences between the two concepts. The next section will deal with the network design.

4.2.3 NETWORK DESIGN

Another aspect that influences supply chain configurations, apart from their commercial viability is the network design. Network design is about the physical infrastructure in relation to the location of the raw material sources, and the location of the markets. Lambert and Stock (1993:90-100) mention the following factors that management must consider in this selection process:

- Market coverage objectives;
- Product characteristics;
- Customer service objectives; and
- Profitability.

The centre of gravity analysis is used during the determination of the ideal location of factories, process plants, mines, refineries, central distribution centres, regional distribution centres or retail outlets. A centre of gravity analysis is also called the grid technique by Coyle, J.J, Bardi, E.J. and Langley, C.J. Jr. (1996:457-463.), which is usually covered in detail under heuristic modelling as part of network design and facility location.
In reality, however, many qualitative factors have to be considered to accommodate the complexities of the real world. Bowersox, D.J. and Closs, D.J. (1996:407.) describes some typical location factors used to compliment the theory. The author expanded the list of qualitative factors that ought to be considered to the following list, for the purposes of the study:

- Availability of trained/trainable labour;
- affordable labour rates;
- productivity of local labour;
- local management/trade union relations;
- access to main markets;
- access to linked manufacturers;
- access to production/manufacturing plants;
- utilisation of existing infrastructure or stakeholder investments;
- ready built factories/facilities;
- rental, rates and taxes;
- fully serviced sites;
- public transport for staff;
- local technical education/support facilities;
- attractiveness of local environment for transferred key workers and management; and
- local authority co-operation.

Although the qualitative factors are important, according to Lambert, D.M. and Stock, J.R. (1993:311-318) the centres of gravity provide at least a starting point for working towards the ideal location, but brief reference should also be made to the three most important location theories of Von Thunen, Weber and Hoover. Von Thunen, a German agriculturist, suggested that transport cost minimisation was the most important location determinant. Agricultural production would take place where the farmer would maximise profits and as locations further from the city (market) would incur greater transportation cost, low-value products should be produced near the city.
Alfred Weber, a German economist, developed a theory for the location of industrial production facilities. He assumed equally accessible transportation and constant transportation costs with respect to mass and distance, and defined the optimum location as the point that represents the least-cost location. More specifically, the least-cost site is the location that minimises total transportation costs - for both raw materials and finished goods to the market.

Edgar Hoover, an American theorist, investigated the optimum location of industrial facilities based on cost factors, including demand factors of the market area after a firm determines a location. He considered transportation costs, agglomerative factors and industrial costs. His analysis was based on the fact that transport costs are not linear with respect to distance.

Finally, according to Ballou, R.H. (1987:345-349) the following guideline principles are useful to logistics planning in designing a good logistics network:

- Differentiated distribution:
  Not all products should be provided at the same level of customer service. The same applies for distribution channels. One distribution channel does not suit all applications.

- Mixed strategy:
  A mixed distribution strategy will have lower costs than a pure, or single strategy. It allows an optimal strategy to be established for separate product groups, which often has lower costs than a single global strategy that must average across all products.

- Postponement:
  Logistics postponement is about postponing the risk to pick or label the final assortment into its final sales unit. For example, the final labelling or
packaging of medicines and especially prescription drugs are only done once the pharmacists sell it over the counter.

- Speculation:
  Speculation would be to assume the risk of less than optimum sale units by final packing and labelling prescription drugs into packages of ten tablets per package.

- Cost trade-offs:
  The concept of total logistics cost is widely known and published. Suffice it to say that balancing conflicting cost patterns is at the very heart of logistics management and is essential to strategic planning.

- Consolidation:
  Creating large shipments from potentially small ones is a powerful economic force in logistics planning. Potentially reduced customer service due to increased delivery time must be balanced with the cost benefit of order consolidation. The smaller the shipment size, the disproportionately greater will be the benefits of consolidation, due to lower economies of scale.

- Standardisation:
  Devising interchangeable parts, modularising products, and labelling the same products under different brand names create standardisation in production.

- Specialisation:
  This is about intermediaries that specialise for example only in long haul full truckload transportation. These intermediaries can offer attractive tariffs, due to their specialisation as professional outsourced carriers. Specialisation is a fundamental driver to economic efficiency (Bowersox 2002:96) and thus also critical to collaboration with the view to achieve better economies of scale.
4.3 DISTRIBUTION PLANNING

The most important part of distribution planning consists of the preparation of a suitable distribution plan. This plan is the implementation phase of the distribution management cycle. According to Christopher (1986:149) the distribution plan must consist of the following four strategies, namely:

- **Inventory strategy** including service level policy, replenishment strategy, differential deployment (ABC concept), stock-turn targets and stock location.
- **Warehousing strategy** comprising the number of stockholding points, location of depots, use of public warehouses, warehouse design and layout and materials handling methods.
- **Transport strategy** comprising own account/third-party split, lease/buy decisions, customer pick-up/direct delivery/other options, vehicle utilisation targets, routeing flexibility and modal split.
- **Customer communications strategy** comprising order cycle time policy, differential customer response strategies, order processing systems, damages/claims/returns strategy and order status reporting.

Lambert and Stock (1993:724-726) suggest that the distribution plan should include sections on corporate objectives, marketing strategies and customer service strategies as well as specific detail on inventory, warehousing, and transport and customer communications strategy. The components required for the formulation of the strategic logistics plan include:

- A management overview, describing the logistics strategy in general terms and its relationship to the other major business functions;
- a statement of the logistics objectives related to cost and service for both products and customers;
- a description of the individual customer service, inventory, warehousing, order processing, and transportation strategies necessary to support the overall plan;
• an outline of the major logistics programs or operational plans described in sufficient detail to document plans, related costs, timing, and their business impact;
• a forecast of the necessary work force and capital requirements;
• a logistics financial statement detailing operating costs, capital requirements, and cash flow; and
• a description of the business impact of the logistics strategy, in terms of corporate profits, customer service performance, and the impact on other business functions.

Once the distribution plan is in place, much opportunity exists for creating collaborative arrangements, also during the implementation phase of the distribution management process.

One example of such opportunity is level of agility in the supply chain (to be able to react/respond quickly). This is becoming vital for survival and some brief comments are appropriate at the conclusion of the discussion on distribution planning. Christopher argued during a three day workshop at The Gordon Institute of Business Science (South Africa) in May 2002, that the logistics pipeline from raw material stock to payment for the delivered goods, is often much longer than what we think. The only way to develop an agile supply chain, would be to compress the pipeline by:

• Partnership programmes with suppliers (collaboration);
• reduced non-value internal activities; and
• Vendor-managed inventory.

A value activity is one which creates a benefit for which the customer is prepared to pay, while a non-value activity is an activity which elimination would lead to no reduction of the product's attributes as seen by the customer (e.g. performance, function, quality, perceived value).
The supply chain should be mapped according to activities, which add cost, and those, which add value. Figure 4.4 illustrates the relationship between activities, which add cost, and other activities, which add value. Typical costing activities include raw material stock holding and the customer order cycle, while value activities include production and delivery. The challenge is obviously to compress this pipeline as much as possible by reducing, if not eliminating, non-value adding time. Not faster, but doing fewer things.

Figure 4.4 – Supply chain mapping

Source: Christopher. (2002)

Christopher concluded with the following description of the agile organisation by saying that it:

- Focuses on understanding customer and consumer value preferences and re-engineers processes around them;
- uses performance measures that are market-facing and process related, e.g. time-to-market, cost-to-serve, customer retention;
- encourage cross-functional, team based working; and
- seeks to manage the "extended enterprise".
4.4 CONCLUSION

The integration of the outbound elements of logistics to function efficiently in the supply chain is not easy. Poirier (1999:23-25) suggests that there are no easy answers. The road to a leading-edge position requires focus, dedication and hard work. He introduces the interesting concept of different levels through which a firm evolves to achieve advanced stages of supply chain management and to materialise the rewards that should result from a drive for optimisation. There is no way an organisation can avoid evolving through these levels of progression.

The levels are as follows:

Firstly, the internal focus ought to be on sourcing and logistics improvements. The procurement manager, under pressure, usually drives this.

Secondly, the organisation will be striving for internal excellence. The information systems manager or the supply chain leader usually drives the process at this level.

Thirdly, the focus will shift externally on network construction where the business joins forces with external firms to seek network savings.

Fourthly, industry leadership is achieved on the highest level where the true leaders are making the most progress.

In conclusion, logistics strategy, and more specifically distribution strategy, has developed into one of the key elements contributing to the corporate strategic objective of maximising profitability by means of optimising the balance between customer service levels and total logistics costs. Collaboration in the supply chain, and more specifically collaboration in the distribution channel is one of the methods to enhance customer service, whilst
simultaneously reducing total logistics costs, thereby repositioning the exponential cost of service relationship.

The focus of this study is to determine the relationship between supply chain collaboration and customer value. As stated in the scope of this dissertation in paragraph 1.5, this study focuses on the outbound side or the distribution link in the supply chain, and more specifically on the different ways of adding customer value in the outbound link of the supply chain. It is in this outbound trading channel that supply chain collaborative relationships are formed. Supply chain collaboration is one of the ways of adding customer value. There are various ways of supply chain collaboration, and these different options will be explored in the chapter 6.
PART 3: RESEARCH RESULTS

CHAPTER 5: FACTORS TO CONSIDER WHEN DESIGNING THE CUSTOMER VALUE PROPOSITION

5.1 INTRODUCTION TO THE CUSTOMER VALUE PROPOSITION

The purpose of this chapter is to discuss how customer value is derived from business activities as well as to explore the factors that influence customer value positively and / or negatively.

Member organisations of supply chains ought to seek to enhance customer value, through the delivery of customer service levels commensurate with customer expectations. Firstly, in order to know and understand the logistics expectations of a group of customers, it is of vital importance that a business segment the customers into groups that have similar logistics needs. Refer to figure 5.1 for a diagrammatic presentation of generic competitive strategies, according to Porter (1980). A business cannot serve all markets, or as the classic adage goes, be all things to all people.

Figure 5.1 - Generic competitive strategies

Porter's (1980) generic competitive strategies apply equally well to strategic marketing as to supply chain value proposition positioning. Porter (1980) argues that there are essentially three different strategies to choose from, namely cost leadership, differentiation or a focused strategy. The focused strategy must be on either cost or differentiation.

If a business implements a cost leadership strategy, they will be able to defend themselves against most competitive forces like rivalry from within the industry between competing entities, the threat of potential new entrants, as well as the threat of substitution. This principle also applies similarly to supply chain value propositions. Normally, supply chains base intensive distribution strategies on cost leadership principles. The challenge however is that there can only be one or possibly two cost leaders per geographical area.

Another alternative is to implement a differentiation strategy. Such a strategy will focus less on costs and more on seeking to offer something of value that nobody else can offer. The value proposition must have a real or perceived benefit to the customer, rather than just a feature. Sources of real or perceived benefits in traditional strategic marketing are durability, reliability, unique product features, high service levels, and meaningful after sales service backup, lower life cycle costing, and lower total cost of ownership to name only a few examples. These examples apply equally well to supply chain value propositions.

A business or supply chain can also follow a focused strategy, whereby they focus on offering a unique value proposition, either based on cost competitiveness or differentiation, but then only to a smaller group of customers, also known as a niche market segment.

Secondly, once customer segmentation is done, businesses need to benchmark the needs or service levels required by each customer segment. Benchmarking is an ongoing process of measuring critical key performance
indicators like customer service level indicators and comparing those against competitors and industry leaders. Forming benchmarking clubs or vocational societies, with typically an industry or a product grouping as the common denominator, can be used to facilitate benchmarking.

Thirdly, businesses must design a customer value proposition, commensurate with the needs of the segment, and in line with the benchmarked service levels. If these steps are not done, business enterprises may face the following two problems:

- If businesses design customer value propositions that are below the expectations of the customer segment, they will lose market share and erode shareholder value because customers will find their service offerings to be lacking.
- Alternatively, if these businesses design their customer value propositions to exceed the market norms without real customer benefits, they will also find themselves eroding shareholder value due to their total logistics costs being too high, especially in comparison to their competitors.

For example, two retail chain sales outlets decide to strategically position themselves in two very different market segments. Retail chain 'A' follows a narrow differentiated strategy, offering fewer stock-keeping units with guaranteed freshness. The other retail chain sales outlet, retail chain 'B' follows a broad cost strategy, offering a wider variety of stock-keeping units at affordable prices. Customers wishing to buy fresh products from chain 'A' will find it acceptable if the retail outlet does not always have inventory for sale, because such shortages guarantees fresh produce. When chain 'B's customers experience stockouts, they will be very agitated, because the value proposition of chain 'B' is based on an intensive distribution strategy, meaning that products must always be readily available (at an arms length), at affordable prices.
Therefore, customer value does not mean maximum customer service levels, but rather a balance between the logistics requirements of the market segment and the value proposition offered by the supply chain.

### 5.2 FACTORS THAT INFLUENCE CUSTOMER VALUE

It was stated earlier that no business enterprise could be all things to all people. Treacy and Wiersema (1996) discuss the key issues upon which companies will fail or succeed in, when delivering unique value in accordance with their so-called value disciplines model. Figure 5.2 below illustrates Wiersema's value disciplines model. This model is based on three key performance areas namely operational excellence, product leadership, and customer intimacy.

Operational excellence, in keeping with lean manufacturing principles, has cost leadership as a focus. Treacy and Wiersema (1996) argue that key performance areas in operational excellence include low cost structures, reliable deliveries, rationalised assortments, strong central control, waste reduction, standardisation, and higher economies of scale.

**Figure 5.2 – Value Disciplines**

![Figure 5.2 - Value Disciplines](image)

Source: Treacy and Wiersema. (1996)
Product leadership focuses on new product or service development and innovation and moreover being the first one to do so. Key performance areas of product leadership include technological innovation, innovative learning, superior brand image, and reduced time to market.

Customer intimacy is the key parameter that leads to customer value added, and is the focus of this study. Customer intimacy includes the ability for mass customisation, integrated customer and/or supplier systems, collaborative arrangements and risk sharing.

Christopher (2002) describes the concept of customer value as the condition that occurs when the perceived benefits received by the customer exceed the costs of ownership. Perceived benefits hinge around product and service attributes. Perceived cost for products or sacrifice for services offered refers to transaction cost, life cycle costs and risk.

In the paragraphs that follow, the drivers of customer value added will be discussed in detail. The detail is based on Christopher's (2002) theory of deriving superior customer value. Refer to figure 5.3 for a diagrammatic presentation of the key performance areas that drive customer value added.

Figure 5.3 – Factors that influence customer value added
5.2.1 QUALITY

Christopher (2002) refers to product quality and service quality as the *augmented product*. Figure 5.4 below illustrates the value of a core product enhanced by factors other than those that are normally directly associated with the quality of the delivered commodity.

**Figure 5.4 – The augmented product**

Source: Christopher. (1998:44)

Product and/or service quality hinges around whether customer requirements are being exceeded. The days of conformance to standards winning orders are long gone. The fundamental principle at stake here is that non-conformance will lead to a product or business being disqualified from a certain market or market segment. Exceeding customer requirements can lead to winning orders. Therefore, continuously exceeding customer expectations will lead to a sustainable competitive advantage.

Key performance areas for measuring customer quality are in line with many lean manufacturing and being world-class principles. These parameters include *meeting customer requirements, fitness for purpose, process integrity*
supported by statistical process control, continuous improvement and elimination of waste.

Meeting customer requirements is about so-called perfect orders. A perfect order according to Christopher (2002) is achieved when customer requirements are met in full, and must conform to the following criteria; namely on-time delivery, orders filled completely, and error free delivery documentation and invoicing. In the eyes of the customer, there are only two types of service levels namely 100% or 0%. On time delivery refers to the number of deliveries that meet the customer's original request in relation to the number of orders received during the same period. Order fill also known as in-full delivery, refers to the percentage of orders shipped complete on the first shipment. Line fill refers to the percentage of ordered lines, which are shipped complete with the first shipment. A supply chain either delights a customer or it does not. It is an unforgiving world, what could be worse than having an on-time delivery, with all the lines filled, but the delivery note and/or invoice does not correspond to the actual delivery? Therefore a customer is either satisfied or not satisfied and an order is either perfect or not.

Fitness for purpose in essence refers to conformance to specification. Here, one must differentiate between technical specifications and functional specifications. Using technical specifications when functional specifications will suffice can potentially erode much customer value. For example, if a customer describes an expected outcome in infinite detail, exactly what must be delivered, the customer (who wrote the technical specification) cannot reject such an order once it is delivered even though the product may not fully meet the customer expectations, because it met the detailed technical specifications. Alternatively, if a customer draws up a functional specification, and the delivered product or service does not fully meet the requirements of functional specification, the customer can reject the product or service, thereby saving much customer value.
Furthermore, in a supply chain, it makes sense to rather specify the functional specification as a customer in the supply chain, detailing expected outcomes of the product or service. It follows that collaborating with the upstream supply chain partner, more customer value can be added by making use of the upstream supply chain partner’s specialist knowledge to design the technical specification that will better meet the expected outcome.

An example of a technical specification is when a customer orders a chair and issues fully detailed technical drawings to the supplier. If the supplier delivers this chair, and the chair does not functionally conform to the customer’s requirements, the customer has no option but to accept it, because the chair conforms to all the technical requirements. Alternatively, if the customer specified the required functions that the chair must perform during its operational installation, then the chair manufacturing specialist could have designed a more suited solution, using superior specialist knowledge, and added customer value in the process.

Process integrity supported by statistical process control refers to the continuous on line monitoring of quality. This process supports the proverb that quality cannot be inspected in, but must be built in. Statistical process control (SPC) monitors conformance to process parameters on line, and records are kept for later reference. For example, the Perishable Product Export Control Board (PPECB) approves all refrigerated vehicles that carry products for export purposes. When these carriers transport products for export, temperature graphs of the cargo temperature throughout the time in transit are recorded and kept to ensure product quality and integrity, thus adding customer value.

Anyone can make a mistake, but it is unacceptable not to have control. Supply chain partners expect or even demand of their upstream partners to have SPC in place thereby ensuring process integrity. To quote another example, Ford Motor Company has embarked on a world wide campaign
called the Q1 supplier approval scheme. Built into this scheme is SPC. If suppliers do not conform, they will simply not be part of the Ford supply chain.

_Continuous improvement_ is about a continuous urge to improve quality and a climate of willingness to do something about opportunities. This is in keeping with the 'Kaizen' principles listed below: (Ten Have, Ten Have and Stevens, 2003:105)

- Personal discipline;
- teamwork;
- improved morale;
- quality circles; and
- suggestions for improvement.

Kaizen literally means change (kai) to become good (zen), (Ten Have, Ten Have and Stevens, 2003:105.) The Kaizen attitude supports a continuous process of incremental improvements within the organisation. These incremental improvements support the notion of total quality management, and focus on changing to become better in all aspects of the organisation. Organisations must embrace speed of change, especially at the operational level. The sustainability of changes at the operational level is key to the organisations long-term success. It is here that the Kaizen philosophy could potentially make its greatest contribution, due to its simplicity and ease of implementation.

All five the Kaizen principles work together to create a positive spiral that results in improved business processes. A culture of high levels of self-discipline also contributes towards continuous improvement programs being maintained on a sustainable basis. Although the focus of continuous improvement programs such as Kaizen are mainly on the operational level, teamwork amongst all levels is a key building block. Cooperation and teamwork is required to evaluate and implement suggestions for improvement. These suggestions for improvement are mainly received at the operational level through quality circles. Suggestions are often a result of a
positive business culture or climate, as well as high levels of morale. However, if suggestions are not managed, this will result in a rapid decline in morale and a negative spiral that will result in lower levels of quality.

According to Bowersox, Closs and Cooper. (2002:84), part of total quality management supported by the philosophy of continuous improvement, is the continued upward escalation of customer expectations regarding supplier capabilities. Performance which meets customer expectations one year, may result in extreme dissatisfaction the next year, as customers increase their expectations regarding acceptable performance levels.

Hines et al (2000:37) adds that the last key performance area for measuring customer quality, namely the elimination of waste is focused mainly on the reduction in business waste in the operational environment as a result of overproduction, waiting time especially at capacity constraints, excess inventory, rejected products, excessive movement and double handling.

5.2.2 SERVICE DIFFERENTIATION

In recent years, some firms have discovered that there is another commitment that can be made to gain true competitive advantage through logistical performance. This commitment is based on recognising that a firm's ability to grow and expand market share depends on its ability to attract and hold the industry's most successful customers. (Bowersox, Closs and Cooper. 2002:86). The real key then, to customer-focused marketing, lies in the organisation's ability to use its performance capabilities to enhance the success of those customers. This focus on customer success represents major commitment toward accommodating customers. According to Christopher (2002), key performance areas that are vitally important for service excellence are customer support, product support, flexibility to meet customer demands, and flexibility to meet market changes.
The customer satisfaction platform, in particular customer support, is built on the recognition that customers have expectations regarding performance and the only way to ensure that customers are satisfied is to assess their perception of performance relative to their expectation levels.

Customer support shifts the focus from expectations to the customers' real requirements. Requirements are frequently downgraded into expectations due to perceptions of previous performance, word-of-mouth, or communications from the enterprise itself. This explains why simply meeting expectations may not result in happy customers. For example, a customer may be satisfied with a 98 percent fill rate, but for the customer to be successful in executing his/her own strategy, a 100 percent fill rate on certain stock-keeping units may be necessary.

Product support is another key performance area vitally important to service levels. Technical product support is critical, especially taking into account the potential value of the 'augmented product'. For example, a leading automotive glass supplier Shatterprufe, has recently developed on-line technical support to glass fitment centres, for installation and other technical related queries, thereby enhancing their value proposition to both their customers, being the fitment centres as well as for their customer's customers, the motorist being the end user of automotive glass. Claim analysis and procedures is another aspect of product support that adds value to customers. Claims must be analysed in order to determine trends, their causes, how long it takes to resolve them, and how an enterprise makes it up to a disappointed customer. (Service recovery procedure). The next aspect of product support is the commitment and involvement by suppliers in the development of end technology. For example, in order to sell more electricity during off peak times, ESCOM sponsored the development of battery driven cars during the nineties. The strategy was to get end users to charge their vehicle's batteries during the late hours of the night and early hours of the morning, thereby selling ESCOM's capacity during low demand periods.
Flexibility to meet customer demands is the next parameter to be examined. Clearly, a customer success program involves a thorough understanding of individual customer requirements and a commitment to focus on long-term business relationships having high potential for growth and profitability. Such commitment cannot be made to all potential customers. It requires that firms work intensively with customers to understand requirements, internal processes, competitive environment, and whatever else it takes for the customer to be successful in his/her own competitive arena. Furthermore, it requires that an organisation develop an understanding of how it can utilise its own capabilities to enhance customer performance. The example below, according to Bowersox, Closs and Cooper (2002:87) describe how the customer success philosophy developed at Dow Plastics, a division of Dow Chemical, enhanced customer value.

- INDUSTRY INSIGHT 3-3 “WE DON’T SUCCEED UNLESS YOU DO”

In 1988, Dow hired the Anderson & Lembke ad agency, which is known for its cutting edge creativity. Dow had just realigned its various plastics businesses into a single unit called Dow Plastics. Anderson & Lembke’s tasks were to publicise the new entity and assist in its competitive positioning.

Dow’s customers and its competitor’s customers were surveyed. They ranked Dow a distant third behind industry leaders DuPont and GE Plastics. However, customers were unhappy with the service level they received from all three. “Vendors peddled resins as a commodity,” says Hans Ullmark, president of Anderson & Lembke. “They competed on price and delivered on time, but gave no service.”

These findings, confirmed by about 200 qualitative interviews, led to a positioning strategy that exceeded the standard customer service guarantee
to promise customer success. This strategy, which began as a tag line for a division, grew in influence until it became the core of the parent company's mission statement: "We don't succeed unless you do."

It was concluded that whether a customer was using Dow plastics to manufacture grocery bags or complex aerospace applications, Dow Plastics needed to help them succeed in their markets. A campaign was developed which included print ads, direct-mail pieces, and supportive materials. The targeted communications promoted the different virtues of Dow Plastics' disparate products, but all carried the tag line "We don't succeed unless you do." This slogan and underlying philosophy tied the units together and created a brand identity for the division. The campaigns were key in changing Dow Plastics from a sales-oriented company into a market-oriented company—from selling plastics to selling customer success. Dow has since become the most preferred plastics supplier.

The last parameter supporting service differentiation is flexibility to meet market changes. Market changes are imposed onto both business enterprises and their customers alike. The response to these imposed market changes is important. According to Bowersox, Closs and Cooper (2002:87), in many ways a customer success program requires a comprehensive supply chain perspective on the part of logistics executives. This is most easily explained by examining the elements depicted in figure 5.5. The typical focus in basic service and satisfaction programs is that the firm attempts to meet standards and expectations of next-destination customers, whether they are consumers, industrial end users, intermediate or even internal customers. How those customers deal with their customers is typically not considered to be a problem. From a supply chain perspective, a customer success program explicitly recognise that logistics executives must alter this focus. They must understand the entire supply chain, the different levels of customers within that supply chain, and develop programs to ensure that next-destination customers are successful in meeting the requirements of customers down the
supply chain. If all supply chain members adopt this perspective, then all members share in the success.

**Figure 5.5 – Moving towards customer success**

How can we help our customers to win?

- **Own enterprise**
- **First tier customer**
- **Customer's customer**

We shall do whatever 'they' tell us to do

This is not our problem. (WRONG)

Source: Bowersox, Closs and Cooper. (2002:88)

Bowersox, Closs and Cooper (2002:87) go on to state that to ensure that a customer is successful requires a firm to reinvent the way a product is produced, market distributed, or offered for sale. In fact, collaboration between suppliers and customers to find potential avenues for success may result in the greatest breakthroughs in terms of redefining supply chain processes. It is enough to say that such arrangements are not possible without significant amounts of information exchange between the involved businesses to facilitate an in-depth understanding of requirements and capabilities. However, one important way that many firms have responded to the challenges of customer success is through the development of value-added services.

5.2.3 TOTAL LOGISTICS COST
Total logistics cost consists of many aspects, but for the purposes of this study, a trade-off between the following cost aspects namely design and engineering, conversion, quality, distribution, inventory and total cost of ownership will be discussed.

It was previously mentioned that one must differentiate between technical specifications and functional specifications. Using technical specifications when only functional specifications are required can potentially erode much customer value. It must be encouraged at all times to use the skills of the upstream value adding partner in a supply chain to take ownership of the detailed technical specifications. This is a value-adding service that is offered by upstream supply chain partners.

Another important point to take into account is the effect of design and engineering changes on costs. Figure 5.6 compares the cost of a design change. This is dependent on when the change is implemented during the life cycle of the product. The earlier the changes are made known, the more possibilities can be accommodated, and the lower the cost when making the change. The later the changes, the fewer the opportunities and the more expensive it becomes to effect changes. This is particularly applicable in the development of new products or services, or during the redesign or re-introduction of existing products or services. For example, if a motorcar manufacturer plans to launch a new model, they obviously need to stock up their dealer network. It will be very costly to change anything, even something as insignificant as the wiper blades, because of all the re-work and inventory redundancy cost.
Conversion cost is where the form utility is created. Form utility is created when material changes in form and/or function. The material is worth more once it has changed its form. For example, individual ingredients used during the production of cold drinks are not worth much to a potential consumer of Coca Cola. However, this conversion process must be aligned with the rest of the supply chain in order to add maximum customer value. Aspects that are critical to take into account are demand alignment, location of the value adding facility, lot quantities, specifications, and process capability, to mention a few.

Quality costs are made up of prevention cost also known as quality assurance cost, inspection costs or sometimes quoted as quality control costs, and the cost of non-conformance which often results in corrective action costs. Quality costs are normally expressed as a percentage of sales, and can become significant, especially when the full cost of non-conformance is taken into account.
Distribution costs are made up of warehousing costs, inventory carrying costs, information systems costs, picking costs, material handling costs, transportation costs, and the cost of reverse distribution especially when recycling the product. Reverse distribution of non-conforming products will form part of non-conformance costs. Distribution was discussed in detail in chapter four of this study.

Inventory is the life-blood of any supply chain. Measuring inventory levels can therefore be compared to measuring the blood pressure of a supply chain. Most of the companies that produce commodities carry inventory, and it is common belief that most of them carry too much inventory. From inventory analysis one can learn that for some stock-keeping units one could have many years of inventory cover, whilst other items run out-of-stock regularly.

The result of this is that inventories tend to have a life cycle of their own. If not controlled, they go up but seldom go down. And we never seem to know why. A top-executive, quoted by Plossl and Welch (1979:3) said once:

"Inventory goes up because sales are up! Inventory goes up because sales are down! When in hell does inventory ever go down?"

The answer to this question, again according to Plossl and Welch (1979:4), is:

"When top management says it must".

But top management has an ambivalent attitude towards inventory. On the one hand they see it is a liability that costs a lot of money. On the other hand they realise it can be an asset, by which customers can be satisfied or production can run smoothly. In both cases, potential customer value can be added, but if the inventory levels are not carefully controlled, customer value could be eroded. As a company president stated in Silver and Peterson (1985:3):
"I agree that inventories play a crucial role in my operations. But I cannot lose sight of the other side of the coin. While inventories are something I need to survive, they also represent stuff I can get stuck with."

Refer to figure 5.7 for an example of Nabisco using pro-active inventory management as a competitive advantage to add customer value. In economies where interest rates are high, and the inventory carrying costs are equally high, this principle is even more important, and if managed well, could lead to a significant contribution towards customer value added.

Figure 5.7 – Strategic inventory management leading to customer value added

Money's never been more expensive. So you can't afford to tie yours up in warehouse inventory of crackers and cookies. With Nabisco you won't.

- Nabisco delivers crackers and cookies direct to your stores - You save on transportation costs.
- High monthly return - Almost 39% return on investment based on a 24% gross margin and 2.08 turns per month.
- Maximum ROI - Nabisco provides two studies to help you maximize profits on your entire cookie and cracker investment. Computerized ROI study plus a space management study.
- No overstocking - Deliveries are adjusted to individual store management.
- Nabisco products usually sell through before payment is due.

Here are other ways Nabisco helps you beat the money crunch.

- Fast turnover - An average of 25 times a year up to double the average of the other cookies and crackers.

For more information on how Nabisco can help you. Ask your Nabisco Biscuit Division Sales Representative for profit making details for your stores. Free of charge or obligation.

NABISCO, INC.

BISCUIT DIVISION

NABISCO. We're even more appetizing during the money crunch.

Source: Christopher. (2002)

Is inventory a liability or an asset? This is an interesting question! In the Western world (Europe, United States of America) inventory is always seen as asset but in Japan it is seen as a liability. In Europe and the United States of America inventory was considered as a hedge against uncertainties. To
make up for wrong forecasts, set up times, breakdowns of machines or quality-problems, inventory was considered as "Just-in-Case" inventory. The Japanese's Just-in-Time philosophy considered inventory as an excuse for bad management performance. It covered the real problems like the one mentioned above. For example, nobody feels the problem of bad forecasting if there is enough inventory. The Japanese focused on reducing inventories to discover other problems, and to solve those problems instead of increasing inventory to cover the problems. Although the Japanese approach has merit, it is still believed that inventories are inevitable. Listening to the Just-in-Time proponents, one might get the impression that businesses can run without inventory. However this is not true. Only under hypothetical conditions where every production facility in a supply chain has an infinite production capacity, can a supply chain work without inventory. Otherwise, one always needs Finished Goods inventory, one will always carry Work-in-Process, and one will need Raw Material inventories. Businesses, which demand Just-in-Time deliveries from their suppliers, tend to forget that these suppliers usually need some inventory to react to the customers' demand. Although collaborative planning can reduce inventory levels considerably throughout a supply chain, inflexibility in production capacity (capacity constraints) will result in certain inventories. So in general, it can be concluded that production environments cannot operate without stock.

These inventories should, however, be as "low as possible" and they are only useful if they have a purpose. Under these circumstances, inventories really are an asset but excessive inventories are a liability. The right amount of inventory is not that easy to calculate and it depends on many factors. But as stated, inventory can be reduced considerably if management knows how to control it. One of the major flaws in inventory management is that management often thinks of inventory as one grand total. On the Balance Sheet there is one figure for inventory, sometimes divided in Raw Material, Work-in-Process and Finished Goods. This might be interesting from a financial point of view but not from a logistics point of view. Logisticians and Top Management should want to know why the level of inventory is there and
for what purpose. Management is interested in the function of the inventory and to determine whether the present inventory level is adequate to perform the relevant function. Now that one has established that the right level of inventory is an asset, one also needs to know what kind of inventories can be distinguished.

The last aspect of total logistics costs is *total cost of ownership*. Often, the focus falls on the acquisition price, and the total cost of ownership is ignored. Figure 5.8 below is a diagrammatic presentation that shows the total cost of ownership depicts an iceberg. The acquisition cost is visible, but there are many hidden costs that will influence the total cost. For example, if one investigates the Nabisco example used earlier in this chapter, one might find that the price distributors pay for Nabisco products might be higher than other competing brands, but the total cost for the consumer could be less due to the value added service offering of Nabisco.

**Figure 5.8 - Total cost of ownership diagram**

Source: Christopher. (2002)
5.2.4 LEAD TIME

Product availability is critical if an organisation is to compete in an ever more demanding environment. Figure 5.9 below is a diagrammatic presentation of Compaq's market share in comparison to their product shortages.

Figure 5.9 – Market share declines when product shortage exists: Compaq

Source: Gattorna. (1998:191)

According to Christopher (2002), the key performance areas that need to be managed regarding lead-time management are time to market, response to market forces, and inventory management throughout the supply chain.

The first key performance area namely time to market can be split into two construct, from concept to delivery and from order entry to delivery.

Concept to delivery time deals with the lead-time to develop a product and/or service from inception until the end user can benefit from it. The key aspects that directly influence the time from concept to delivery are design time,
engineering time, conversion time and delivery time. Refer to figure 5.10 for a diagrammatic presentation of these four stages.

Figure 5.10 – Concept to delivery lead-time

Source: The author developed this diagram for the purpose of this study.

Figure 5.10 also illustrates three phases namely the investigation phase, development phase and delivery phase. The investigation phase overlaps with the design stage, engineering stage and the conversion stage. The development stage straddles from the design stage to the development of delivery concepts. The delivery phase focuses mainly on the integration of the converted service offering to the end user.

There are many possibilities to investigate during the design stage, and the cost to change during the design stage is relatively low. During the design stage of product or service development, all concepts are developed in concept only with the view to test their respective compatibility with the
conversion and delivery processes, as well as to determine their respective contributions to the business objectives.

During the *engineering* stage, the number of concepts are reduced to only a few viable options, and the focus is on detailed product and / or process design with the view to gain maximum compatibility with the other business processes and maximum competitive advantage from the product or service.

The *conversion stage* focuses on aspects such as prototype developments, advanced development models, pre-production samples, and pilot or trial runs. Products and / or service offerings are tested under realistic operating conditions in order to test their compatibility with business processes and their respective contribution to customer value.

The last stage in the development process is the *delivery stage*. This stage focuses on launching the product or service, ensuring high product availability and awareness, and customer support training aspects.

From the above, it is clear that time to market from *concept to delivery* is a very complex process, and could lead to a substantial competitive advantage, if it is done well.

The other component of *time to market*, namely from *order entry to delivery*, is less complex and easier to manage. Refer to figure 5.11 for a diagrammatic representation of a customer's perspective of the total order cycle. All these steps are largely under the control of the business enterprise, and can therefore be managed. However, of great concern is the variation in order lead-time.
Source: Stock and Lambert (2002:148)

Refer to figure 5.12 for a diagrammatic representation of the potential aggregate variation in lead-time of a customer's order. This is obviously of great concern, as no enterprise can accept a delivery commitment of between 3.5 and 20 days.

Source: Stock and Lambert (2002:149)
The goods flow in a supply chain from supplier to manufacturer to distributor to the retailer, before the consumer buys them in the end. If the consumer's demand is not known to the upstream supply chain partners as depicted in figure 5.13, these upstream partners cannot plan and will therefore either carry inventory at their own risk, or run the risk of delivery delinquencies. Either way, the cost to the supply chain is very high.

Figure 5.13 – Goods and demand information flow in an isolated supply chain

![Diagram showing goods and demand information flow in an isolated supply chain](image)

Source: Stock and Lambert (2002:153)

When supply chain partners share information, especially demand information, smoother replenishment cycles, lower risk of stock-outs, and enhanced customer value will be the result. Figure 5.14 illustrates how the sharing in information by means of collaboration can potentially ensure the smooth flow of product amongst role payers in a supply chain.
Figure 5.14 - Goods and demand information flow in a collaborative supply chain

Source: Stock and Lambert (2002:153)

Response to market forces is essentially a philosophy, but must be supported by competent people and adequate business processes, capable of responding to market needs. Shorter product life cycles make response time critical. Refer to figure 5.15 for a graphical presentation of how slow responses to market forces can lead to obsolete inventory in a study done by Professor Martin Christopher of Cranfield University, in the Sarah Lee Clothing Company in Europe.
Figure 5.15 – Response to market forces

As is illustrated in figure 5.15, it is clear that late entrants or slow responders to market opportunities run the risk of including obsolete inventory in their supply chains, because the market demand might have dropped off by the time that their product reaches the market.

Therefore, strategic inventory management is critical to lead time management. Having inventory available at the right place in the supply chain is the key. Christopher (2002) argues that an enterprise’s demand and supply parameters defines their logistics concept, and these business parameters influence the extended enterprise’s macro inventory strategy. Refer to figure 5.16 for a presentation of how supply and demand characteristics can influence the enterprise’s supply chain concept.
Under conditions where the market is predictable and long lead times are acceptable, one would adopt a lean manufacturing approach. In lean manufacturing, one would eliminate waste as much as possible, and optimise one's manufacturing economies of scale by minimising set-up cost and maximising economic run lengths. One would typically not carry any finished goods inventory, but rather accept a logistics concept of 'purchase and make to order'.

It is therefore important to explain the various logistics concepts, and how the demand and supply parameters influence these so-called logistics or supply chain concepts. Hoekstra and Romme (1992:7) refer to the relationship between inventory control points and various supply chain concepts. Figure 5.17 illustrates six supply chain concepts, and their correlation to the demand and supply parameters.
Under conditions where the market is unpredictable but relatively long lead times are acceptable, one would adopt a strategy of postponement. Postponement is when one delays the decision to integrate the assembly into its final form, thereby reducing the risk of obsolete inventory. One would not carry finished goods inventory, but rather carry sub-assemblies or component parts, so that these can be assembled into the right configuration as required by the customer. Many of the leading automotive manufacturers make sub-assemblies like body-, engine- and, interior parts and then paint the body, assemble the right engine and interior trim commensurate with the customer requirements. This logistics concept is called ‘assemble to order’ and can accommodate mass customisation as experienced in the automotive industry of late, whilst maintaining very low levels of finished goods inventory.

Under conditions where the market is unpredictable but the market also demands relatively short lead times, one would adopt a strategy of agile replenishment. Agile replenishment is associated with a logistics concept of
'make to central stock' and is used for example in the 'white goods industry' where demonstration models are being displayed at the sales centres, but the finished goods inventory is kept centrally. Once the sales centres conclude a sale, they will then notify central distribution who will deliver. With this logistics concept, responsiveness is high, whilst finished good inventory is centralised and relatively low, according to Maister's square root law (Fawcett, McGleish and Ogden 1992:71).

Under conditions where the market is predictable and demands relatively short lead times, one would adopt a strategy of continuous replenishment. Under these market conditions, one typically follows an inventory strategy such as this in the fast moving consumer goods (FMCG) industry where product must always be available at arms length, otherwise customers might switch to competing brands. This inventory strategy is complimented by a 'make and ship to stock' logistics concept, and the results are that inventory is normally kept at decentralised inventory control locations, thereby guaranteeing availability. The trade off is made between the inventory carrying cost and the cost of lost sales due to non-availability.

5.3 CONCLUSION

Management has to segment markets logistically, and benchmark service levels and customer value propositions prior to designing a customer value proposition. Customer segmentation by using Porters’ generic competitive strategies are based on determining what is unique about a value proposition, whether those differences or unique aspects could lead to superior customer value, and if those unique aspects are sustainable.

Organisations that are serious about adding value to their customers need to fully understand their customers’ business strategic intent and collaborate with their customers. The focus is on exceeding expectations, customer retention, lifetime value, reliability and delegation of power to employees. Organisations must consider which value means most to their customers. Organisations
must also determine how many customers form part of this grouping and if it is financially viable to service this particular niche. Furthermore, organisations must establish their competitive situation with regard to what their opposition offers, and how competitive they are as an organisation. In the final analysis, each supply chain member and the supply chain as an extended enterprise must decide what it is that they want to do better.

The primary study objective is to research the correlation between customer value and supply chain collaboration. This chapter focused on the factors that enhance customer value. One such factor is supply chain collaboration. In the next chapter, supply chain collaboration and the various ways in which supply chain role players collaborate will be discussed.
CHAPTER 6: SUPPLY CHAIN COLLABORATION

6.1 INTRODUCTION TO SUPPLY CHAIN COLLABORATION

There are many ways of enhancing customer value. One of those ways is supply chain collaboration. The purpose of this chapter is to provide an overview of what supply chain collaboration is, what types of supply chain relationships one can expect to find, how these various types of collaborative relationships are formed, and the advantages and disadvantages of the various types of supply chain collaborative relationships. The scope of this dissertation focuses on the outbound side of the supply chain. Therefore, the examples used in this chapter will also be from the outbound side or distribution link of the supply chain.

According to Bowersox, Closs & Cooper (2002:9), supply chain collaboration follows logically from integrated management. Integrated management has more of an internal focus, whereas supply chain collaboration has more of an external focus. The challenge lies in the balance between a competitive environment that forms the basis of free market economies, and the desire to collaborate with certain members of a supply chain. Bowersox, Closs & Cooper (2002:9) go on to argue that this need for collaboration has led to the supply chain as a primary unit of competition. Supply chains compete with each other for customer loyalty. Whilst price collusion and forming of business cartels are not in keeping with free market philosophies, cross organisational sharing of operation information, technology and risk are ways to increase competitiveness.

This desire to collaborate in an organised way led to the concept of the so-called extended enterprise. According to Bowersox, Closs & Cooper (2002:11), the central thrust of enterprise extension expanded managerial influence and control beyond the ownership boundaries of a single enterprise to facilitate joint planning and operations with customers and suppliers of choice. The fundamental belief is that collaborative behaviour between firms that integrate business processes will maximise customer impact, reduce overall risk, and greatly improve efficiency. By
jointly designing business processes and empowering specific supply chain partners, collaboration will reduce duplication such as repetitive quality inspection for example. Such extended enterprise integration brings new challenges regarding measurement, benefit, risk sharing, and conflict resolution according to Bowersox, Closs & Cooper (2002:12).

6.2 AREAS OF SUPPLY CHAIN COLLABORATION

According to Bowersox, Closs & Cooper (2002:11), enterprise extension is built on two paradigms namely information sharing and process specialisation. These concepts ought to be complemented by the integration of demand and supply management.

6.2.1 INFORMATION SHARING

The extent of information sharing should go beyond the sharing of sales history. Supply chain partners should voluntary share operating information and jointly plan strategies. Included in the scope of information sharing should be the planning of special sales promotions, new product introductions, and phasing out of obsolete products and/or services to mention only a few examples. Information sharing is not about sharing historical data, but more about the willingness to share information of strategic importance about future activities to enhance joint planning, according to Bowersox, Closs & Cooper (2002:11). This will lead to higher responsiveness of the supply chain as a whole, whilst reducing the risk of single participants of the extended enterprise.

Figure 6.1 diagrammatically represents the amplification or knock-on effect of demand on one supply chain partner on another partner upstream in the supply chain. In the example, company ‘A’ is closest to the consumption, and company ‘C’ furthest removed. Company ‘A’ could be aware of a 20% fluctuation in demand, but by not sharing the information, company ‘B’ could experience a larger fluctuation and company ‘C’ an even larger fluctuation in demand. Even though company ‘A’
is relatively good in forecasting demand, there is a distinctive dislocation between the actual market demand and the demand patterns of company ‘C’.

**Figure 6.1 – Supply chain dynamics: the ‘Forrester’ effect**

[Diagram showing supply chain dynamics]

*Source: Christopher (2002)*

Longer supply chains place higher risk on the upstream partners. Refer figure 6.2 for a diagrammatic presentation of this knock-on effect.

**Figure 6.2 – Longer supply chains put the supplier at risk**

[Diagram showing longer supply chain risks]

*Source: Christopher (2002)*
Businesses participating in a supply chain have specific functions to fulfil. They all have strategic goals to achieve, and for example by collaborating on information sharing they can reduce the risk related to inventory positioning and increase the velocity of the cash to cash cycles.

6.2.2 PROCESS SPECIALISATION

Bowersox, Closs & Cooper (2002:12) states that the purpose of process specialisation is to ‘design the overall supply chain business processes in a manner that identifies a specific business’s responsibility and accountability to perform each element of essential work in a manner that maximises the overall result’. This will eliminate non-value adding work by businesses in a supply chain.

It follows that process specialisation should contribute towards customer value added, because these supply chain members should by nature of their specialisation be best equipped and skilled to do the best job. A business ought to only outsource a business function, if the outsourced partner can perform the function better than the original business itself.

6.2.3 SUPPLY AND DEMAND INTEGRATION

Synchronised supply and demand planning is achieved through sharing information through a process of integrated sales and operation planning. Refer to figure 6.3 for a diagrammatic presentation of how the maturity of such a sales and operations planning process can grow from an innocent co-existence to an excellent and tightly integrated business process. This sales and operations planning process will start within a single organisation, and then grow to a level of integration between supply chain partners that will lead to synchronous replenishment of demand within the supply chain or the extended enterprise.
An integrated supply and demand planning process consists essentially of a trade-off of two data bases or information sets, being supply related information and demand related information. One of the obstacles related to this integration process is the source of the information sets often comes from two extremes on the continuum of customer demand on the one extreme and supplier capacity on the other. Information ownership is another obstacle. Role players often do not want to share information, because they cannot see the benefit. This collaboration formation process will be discussed in section 6.3.

The type of information needed for supply planning consists of manufacturing input on capacity and capacity utilisation, procurement requirements such as lead time and supplier capacities, inventory levels at key inventory location points throughout the supply chain, transportation requirements, regulations and limitations, and network design parameters such as warehouse locations, capacities.
The type of information required for demand planning consists of marketing input on the product and/or service regarding historical sales data, anticipated customer requirements and demand patterns, planned special sales promotions, prices increases, changes in credit terms, and the interpretation of market surveys, to mention a few. Refer to figure 6.4 for a diagrammatic presentation of how the integration of supply and demand planning can lead to a competitive position.

Figure 6.4 – Integrated supply and demand planning processes

Source: Cilliers (2003)

From the above diagram, one can clearly see that the first outcome of an integrated supply and demand planning process is an unconstrained demand forecast. An unconstrained demand forecast includes all potential sales revenue without taking any capacity or other limitations into account. This unconstrained demand forecast is often used for medium term master capacity planning. However, capital, labour, inventory and capacity limitations need to be factored into the equation, hence the constrained demand forecast. The constrained demand forecast is the primary input to the master plan. A sales and operations coordination process that in essence determines the master production schedule.
then follows the master plan, from an operational execution perspective. From the financial planning and control perspective, the master plan is cascaded down into a budget.

6.3 THE COLLABORATION FORMATION PROCESS

According to Lorange and Roos (1992:27) strategic collaboration must be structured in such a way that it is the strategic intent of both parties that the alliance will succeed. That does not however mean that the strategic intents must be the same. In fact, the strategic intents of the two organisations are often different but complimentary and reconcilable, especially in the long-term. Lorange and Roos (1992:27) go on to quote the example that one party may have the strategic intent of active internationalisation whereas the other may intend to take a more passive role as a supplier of technology.

In an interview with Mr Solly Engelbrecht from the SPAR Group, he explained that the SPAR Group formed a collaborative partnership with National Brands Limited (NBL). SPAR’s strategic intent was to increase distribution through their Central Distribution Centre (CDC), whilst simultaneously increasing profitability. National Brands’ strategic intent was on the other hand to reduce distribution costs and increase their service levels. In order to align the two strategic intents, Mr Schalk van der Merwe from National Brands confirmed that it was agreed upfront that SPAR’s improved profit and National Brand’s reduced costs would be pooled and shared. The increased throughput through SPAR’s CDC would come from snacks being distributed through the CDC and not direct to the retail sales outlets. National Brands planned improved customer service levels by reducing the number of drops by distributing through the CDC. The net effect of this collaboration was National Brands became SPAR’s supplier of the year, and both parties enjoyed a cost reduction and profit improvement.

Engelbrecht also added that through information sharing, NBL delivered more reliably to their allocated delivery window, and SPAR turned NBL’s delivery vehicle
around much quicker. This collaborative project has led to other collaborative projects that include reverse logistics and Electronic Data Interchange (EDI), according to van der Merwe.

Strategic intent is very much the topic of discussion during the initial phase of the formation process. Refer to figure 6.5 for a diagrammatic presentation of the formation process of collaborative agreements. During this initial phase, the analytical and political dimensions have to be dealt with in such a way that clear and realistic intents are established and that the foundation for trust is laid.

The analytical considerations are based on an early assessment of the strategic match between the strategic intents of the prospective parties to the potential collaborative agreement. According to Lorange and Roos (1992:30), it is also necessary to establish:

- the relative strength of the leadership position of the prospective parties to the agreement;
- what are the broad readily apparent benefits from this alliance to each party?
- how can the parties compliment each other to create common strengths from which both can benefit?
- how important is the alliance within each other’s corporate portfolio?
- are there problems with the relative closeness to the core business to the other partner?
- do the alliance partners join forces in an offensive manner, or is this a case of the sick joining up with the sick?
- is there sufficient cultural similarity?

Answers to the above questions could provide an indication of whether there is a potential strategic win-win between the parties to an alliance.
The political considerations are based on an early assessment of the stakeholder blessing ensuring that the majority of internal and external stakeholders agree with the general benefits, and thus sponsor the idea of a collaborative agreement, according to Lorange and Roos (1992:32). Questions that must be answered according to Lorange and Roos include:

- addressing executive fear of reduction in power base or corporate irrelevance;
- the fear of restructuring and subsequent job losses by employees;
- hidden agendas, and
- the extent to which an alliance could present a threat to any person or group.

It is therefore critical to line up the support of the key internal and external stakeholders early on in the collaboration formation process. External stakeholders are owners, board members, banks, unions, interest groups, regulatory institutions and Governments.
The intensive phase is made up of internal support and a strategic planning process. The strategic planning process consists mainly of plotting the supply chains of the potential partners, and seeking synergies and opportunities whereby combination and/or collaboration on certain activities could create synergies and potential strengths. For example, teams of scarce scientists could work together upstream in the supply chain and will avoid duplication. Similarly, prospective partners may consider to combine efforts with regard to the downstream side of their supply chains by coordinating distribution systems, developing joint sales promotions, and/or combining product lines. According to Lorange and Roos (1992), this major analytical step will culminate in the development of an overall strategic plan for the alliance as it is intended to emerge and a combined and continued effort by the prospective parties.

Lastly, before the official alliance can be formed, the political considerations must be revisited to finally ensure internal support and alignment. This is essentially a process of final internal consultation and "selling", to achieve maximum buy-in, from line management. The newly proposed idea of collaboration must be clearly explained to all operational functions that could be actively involved in participating in the collaborative agreement. The new business venture must be clearly explained and sufficiently motivated, in sufficient detail, throughout the organisation. Confidentiality considerations, especially during the early formation period may be problematic, especially in instances where stock market insider trading is at risk. Hence, under South African Law, cautionary announcements are issued when such negotiations begin or are anticipated, but without disclosure of who the parties are that could be involved.

The collaborative agreement is then formed. In the next section, the different type of collaborative agreements will be discussed.
6.4 TYPES OF SUPPLY CHAIN RELATIONSHIPS

There are many forms of supply chain relationships. These relationships are built on mutual trust, shared information, risk sharing, joint planning, visionary leadership, supply chain measurements that encourage the right behaviour, and agreed conflict resolution.

The various types or methods of collaboration in the supply chain will be discussed along two continuums namely, the degree of vertical integration and the degree of interdependence (refer figure 6.6).

The degree of vertical integration refers to collaboration among buyers and sellers in the supply chain, (Coyle, Bardi and Langley, 2003:589). This refers to the traditional linkages between organisations in the supply chain such as between retailers, distributors, manufacturers and suppliers of components and/or raw materials. Coyle, Bardi and Langley further argue that organisations can share plans and provide mutual visibility that can lead to changed behaviour. They go on to quote collaborative planning, forecasting and replenishment (CPFR™) as an example of vertical integration that helps organisations in the supply chain to better align supply and demand by sharing critical information such as sales forecasts.

The degree of interdependence refers to the level of financial risk shared between the parties to the collaborative agreement. This statement is commensurate with the interpretation of the Council for Logistics Management (CLM) definition of supply chain management as “the systematic, strategic coordination of the traditional business functions and tactics within a particular company, and across businesses within the supply chain, for the purpose of improving the long term performance of the individual companies and the supply chain as a whole”.

6.4.1 INFORMAL COOPERATIVE VENTURES

Informal cooperative ventures refer to relationships between retailers, distributors, manufacturers or suppliers, mainly to achieve improved economies of scale or process specialisation. Coyle, Bardi and Langley refer to informal collaboration also as horizontal collaboration, and continue to argue that informal collaboration can lead to the reduction of hidden costs in the supply chain. Informal or horizontal collaboration can also be between competing organisations.
6.4.2 FORMAL COOPERATIVE VENTURES

According to Coyle, Bardi and Langley, (2003:428) a formal agreement between two or more independent organisations begins with a service agreement based on trust, cooperation, and shared risk.

In an interview, Mr Austin King of Tibbett and Britten Africa (TBA) quoted the following example of a formal cooperative venture:

"Cargo Africa and Tibbett and Britten Africa entered into a formal cooperative agreement to use the new 'Volumax' trailers designed and patented by Mark Long of Tibbett and Britten. Through this formal agreement, these trailers would be made available to an owner-driver scheme managed by Cargo Africa. As both Cargo Africa and Tibbett & Britten operate trucking brokerage businesses, some of the less optimised routes would be shared. In order to share these routes, the back section of the vehicle would be allocated to the one broker, and the front section to the other. This sharing opened the way to a renewed focus on collaborative planning. Through collaborative planning, it was indicated that there was a need to agree the profit allocation that would be shared with the owner-driver and each of the brokers. The profit per route is not constant and is also seasonal. It was agreed that the profit share for the owner-driver was in direct proportion to the person's input and would therefore not be shared. The profit above the agreed tariffs was mainly due to seasonal trends and would therefore be shared between the brokerage organisations."

Many formal cooperative ventures start with a period of open accounting. Outsourcing decisions are often based on potential savings. Open accounting often forms the first stages of outsourcing when organisations agree in principle to work together, but find it difficult to quantify the potential benefits to the parties. The organisations then enter into a period of open accounting, whereby they continue to conduct business using the current logistics business process, with the view to establish the real or actual cost of rendering the service. Once the actual
cost of the service is established and agreed, the accounting is closed, the specialist service provider re-engineers the logistics business process and the guaranteed savings are passed onto the freight owner.

An example of open accounting in practice was between Tibbett and Britten Africa and Nabisco SA. In an interview with Mr Leon Schikerling of TBA, he confirmed that TBA was contracted to take over the distribution function of Nabisco SA. TBA took over the management of the Nabisco SA distribution centre in Chloorkop, and guaranteed a saving in distribution costs to Nabisco SA. (The Chloorkop distribution centre receives product from the two Nabisco factories in Chloorkop and Olifantsfontein respectively). (The actual level of saving is obviously proprietary information.) The two parties then entered into an open accounting period to establish the actual cost of operating the distribution function.

Open accounting is used by all owner-driver schemes, which is one form of outsourcing.

The most common form of a formal cooperative relationship is outsourcing of logistics services, mainly in the form of third party logistics (3PL) service provider agreements. In many cases, it is economically more attractive to outsource services to supply chain partners. This holds particularly true due to potential economies of scale that can be achieved, even more so when logistics services are not part of a businesses core competency or core activity. Examples of such logistics serves are transportation and warehousing.

Logistics outsourcing decisions are some of the most difficult and strategically the most important to make. Refer to figure 6.7 for a broad framework that can be used for logistics outsourcing decisions.
The outsourcing decision is based on a trade-off between how critical logistics performance is in a particular market, and whether logistics is a core competency of an organisation. It is obvious when to outsource and when to perform the activity in-house. However, when the logistics performance is a critical success factor in the market, and the organisation does not have a core logistics competence, then outsourcing with retention of control is absolutely essential. This is even more important if the outsourced service provider can potentially build a direct relationship with the market. The risk is then that the service provider could take over the marketing functions, and the product or service owner could then be forced into becoming a low cost supplier to the service provider. Furthermore, when an organisation has a core logistics competency, but the logistics performance is not a key success factor, the organisation could use such an opportunity to gain larger economies of scale as a spin off to cross subsidise those market segments where logistics performance is critical.
6.4.3 JOINT VENTURES

Utah Harnischfeger reported in the Financial Times of 27 January 2001, “Shares in Iscor, the South African minerals and metals group, gained 5 per cent on a report that the ThyssenKrupp was interested in its loss-making Saldanha steel joint venture. Iscor dismissed the report as speculation. ThyssenKrupp declined to comment, but industry sources said the German steel maker was taking a look at the plant to judge its potential for co-operation, possibly on a small scale. Like its competitors, ThyssenKrupp, the world’s fourth-largest manufacturer of flat steel, is negotiating with various steel manufacturers about co-operation. Saldanha Steel is a joint venture between Iscor and the state’s Industrial Development Corporation.”

Joint ventures often bring about economies of scale that is not always achievable with individual or stand-alone businesses. Joint venture agreements allow firms to explore synergies in manufacturing, business processes, trademarks, technology transfer, and technical assistance, provided by the license holder or licensor to be used by the licensee. Maximising such opportunities to explore synergies will inevitably lead to added customer value.

Benefits of joint ventures include allowing domestic firms more control in terms of global distribution, reduction in large capital outlays, reduction in individual risk, increased flexibility, and global joint ventures are not bound by tariff barriers and import quotas which enhances their collective market coverage.

Risks associated with joint ventures include agreements that cannot be terminated quickly which could border on irrevocable agreements, licensees could become the future competition should the licensor want to remain active in the market.

Types of joint ventures that are commonly found according to Lorange and Roos (1992:44-50) are ad hoc pool alliances, consortiums, project-based joint ventures and full-blown joint ventures.
6.4.4 PARTNERSHIPS

The most closely integrated partnerships are often referred to as strategic. Strategic alliances are more prevalent in the air transport industry. Business Day of 9 January 2001 reported in their headlines that American Airlines planned to buy financially troubled Trans World Airlines, as part of a complex deal that could clear the way for antitrust approval of United Airlines' pending takeover of US Airways.

American Airlines agreed to acquire most of Trans World Airlines' assets for about $500m. That would bring an end to the financially troubled TWA. The deal, along with a pact under which American Airlines would buy some of US Airways' assets, from United Airlines, would leave American and United Airlines in control of about half the US's air travel market.

Another very popular form of partnering is the so-called fourth party logistics partnerships. Refer to figure 6.8 for a framework of fourth party logistics partnerships. The abbreviation for the term fourth party logistics is 4PL™, and is a registered trademark of Anderson Consulting.
The role of the 4PL™ is to outsource to the best in class third party logistics providers (3PL’s) on behalf of the primary client as well as the other clients that may join the collaborative alliance. The role of the partners are to provide set-up equity that mainly consists of intellectual property, to devise the logistics strategy, to re-engineer the business processes, to do best practice benchmarking, to ensure information and communication technology enablement, to manage the customer service levels, to manage the suppliers and to act as the principle logistics advisor to the primary client.

The primary client normally provides the financial backing for the start-up equity as well as the working capital. The primary client also provides operational infrastructure and expertise at its own sites and effectively procures the logistics services from the 4PL™ organisation. The 3PL’s in turn owns the logistics assets and provide best in class logistics services like warehousing and transportation to the 4PL™.
Fourth party logistics collaboration agreements are most likely to succeed when there is more than one primary client, thereby ensuring scale and scope benefits from the outset. Furthermore, when more than one primary client invests in a 4PL™, an immediate perception of 4th party independence is created, according to Gattorna (1998:432).

According to Gattorna, (1998:416-418) some of the disadvantages of third-party logistics (3PL) have been addressed in the relatively new concept of fourth-party logistics, which incorporates the advantages of both outsourcing and insourcing to provide maximum overall benefit. It differs from traditional 3PL arrangements in four main respects:

- The 4PL™ organisation is often a separate legal entity established as a long-term contract between a primary client and one or more partners;
- it acts as a single interface between the client and multiple logistics service providers;
- all aspects of the client's supply chain are managed by the 4PL™ organisation; and
- it is also possible for a major third-party logistics provider to form a 4PL™ organisation within its existing structure.

Current references on 4PL™ in South Africa are almost non-existent. The only successful 4PL™ relationship that the author could establish in South Africa is the relationship between Ford Motor Company of South Africa and DNA Supply Chains. DNA Supply Chains provide the distribution management function of all the parts and accessories to the Ford distribution network in South Africa. DNA Supply Chains do not own any logistics infrastructure such as transport fleets and/or warehouses, and outsource all these functions to best-in-class service providers.
Reverse marketing or supplier development is another form of partnership development, but focuses mainly on the in-bound supply chain and does hence not form part of the scope of this study.

6.4.5 RESTRUCTURING

The restructuring of the European civil aviation industry with the transformation of Airbus into a single corporate entity will be completed by the end of February 2001, as reported in Business Day's headlines of 10 January 2001. Business Day went on to report that the European Aeronautic Defence and Space Company, and BAE Systems of the United Kingdom have met all conditions to close the deal, including the granting of regulatory approvals.

Unbundling is another form of restructuring of the corporate relationships between business enterprises. Unbundling normally takes place when conglomerates grow too large and subsequently suffer from diseconomies of scale. A diseconomy of scale is when businesses are too large and communication channels, command chains, and bureaucratic red tape becomes a hindrance.

Privatisation of mainly state owned businesses is another example of restructuring. Privatisation is the reverse of nationalisation. Privatisation is when a state owned business is being sold off or even listed on a stock exchange as a whole entity like ISCOR or TELKOM, or in sold off in part such as South African Airways that sold 20% stake to Swiss Air.

6.4.6 MERGERS

One reads daily of mergers between business, Universities, Technicons and such. A merger is when two or more parties join forces to form one legal entity that will own, manage, and operate the assets that were previously operated separately as per Coyle, Bardi and Langley (2003:682). The new entity will also design the future strategic intent as the new team. Although one party could play a leading role, the
one does not dominate the other. In mergers, the degree of vertical integration is large, and the degree of interdependence is absolute.

Mergers are not unique to supply chain management or supply chain collaboration. However, standing collaborative arrangements could be at risk after a merger.

6.4.7 ACQUISITIONS

Acquisitions are very similar to mergers, but the essential difference between acquisitions and mergers is that in an acquisition, the one party takes control of the other. The impact on the supply chain is also similar to that of mergers.

6.5 CONCLUSION

Collaborative agreements are becoming increasingly important as a long-term response towards globalisation of businesses, and to the need to learn and adapt quickly, gain access to new markets, and diffuse new technologies, (Lorange and Roos 1992: Executive summary). Collaborative agreements are built on trust, synergy in strategic intent, the extent to how central the collaborative agreement is to the overall make-up of the partners' businesses, and the relative leadership position of the respective parties. The collaborative agreement formation process evolves through two stages, namely the initial phase and the intensive phase. Each phase is concluded by a 'go-no-go' decision.

The most confusing term seems to be 4PL™, for which many contradicting explanations exist. Anderson Consulting were the originators and used the following definition: "A 4PL is a supply chain integrator that assembles and manages the resources, capabilities and technology of its own organisation with those of complementary service providers to deliver a comprehensive supply chain solution". (Anderson Consulting)
Supply chain management superseded 4PL™, and was later complimented by the supply chain partnering approach. Integration of supply chains became the most efficient way to take cost out, but requires a partnership rather than an arms length contract, because of the need of the strategies of the partners to be aligned.

The purpose of the study is to illustrate the relationship between supply chain collaboration and customer value. This chapter illustrated the areas of potential collaboration, how these various types of collaborative agreements are formed, the types of supply chain relationships that are found, and the advantages and disadvantages of the various types of supply chain collaborative agreements.

In the next chapter, the correlation between customer value (as per chapter 5) and supply chain collaboration (as per chapter 6) will be discussed. Benefits and disadvantages of collaboration will be discussed by referring to examples of where collaboration added value or not.
CHAPTER 7: THE RELATIONSHIP BETWEEN SUPPLY CHAIN COLLABORATION AND CUSTOMER VALUE

7.1 INTRODUCTION

This chapter serves to illustrate the correlation between supply chain relationships and customer value added. The chapter will focus both on the positive aspects of supply chain collaboration that adds to customer value, as well as those aspects of supply chain collaboration that can potentially detract from customer value.

Robert Sabath and John Fontanella (Supply Chain Management. July / August 2002:25) argues in their article entitled the unfulfilled promise of supply chain collaboration that collaboration has arguably the most disappointing track record of all supply chain strategies. The theory has been widely published, but proved difficult to implement. They go on to say that part of the problem was an over reliance on technology, a failure to differentiate the most profitable customers from the rest, and a lack of trust.

Bowersox and Closs (1996:61) quote the 'Proctor & Gamble' and 'Wal-Mart' alliance as an example of how two businesses joined forces to exploit logistics as a business strategy. Senior management at both firms was able to envision a new way of conducting business that has served as an impetus for rewriting the 'best practise' textbooks. While the results of their cooperative alliance are truly impressive, the fact remains that both firms separately developed extraordinary individual commitments to logistical competency prior to striking their joint partnership. The following quote offer a glimpse of how John Smale, the retired Chairman of Proctor and Gamble saw the fundamentals of the collaborative relationship as quoted in an article Proctor and Gamble re-writes the Marketing Rules (Fortune, November 6, 1989:46)

"Distribution and transportation have been so successful at Wal-Mart because senior management views this part of the company as a
competitive advantage, not as some afterthought or necessary evil. They also support this philosophy with capital investment. Many companies do not want to spend any money on distribution, unless they have to. Our organisations spend money because we continually demonstrate that it lowers our costs. This is a very important strategic point in understanding Wal-Mart.

I have the growing conviction that the product supply concept is perhaps the single most important thing that can influence our profit performance over the next several years”

7.2 COMMON MISSTEPS WHY SUPPLY CHAIN COLLABORATION FAIL TO ADD TO CUSTOMER VALUE

The basic principle of building strong relationships with all links in the supply chain as part of a unified response to market demands sound noble, according to Sabath & Fontanella (Supply Chain Management Review. July / August 2002:26). The purpose of it all, in the end, is to get these supply chains or extended enterprises to compete with one another, but the myth is that by virtue of the competitive nature of the environment, all inefficiency will be squeezed out of the supply chains, just to remain competitive. However, this does not always happen. The literature research indicated the following seven common factors amongst various collaborative arrangements that failed to add customer value:

* 7.2.1 BUSINESS CULTURE AND LEADERSHIP

Enterprises that have learned to collaborate internally have a much better chance of creating collaborative relationships outside the organisation. Another factor to consider is the blend of organisational structure and collaborative culture within a participating business. If supply chain management is a line function, directly controlling the resources, service delivery could be guaranteed, as opposed to when supply chain is a coordination function within a matrix organisational
structure. This will be complicated even further when a business does not have a culture of internal collaboration.

Sabath and Fontanella (Supply Chain Management Review. July / August 2002:26) quotes four stages of cultural migration. Refer figure 7.1 for schematic presentation of the four levels or stages of development. Businesses seldom act against their own best interest. Therefore, the migration towards collaboration is self-centred.

Firstly, Sabath and Fontanella describe a level one organisation as a self-focused operation. This type of organisation brings little strategic value to a relationship. These are typically small organisations that are technologically unsophisticated. They often run off manual or so-called legacy transactional systems and execution costs are expensive. These organisations typically operate in commodity markets.

**Figure 7.1 — Self interest determines the level of cooperation**

Secondly, Sabath and Fontanella describe level two organisations as basic information sharing organisations. These types of organisations share information on inventory, order and delivery status, forecasts, and purchase orders. Electronic Data Interchange (EDI) is commonplace with these organisations. Third party logistics service providers (3PL’s) fall into this category. Participants are not considered to have great strategic importance, so standardised business processes are key to minimise switching costs. Therefore, relationships and intent are unilateral.

Thirdly, Sabath and Fontanella describe a level three organisation as a special relationship organisation. This is the relationship that most organisations wish to have with key customers and suppliers. The relationships are bilateral and both parties consider the relationship to be of high strategic value, due the relationship’s capability to provide immediate returns.

Lastly, Sabath and Fontanella describe level four organisations as true collaborators. This type of relationship does not yield immediate or short-term value, but either or both organisations view the collaborative relationship as essential for the long-term future. Sabath and Fontanella quote joint development of new products, supplier development, strategic sourcing, and the sharing of intellectual and physical assets as examples. Shared processes and personnel are often found and this type of relationship may lead to mergers or acquisitions.

Collaborative agreements include issues such as service levels, inventory policies, capabilities, information sharing policies, and process specialisation agreements at the time of negotiating the agreement. These issues are hugely affected by changes in management that brings various interpretations of the agreement to the fore. Another complication is the various responses by the different management styles to changes in trading conditions, competitor reaction, new product introductions, and new business process introductions. Sabath and Fontanella conclude that most organisations today are building trading relationships that are positioned somewhere between levels one and two. The value derived from the relationship does not contribute greatly to the various
companies' strategic objectives, nor are the partners unique enough to warrant special investment or treatment.

7.2.2 LACK OF A COMMON UNDERSTANDING OR DEFINITION

Sabath and Fontanella (Supply Chain Management. July / August 2002:25) defines supply chain collaboration as "maximum value at a minimum cost, by having all pieces of the supply chain in harmony as if they were one, totally under your own control". Problems encountered are that everyone's understanding of 'harmony' and value attached to the significance of the potential benefit of 'harmony' is not the same.

Another problem is the different interpretations of 'your own' control. This varies on a continuum from personal autocratic decision making on the one extreme, to an informal arrangement whereby consensus decisions are shared in a joint platform on the other extreme, with joint decision-making and collaboration somewhere in the middle.

7.2.3 LACK OF INFORMATION SHARING

By sharing information upstream and downstream, the additional visibility enables the extended enterprise to reduce inventory, offer premium services, coordinate and prioritise production scheduling, expand gross or macro (shared) revenues, reduce cash to cash cycles, raise customer satisfaction through focused response, support flexibility, balance resources, and support outsourcing. By keeping the cards close to the chest, some or all of the aforementioned benefits could be lost.

According to Coyle, Bardi and Langley (2003:83) there have been numerous industry initiatives over time that have attempted to create efficiency and effectiveness through integration of supply chain activities and processes. Examples of these initiatives are electronic data interchange (EDI), short cycle manufacturing, vendor-managed inventory (VMI), continuous replenishment
planning (CRP), and efficient consumer response (ECR). Coyle, Bardi and Langley continue by arguing that all the above-mentioned fall short of expectations, particularly in its ability to integrate supply chain activities among the many participants.

However, one of the most recent initiatives, aimed at achieving true supply chain integration is collaborative planning, forecasting and replenishment (CPFR). [CPFR is a registered trademark of the Voluntary Inter-industry Commerce Standards (VICS) Association]. Using this CPFR approach, retailers, transport providers, distributors, and manufacturers can utilise available Internet-based technologies to collaborate from operational planning through to execution, according to Coyle, Bardi and Langley. Coyle, Bardi and Langley go on to argue that historically, for a single product, retailers and manufacturers may have worked off twenty or more types of forecasts, between them, each developed for a special purpose, each more or less accurate, and all trying to predict the behaviour of buyer in the marketplace. However, CPFR emphasises a sharing of consumer purchasing data among and between all the trading partners, for the purpose of helping to govern supply chain activities. Refer to figure 7.2 for a diagrammatic presentation of CPFR.

Figure 7.2 – Collaborative planning, forecasting and replenishment (CPFR)

Source: Coyle, Bardi and Langley (2003:84)
7.2.4 LACK OF SEGMENTATION

Figure 7.3 illustrates Sabath and Fontanella’s approach to the building of cooperative trading relationships, through analysing both potential benefits, and strategic importance. (Supply Chain Management. July / August 2002:26). In other words, the needs of the potential partners determine the level of cooperation.

Figure 7.3 – Supply chain segments

Starting with the transactional segment (refer figure 7.3), adversarial relationships are commonplace. This segment essentially focuses on serving routine commodity markets such as for example the maintenance, repair and operations (MRO) fields.

Moving vertically up the potential benefit axis in figure 7.3, information is shared in a unilateral way from the customer’s perspective, with the view to leverage the potential financial benefit for the customer. Therefore, higher levels of collaboration are experienced, but the focus of the strategic intent is to benefit the customer.

Moving horizontally across along the strategic value axis towards the bottom right quadrant, the customer in a supply chain is much more willing to collaborate due to the strategic importance of the relationship for the customer. Kraljic's model refers to this quadrant as the bottleneck product or service segment, according to Ten Have and Stevens (2003:117) Customers trading in this quadrant is much more open to supplier development, sharing of intellectual property and joint ventures.

Focusing on the top right quadrant, both potential benefit and strategic value is of high importance. Relationships are equally valuable to customer and suppliers. Therefore, true collaboration takes place due to the high importance and potential benefit. It is in this quadrant that true supply chain collaborative agreements are found.

7.2.5 LACK OF TRUST AND SECURITY

Lack of trust between supply chain partners within the extended enterprise is arguably one of the major reasons why collaborative arrangements do not deliver enhanced customer value. Sabath and Fontanella's argue that even with appropriate technology, partners restrict or distrust the information that they share. However, Haskins, Liedtka and Rosenblum (Organizational Dynamics. Volume 26. Spring. 1998:37) claim that they found a set of shared perspectives and characteristics that portrays the elements of ethics and trust of collaboration. Refer figure 7.4 for a diagrammatic presentation of their findings.
The core of the model is both the result of, and the support for, the elements in the two outer rings. According to Haskins, Liedtka and Rosenblum, this core supply chain-wide ethic of collaboration interacts with a set of person-centred attributes such as a caring attitude, conscientious stewardship, a calling for one's work, and creative energy. The outer ring consists of a set of organisation-centred elements such as coherent intent, congruent systems, and capital for learning and relationship building. All of the organisational aspects mentioned above support, reinforce and amplify the person-centred aspects. The interactions between and within these two rings is what create the extended organisation's ethic of collaboration, according to Haskins, Liedtka and Rosenblum.
7.2.6 INCONSISTENCY IN DEFINING STANDARDS AND MEASURING PERFORMANCE

Collaborative partners often use the same words or terminology, but attach different meanings or definitions to those words, according to Sabath and Fontanella. Sabath and Fontanella quote the following examples of key concepts that ought to be defined:

- Next day;
- fill rate;
- customer service;
- exception; and
- priority.

The way in which people are measured will influence the way those people behave. Measurement does not guarantee behaviour, but measurement or key performance indicators will most certainly influence behaviour. Therefore, according to Sabath and Fontanella, collaborative supply chain standards are often developed for information exchange but are often not used for the measurement of the effectiveness of such relationships. It is hence critical to define key performance areas and to develop key performance indicators for those areas that will adequately address the measurement of collaboration.

7.2.7 FOCUSING ONLY ON TECHNOLOGY

Sabath and Fontanella states that although technology is absolutely critical for collaboration, collaboration is not about technology only. Technology is an enabler, or a disruptor if not capable. Often, organisations with excellent technology find that organisational silos, poorly designed incentive programs, and inconsistent measures prevent them from collaborating internally. Without internal collaboration, the potential to respond positively to external collaborative opportunities are restricted.
Sabath and Fontanella (2002) also quote the following fine example of technology and collaboration. The example is about a major role player in the steel industry, saying: "We really don't have the ability to collaborate. We have very few important customers: A mere five of them make up 80 percent of our demand. So rather than having fancy technology, we use the telephone and fax. Someone from our organisation talks to them every day. Our marketing folks can trust their forecasts. Whenever there is an urgent change they warn us. If we are short, we warn them as early as we can, and they let us know exactly what their short-term needs are, so that we can be responsive. They are a joy to work with."

The above example illustrates collaboration at its best. Technology does not make collaboration, and processes do not guarantee it. Although both are important, it is ultimately the human interface and the trust that it can bring about that build a truly collaborative relationship.

7.3 FACTORS TO CONSIDER DURING SUPPLY CHAIN COLLABORATION

Bowersox, Closs and Cooper (2002:161) state that customers have mainly three perspectives of value, namely economic value, market value and relevancy. Economic value builds on economy of scale as a source of efficiency. Economy of scale seeks to fully utilise fixed overheads or installed capacities to achieve the lowest total logistics cost. The focus of economic value is efficiency of product or service creation. The customer take-away or real benefit of economic value is high quality at a low price.

Market value is about presenting an attractive assortment of products or services at the right time, to the right customer, in the right quantity, in the right condition, at the right place. Market value focuses on achieving economy of scope in product or service presentations. The creation of multi-merchant shopping malls, large-scale mass-merchandising retail stores, postponement for mass customisation, and multi-vendor e-commerce fulfilment operations such as 'amazon.com' are all examples of initiatives to achieve market value. The
customer take-away of market value is convenient product / service assortment and choice.

Relevancy involves customisation of value-adding services, over and above product and positioning that make a real difference to customers. Relevancy value means the right products and services as needed by the market value, at the right price as reflected by economic value, modified, synchronised, sequenced, and otherwise positioned in a manner that creates valuable segmental diversity. In the consumer context, relevancy could mean transformation of ingredients into an attractive menu that provides choice of ready-to eat meals. In the general merchandise context, relevancy could mean transforming various yarns into fashionable apparel. In manufacturing and assembly, relevancy is achieved by integrating specific components into products that increases functionality desired by a specific customer, also called mass-customisation. The customer take-away is a unique product / service bundle.

The following seven factors were found to be common success factors amongst various collaborative arrangements that successfully added customer value:

7.3.1 COMMON VISION

Bowersox and Closs (1996:61) quote the ‘Proctor & Gamble’ and ‘Wal-Mart’ alliance as an example of how the two businesses’ collective commitment, and shared vision was the skewer that led to the successful collaborative agreement.

Enterprises that have learnt to collaborate internally tend to be more successful in creating collaborative relationships outside their own organisation. These enterprises are sure of their mission and are united in purpose, according to Sabath & Fontanella (Supply Chain Management. July / August. 2002:26). However, one must not get confused between a common vision that is pursued with total commitment and dedication, and being inflexible. Organisations must remain flexible and adjust the strategic intent commensurate with changes in
market trends. In fact, being responsive in adapting to changes in market trends, could lead to a competitive advantage.

7.3.2 SINGLE-MINDEDNESS IN PURPOSE AND RESOLVE

Sabath and Fontanella (Supply Chain Management. July / August 2002:26) go on to argue that because of their unity in resolve, enterprises often end up being the leaders in their respective supply chains. They quote enterprises like Microsoft, Dell Computer, Intel, General Electric, and Wal-Mart as examples.

However, Sabath and Fontanella also claim that successful collaborators recognise that adjustments to collaborative agreements are constantly required. They go on stating that every aspect of a relationship may change over time, therefore, more collaborative relationships fail because they are not maintained than because they got off to a rough start.

7.3.3 ALIGN MEASUREMENT, COMPENSATION AND REWARDS

As mentioned in paragraph 7.2.6, performance management influences that behaviour of people, and should do, because that is precisely what it is designed to do. However, alignment of performance management criteria must be achieved across the extended enterprise, otherwise the wrong behaviours will be encouraged. For example, if manufacturing teams are only measured on production cost per unit and not order fills or responsiveness, then batch quantities will be lengthened and order fills and general responsiveness of the supply chain will suffer. Christopher (2002) quoted the following principles of measurement, compensation and reward:

- What gets measured gets managed;
- performance drives profit;
- measure performance at every step in the supply chain, from supplier to consumer; and
- link performance to rewards.
In the quest for ever increasing levels of supply chain performance, Christopher (2002) argues that the following supply chain performance criteria are critical:

- Customer satisfaction;
- quality;
- finance;
- cycle times, and
- overall supply chain performance.

Refer figure 7.5 for a logistics scorecard that could be used for goal and measurement alignment.

**Figure 7.5 — The logistics balance scorecard**

<table>
<thead>
<tr>
<th>Inbound</th>
<th>Internal</th>
<th>Outbound</th>
</tr>
</thead>
<tbody>
<tr>
<td>Better</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Faster</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cheaper</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Closer</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**e.g.**
- Service
- Quality
- Customer value
- Order-to-delivery
- Cash-to-cash
- Throughput time
- Cost-to-serve
- Total logistics costs
- EVA
- Partnership quality
- Employee satisfaction
- Customer retention

**Source: Christopher (2002)**

Christopher (2002) argues that there will always be pressure on logistics managers across the supply chain for better, faster, cheaper and closer performance. Measuring those performance criteria and rewarding good performance will increase customer value.
7.3.4 WILLINGNESS TO BE TECHNOLOGICALLY ADVENTUROUS

Most importantly, technology that supports collaboration must be scalable. As the collaborative vision moves through Sabath and Fontanella’s phases namely transactional and adversarial, towards collaborative and bilateral, (see figure 7.1) the sophistication and power of the technology must similarly develop. Refer figure 7.6 for a diagrammatic presentation of how technology development ought to complement different levels of collaboration.

Figure 7.6 – Technology and collaboration

![Diagram of Technology and Collaboration]


In the adversarial transactional phase (refer figure 7.6) effective collaboration relies on reliable technology, but technology does not have to be cutting edge. (In fact Sabath and Fontanella (2002) quote the example of “I’m sorry, the computer is down” as a classic example of this type of technology.)
In the unilateral information-sharing (refer figure 7.6) phase of collaboration, closed communities or consortia often use electronic data interchange (EDI) as an information-sharing platform. The customer normally drives EDI and switching costs are very high.

In the process optimisation quadrant (refer figure 7.6) of supply chain collaboration, shared systems are normally found to best integrate the business system, especially from the perspective of the supply chain partner that carries the highest risk.

In the full collaboration quadrant (refer figure 7.6) where bilateral arrangements and benefits are found, fully integrated systems are found with proprietary data that is shared by all the participating supply chain partners. Examples of these systems are collaborative planning, forecasting and replenishment systems.

7.3.5 FOCUS ON DIFFERENTIATION RATHER THE REDUCED COST

All customers, suppliers, and product lines are not equal. Certain are more critical to an organisation's success, whilst other yield more profit. Therefore, alignment of supply chain capabilities to different customer needs and priorities is essential to adding customer value through the process of collaboration. Only because a service or product is available in a business's repertoire does not mean that it will add value to every customer.

Low cost may be much less important to a customer than a focused, best in class service. Differentiating a supply chain's service offering could add more value to a customer, than simply being the cheapest. Refer figure 7.5 for a diagrammatic presentation of Christopher's (2002) balance scorecard for areas where supply chain offerings could lead to a differentiated value adding service, across the supply chain. These differentiated service offerings often lead to long-term sustainable competitive advantages.
7.3.6 CLEAR UNDERSTANDING OF CORE COMPETENCIES

It is also critical for each organisation to fully understand their true value proposition, in other words, what do they bring to the market. Because these enterprises understand their true value proposition, they often become eager outsoursers of non-core business processes and thus become experts in the art of managing the activities of external partners to meet their goals, according to Sabath & Fontanella (Supply Chain Management. July / August 2002:26).

Coyle, Bardi and Langley (2003:593) argue that the ability of organisations and their people to have knowledge of their core competencies and act accordingly is of utmost importance. They go on stating that an organisation has core competencies when each of the following three conditions are satisfied:

*Firstly, expertise.* It does not make sense for an organisation to claim core competency without the requisite knowledge and skills sets.

*Secondly, strategic fit.* This assumes that the area of competency is one that is aligned appropriately with overall corporate strategy and unique areas of competitive advantage.

*Thirdly, ability to invest.* The organisation must have the financial resources to invest in the area, and the financial results must be commensurate to what would be expected from any desirable investment of the firm’s resources.

Coyle, Bardi and Langley (2003:593) concludes that as organisations further develop the ability to diagnose and evaluate their own areas of core competence, they will be better equipped to determine opportunities for collaboration as a preferable strategy.
7.3.7 EFFECTIVE COLLABORATION WITH SUPPLIERS

Effective collaboration with suppliers implies that not all suppliers must be treated the same. Refer figure 7.7 for Kraljic's [as quoted in Ten Have, Ten Have and Stevens (2003:117)] depiction of using four quadrants to differentiate between different types of suppliers.

Figure 7.7 – Technology and collaboration

Source: Ten Have, Ten Have and Stevens (2003:117)

Routine products are when both the financial risk and risk of inadequate supply is low. The suppliers are normally integrated via a system that will reduce the transactional cost, such as e-commerce for example. No particularly close relationships with suppliers are formed. For bottleneck products, much effort is placed on the collaborative relationship from the customer's perspective. The supplier could even attempt to exploit the customer; therefore, the relationship is potentially adversarial. For leverage products, the customer will attempt for suppliers to compete. This will allow the customer to leverage the opportunity of abundant supply. For strategic products, the financial implication and risk is high.
for both the customer and the supplier. It is in this segment that true supply chain collaboration generally takes place.

7.4 EXAMPLES OF SUPPLY CHAIN COLLABORATION AND HOW IT IMPACTS ON CUSTOMER VALUE

Successful collaborators orchestrate their internal capabilities, recognise the dynamics of their relationships, understand the criticality of total economics (rather than measuring individual unrelated points), and focus on the unique significance of the customer value proposition. Collaboration under these circumstances is based on cooperation among a string of suppliers that have a mutual economic interest in adding customer value and retaining customers or customer groupings.

7.4.1 AUTOMOTIVE SUPPLY CHAIN PARTNERING

Paul Vet (2002) presented the following paper on automotive supply chain partnering at the 24th annual SAPICS conference on supply chain management. (24th annual SAPICS Conference proceedings (27-1 to 27-2).

The following is an excerpt of Paul Vet's paper. Paul Vet said South Africa's second biggest industry has an interesting supply chain. It is currently going through an optimising phase with many existing opportunities for further improvement. An automotive supply chain starts at the component manufacturer and ends, either when the components are assembled into a vehicle, or when they are purchased for replacement or enhancement during the life of the vehicle. The paper evaluates the present South African supply chain; global trends and further options open to the South African automotive industry.
PRESENT SOUTH AFRICAN AUTOMOTIVE SUPPLY CHAIN

The industry can be classified in four categories:

<table>
<thead>
<tr>
<th>Vehicle Year</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>-1 to 0</td>
<td>OEM</td>
</tr>
<tr>
<td>0 to 5</td>
<td>P&amp;A</td>
</tr>
<tr>
<td>5 to 10</td>
<td>AFM</td>
</tr>
<tr>
<td>10+</td>
<td>ALM</td>
</tr>
</tbody>
</table>

OEM or original equipment (vehicle) manufacturer relates to any activity that takes place until the vehicle is built.

P&A or parts and accessories, any activity related to the OEM branded component supply and fitting.

AFM or aftermarket, any activity related to the branded component supply and fitting. This market includes the use of second-hand components.

ALM or alternative market, any activity related to the non-branded component supply and fitting.

These categories use several currently separate supply chain channels, which are detailed in the next table.

<table>
<thead>
<tr>
<th>Category</th>
<th>Channel</th>
<th>Channel Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>OEM</td>
<td>1</td>
<td>Imported components to OEM</td>
</tr>
<tr>
<td>OEM</td>
<td>2</td>
<td>Local components to OEM</td>
</tr>
<tr>
<td>OEM</td>
<td>3</td>
<td>Vehicles to dealers/consumers</td>
</tr>
<tr>
<td>P&amp;A</td>
<td>4</td>
<td>Imported components to P&amp;A</td>
</tr>
<tr>
<td>P&amp;A</td>
<td>5</td>
<td>Local components to P&amp;A</td>
</tr>
<tr>
<td>P&amp;A</td>
<td>6</td>
<td>P&amp;A components to consumers</td>
</tr>
<tr>
<td>AFM</td>
<td>7</td>
<td>Imported components to aftermarket</td>
</tr>
<tr>
<td>AFM</td>
<td>8</td>
<td>Local components to aftermarket</td>
</tr>
<tr>
<td>AFM</td>
<td>9</td>
<td>Aftermarket components to consumers</td>
</tr>
<tr>
<td>ALM</td>
<td>10</td>
<td>Local components to alternative market</td>
</tr>
<tr>
<td>ALM</td>
<td>11</td>
<td>Alternative market components to consumers</td>
</tr>
<tr>
<td>AFM</td>
<td>12</td>
<td>Component manufacturers to export</td>
</tr>
</tbody>
</table>

Source: Vet. (24th annual SAPICS Conference proceedings (27-1 to 27-2).

Currently most of these channels are replicated by each of the seven OEMs. Within the channels, a lot of replication occurs as well, due to the component manufacturer's use of different logistics providers and modes of transport.

GLOBAL INDUSTRY TRENDS

Broadly speaking, automotive managers have come to view all vehicle-related services as their domain. Almost every major original-equipment manufacturer
(OEM) is now experimenting with downstream participation in one form or another – whether it is taking equity positions in dealer networks, acquiring parts-and-service companies, or offering car buyers telematics products ranging from active-navigation systems to emergency call services such as ‘OnStar’ (General Motors) and ‘Rescu’ (Ford).” (Lance A. Ealey and Luis Troyano-Bermúdez. The automotive industry: A 30,000-mile check-up. McKinsey 2002.)

OEMs are finding it increasingly difficult to make a reasonable profit out of selling cars. Future revenues are now expected to be generated from the downstream activities. It is therefore probable that the OEM’s would consider merging P&A and aftermarket segments. This strategy would be supported by changes to vehicles and services like PC diagnostics, modular component replacements, longer service intervals, long service contracts and increased use of onboard chips.

The vehicle manufacturing process has become very efficient, with further cost savings difficult to implement. The main opportunity for cost savings are now in the domain of the supply chain. OEMs may even merge aspects of their supply chains with competitors to benefit from resulting supply chain efficiencies.

EVOLUTION OF SUPPLY CHAIN PARTNERING

Supply chain terminology can be confusing, even to the experts and is often used incorrectly. This simplified explanation of the steps in the supply chain partnering evolution uses the most common expressions.

<table>
<thead>
<tr>
<th>Service Provider Activity</th>
<th>Service Provider Terminology</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Using own trucks</td>
<td>Transport services</td>
</tr>
<tr>
<td>2 Using own trucks and warehouses</td>
<td>3PL</td>
</tr>
<tr>
<td>3 Manages someone else’s trucks and warehouses</td>
<td>4PL</td>
</tr>
<tr>
<td>4 Applies innovation and optimisation beyond transport and warehousing</td>
<td>Supply chain management</td>
</tr>
<tr>
<td>5 Commitment to strategic collaboration</td>
<td>Supply chain partnering</td>
</tr>
</tbody>
</table>

Source: Vet. (24th annual SAPICS Conference proceedings (27-1 to 27-2).
These types of supply chain collaboration were extensively covered in chapter six. Supply chain management superseded 4PL, later followed by the supply chain partnering approach. Integration of supply chains became the most efficient way to take cost out the automotive industry, but requires a partnership rather than an arms length contract, because of the need of the strategies of the partners to be aligned.

**ENABLING TECHNOLOGIES**

Increased integration and service levels lead to increased complexity, no longer allowing simple calculations to steer supply chain management decisions. Technology tools are required to manage the total supply chain in the most optimised way. Commonly used enabling technologies are:

<table>
<thead>
<tr>
<th>Technology</th>
<th>To Manage</th>
</tr>
</thead>
<tbody>
<tr>
<td>B2B portal to improve procurement decisions</td>
<td>Materials availability and cost</td>
</tr>
<tr>
<td>Collaborative exchange software</td>
<td>Communication and visibility (Track and race)</td>
</tr>
<tr>
<td>to allow linking different software platforms, allowing management of the total supply chain</td>
<td></td>
</tr>
<tr>
<td>Inventory management and optimisation</td>
<td>Stock levels</td>
</tr>
<tr>
<td>Warehouse management to automate picking and despatching</td>
<td>Productivity and stock accuracy</td>
</tr>
<tr>
<td>Transport management systems including route optimisation programs</td>
<td>Transport cost reduction</td>
</tr>
<tr>
<td>Mobile technologies like RF scanners and remote stocktaking</td>
<td>Accuracy, throughput and productivity</td>
</tr>
<tr>
<td>APS or advanced planning services</td>
<td>Optimise total supply chain</td>
</tr>
</tbody>
</table>

Source: Vet. (24th annual SAPICS Conference proceedings (27-1 to 27-2).
OPTIONS FOR THE PARTICIPANTS OF THE AUTOMOTIVE SUPPLY CHAIN

Although many OEMs have merged such as Ford and Volvo, many supply chain options remain where OEMs can improve efficiencies and service levels. Examples are:

- Integrate inbound and outbound component distribution with competing OEMs;
- integrate inbound components supply chain for assembly and P&A;
- integrate inbound and outbound supply chain with an aftermarket distributor;
- acquire an aftermarket operation and merge with P&A;
- partner with several component manufacturers and integrate supply chains with assembly, P&A and aftermarket; or
- any combination of the above.

Integrating distribution and supply chains means merging transport and warehousing systems. The ultimate saving for the SA Automotive industry would be to establish one supply chain for the whole industry. Component manufacturers would only get one company to collect their components and all inbound transport to warehouses and cross docking would be done by full trucks only. Vehicles from these warehouses would be better utilised whilst still serving all corners of the country on a regular basis raising service levels to the required frequency.

SIMILARITIES WITH OTHER INDUSTRIES

Similar opportunities exist within the FMCG and industrial sectors for supply chain improvements. The automotive industry is fortunate in that the competitor’s providing components have many comparable processes, hence, integration is simpler. The competition in the P&A area is also less effective due
to the consumer initially only fitting original OEM components to their vehicles whilst the vehicle is still under warranty.

CONCLUSION

The global automotive industry is extremely competitive with an industry trend towards improving in core competencies and outsourcing in others. The South African automotive industry is small in global terms and has the opportunity to use supply chain integration across competitors to reach critical mass, substantially cut costs, improve service levels and improve global competitiveness.

7.4.2 TIBBETT & BRITTEN AFRICA AND UNILEVER

During the 24th annual SAPICS conference at Sun City on supply chain management, Mark Long from Tibbett & Britten Africa presented a paper together with Sandra Kinmont of Unilever SA. The paper entitled Collaboration: The most critical component of successful supply chain outsourcing is summarized in the 24th annual SAPICS Conference proceedings (32-1 to 32-3). The following is an excerpt of Mark Long and Sandra Kinmont’s paper.

INTRODUCTION

During 2000, in line with Unilever’s international strategy, Lever Ponds embarked on a journey to achieve a world-class outbound supply chain by 2003. The opportunity identified was the outsourcing of their outbound delivery network processes of warehousing and transportation management to a lead logistics service provider, Tibbett & Britten Africa.

Collaboration was seen as one of the key enablers to the outsourcing agreement that would drive a sustainable long-term solution for both parties, focused on mutual benefits. This meant fundamental changes in past behaviours by both parties.
WHY OUTSOURCE?

The Lever Ponds national outbound network in 2000 was made up of both in-house and outsourced warehousing facilities. These were managed by a number of third party service providers and transporters inherited primarily from the network of Lever Brothers and Elida Ponds, prior to the merger that formed Lever Ponds in the early 90's.

The primary opportunity was to leverage economies of scale through the appointment of a single service provider, capable of integrating warehousing and transportation flows through large-scale consolidated warehouse facilities. From an information management perspective, the outsourcing would allow for enterprise-wide operating systems, a standardisation of reporting and administration and experts focusing on the execution of deliveries at the lowest possible cost.

Warehousing and transportation management is not a core competency of Lever Ponds and that meant that capital investment in this area was limited. Lever Ponds required a partner who was able to invest in establishing the required infrastructure as well as information and optimisation management tools to integrate the product flow. This would enable optimisation of the network to provide levels of customer service that ensured continual stock availability on the shelf, reliability of service to key customers, lowest distribution cost and reduced stockholding levels.

However, whilst a service provider would enable a single point of accountability, it also increased the risk of an unsustainable relationship if not focused on continuously delivering benefits. This could only be resolved through a collaborative relationship between both parties.
SELECTING THE RIGHT PARTNER

Faced with the decision of choosing a lead service provider, Lever Ponds undertook an independent review, conducted by a consulting firm, of sixteen service providers within South African industry to select a partner. The review benchmarked the participants against key criteria.

From a short list, Tibbett & Britten was selected as the partner with the best fit to meet Lever Ponds' vision. However, as an existing primary service provider to Lever Ponds, the historical relationship and manner of working ingrained in both businesses had to first be transformed. The largest task of the management team was to enable this transformation to take place by uniting in a joint vision, whilst also developing a new culture, thus enabling the business's to meet the agreed objectives and milestones.

THE VISION

The joint vision was to work together, to deliver a customer-centric, cost effective supply chain solution.

The strategic alliance with Tibbett & Britten focused on:

- Building a warehouse and transport infrastructure
- World class customer service
- Execution at lowest cost
- Transparent information management

A key enabler was complementary management structures within both organisations.
STARTING OUT

The key to getting started was to jointly agree and document the intent as a senior management team and appoint leaders, Mark Long (Tibbett & Britten) and Sandra Kinmont (Lever Ponds). They became responsible within their businesses for executing the vision via joint Project Managers and a cross-functional joint business project team of circa 75 team members. The project was called 'Project Puzzle'.

In one of the first meetings, an agreement was reached on contractual intent, the key project milestones, and cost and service targets. A list of core values and how the project process would be managed supported this agreement.

The first Project Puzzle Get Together was held in January 2001. This was a multi-functional, cross-business meeting involving stakeholders (both management and staff) from all areas across both businesses. The focus was to set the scene for Project Puzzle and gain stakeholder support to develop a new way of working. The vision, key milestones, project objectives, cost and service targets were communicated to the forum. The project teams and team members' roles and responsibilities to execute the vision were also established.

Given the historical relationship, past perceptions had to be overcome. Time was taken to explore the historical relationship and identify fears. Fears related to execution were turned into actions that had to be addressed by the Project Managers. Once the fears and concerns had been ascertained, the team worked through simple exercises focusing on identifying new behaviours and ways of working together.

The meeting was the building block for developing a common set of values focused on collaboration. To start the project, seven different teams were appointed, managed by a Project Manager from each business and led by an executive Steering Committee consisting of key Board Members from each business function. The teams met every two weeks to focus on execution of their
project objectives. As the project evolved, team composition changed from functional to cross-functional members as initiatives moved from idea, to feasibility, to planning, to execution phases. The Project Managers' role was to facilitate the process and report back to the Steering Committee on progress made and potential red flags on a six-weekly cycle.

WHAT IS COLLABORATION?

Collaboration is a word that is used increasingly to describe various types of business processes between companies. The dictionary definition is somewhat more descriptive.

- To work together, especially in a joint intellectual or artistic effort; and
- to cooperate reasonably, especially with an enemy occupying one’s country.

During the past fifteen months, we have evolved our own definition of collaboration:

- It is a determined commitment to the same goals and objectives;
- the ability to build strong bridges between people at all levels between both businesses;
- key is saving money and improving customer service;
- a capacity to handle bad news together; and to
- jointly celebrate success and to have fun.

The two businesses have been able to redefine the historical working relationship between Lever Ponds and Tibbett & Britten to one of collaboration, because of the focus facilitated by Project Puzzle:
Historical | Collaborative
---|---
Hidden objectives | Shared, open objectives
Second guessing | Visibility and full data access
Skewed risks | Shared risk
Blame culture | Joint problem solving
Once off projects | Improvement culture
Limited information sharing | Common information

**KEY LEARNINGS**

The key learning from working together has been:

- Top level support and buy-in to the process is essential;
- ensure you take ownership at the top;
- focus on joint wins;
- resist doing things the old way;
- ensure the right people have enough time to invest in the process;
- one can never communicate enough to teams, business and key stakeholders;
- ensure information is not misrepresented for own agendas;
- align the Financial Budget quickly and upfront to ensure savings can be realised;
- make sure the right project manager is chosen and dedicate resources to the project;
- change the format of teams as the project progresses;
- ensure the team is not tackling too much at the same time; and
- the setting of realistic deadlines.

**BENEFITS**

Some of the benefits that have been experienced since the work on Project Puzzle begun were:

- Increased visibility across the outbound supply chain;
- Enhanced demand and supply management;
- reduced stock holding from implementing transhipment solutions;
- stronger focus on core competencies;
- improved customer service;
- increased sharing of information, ideas and technology;
- lower distribution costs;
- behavioural changes in both organisations; and
- contact between appropriate levels within the business resulted in increased focus.

**WHAT ARE OUR RULES FOR COLLABORATING SUCCESSFULLY?**

Over the past year, the following key enablers to success have been identified.

**Strong Leadership**
Without a champion to move collaboration forward, nothing significant will ever be accomplished. The leaders need to be strong at relationship building and have entrepreneurial drive.

**The “Collaborative Mindset”**
The ideal collaborative person profile is typically someone who:
- is passionate about what they do;
- operates with the utmost integrity;
- acts fairly and ensures both companies’ objectives are met;
- is flexible;
- is humble;
- can take risks and manage risk successfully;
- is able to apply repair skills for when things do not go according to plan;
- is patient;
- applies the “80:20 Principle” to decision making;
- able to cope with intense pressure and manage multiple demands from multiple sources;
- able to continually refocus teams on the project objectives; and
- is not easily discouraged.
Clear Expectations and Accountability
All parties need to understand what is expected of them and by when.

It Is Not Always Smooth Sailing
When things go off track, focus on developing joint solutions to the problem. Ensure a sustainable solution is found quickly. Personal relationships play an integral role here.

Open and Honest Communication and Information sharing
Open, robust communication is necessary to ensure all options are considered and that the team avoids doing things the old way. When communicating internally and externally, it is essential that information is managed in context, kept current and that both the facts and next steps are concisely conveyed.

A limited view of the supply chain hinders holistic supply chain management and therefore all relevant data for example, financial budgets should be openly discussed and shared where relevant.

Ensure Cultural Alignment
Achieve a mutual understanding of each business’ needs. There is no need for one or the other business’ culture to dominate. Rather create a unique culture focused on delivering the project objectives through regular team building initiatives focused on developing the team’s competencies at varying stages during the project.

Project Management
To ensure the teams retain focus it is key that a dedicated Project Team manages the process. There must be incremental benefits to working together. All efforts focus on win-win and realise that this relationship is based on long-term sustainability.
Benefit Sharing
Both partners' financial investment is the basis of the agreement and therefore mutual sharing of both the pains and gains is key to risk management. Gain-share agreements are one enabler to this.

CONCLUSION
A collaborative way of working between Tibbett & Britten and Lever Ponds is eighteen months old. Both companies have experienced benefits within their day-to-day operations because of the alliance. It is becoming a way of life and this is the foundation of their journey together, focused on delivering a sustainable long-term solution that maximises value to the consumer, customer and shareholder.

7.4.3 FORD MOTOR COMPANY AND DAIMLER CHRYSLER

The human and financial resources of alliance members are pooled to improve the overall competitiveness of the channel arrangement. Industry Insight 4-2 (Bowersox and Closs. 2002:113) describes a unique partnership arrangement between two competitors, Ford Motor Company (USA) and Daimler Chrysler (USA) with Exel Logistics, which resulted in substantial efficiency in distributing auto parts to dealers. Though the idea runs counter to competitive rivalries in the auto industry, Daimler Chrysler and Ford Motor Company, along with Exel Logistics, have build a successful partnership to improve service and reduce the cost of parts distribution.

The pilot program was tested with 11 dealers in northern Michigan. Dealerships were spread across a wide geographic area, requiring a large number of delivery vehicles; however, the capacity of these vehicles was under utilized. Under the arrangement, Ford paid a fee to place its parts on the dedicated fleet operated by Exel for the distribution of Daimler Chrysler parts. The test was a success and both companies expect to establish shared-service agreements with other motor
manufacturers in the future. They are considering a second phase of the test that could include 40 to 100 dealerships.

The pilot program created a template for developing future shared-service agreements. Both companies found that a third-party provider was key to implementing the agreement. Exel had resources that the automakers lacked, including time, personnel, and technology. It was also critical to create detailed protocol.

After the test in Michigan, Daimler Chrysler and Ford ran a similar test in Mexico. The geography and dealership dispersion throughout Mexico was conducive to the share-service concept. The routes were relatively long and the freight density was relatively low, creating available freight space. Auto dealers outside Mexico City bought less than 50 percent of the parts sold in the country, but distribution to them accounted for 90 percent of the kilometres. Additionally, each of the partners stood to realize some significant benefits. Daimler Chrysler would realize savings from current rates; Ford would increase service levels to its dealers’ and Exel would gain added revenue from the route.

Jerry Campbell, manager of North American logistics and custom for Ford’s customer service division, says that the shared services idea is one way of meeting the constant cost pressure. “Optimally, we should (share services) within our own company, then extend it to other customers and providers.” In fact, Ford’s customer service division already shares services with Volvo, which Ford Motor Company owns, and with Mazda, in which it has a major equity stake.

What makes a shared-services project successful? According to Tim Flucht, Exel’s account manager for the Ford / Daimler Chrysler project, “The basic paradigm you have to get past is competition. People have in their minds that certain parts of the supply chain are a competitive advantage. That may or may not be true. If it is true, you have to consider it very carefully. It is less of an issue when it is only a perceived advantage.” The manager of Ford and Daimler Chrysler agreed that the consumer had already made the purchase choice.
Flucht states, “Now it was a matter of sharing costs or continuing to pay the full amount.”

Other important factors in the success of shared-services partnerships are a large degree of trust and openness in considering how to implement the program.

7.5 CONCLUSION

This chapter illustrated that generally those organisations that have clearly articulated their business strategy and determined their core competencies have the courage and self-confidence to establish truly strategic collaborative alliances with their supplier and customers within an extended enterprise. Mainly those organisations or supply chains add value to customers. The three examples of supply chain collaboration that added customer value supported the literature research of the early chapters of this study.

Bowersox, Closs and Cooper (2002:112) say that organisations may seek to formalize their relationships, as they desire greater clarity and longer-term commitment. The typical extension is to form a non-legal partnership and over time extend the relationship toward an alliance. In these arrangements, the firms give up some of their operational autonomy in an effort to jointly pursue specific common goals. The expectation amongst the prospective organisations is that the alliance will prevail for a substantial period of time.

True collaboration requires business organisations to commit to much more than just cooperating on an administrative level. True alliances are willing to modify basic business processes to best practice, for the benefit of the supply chain. Whilst focusing on best practice, supply chain partners must also focus on the elimination of duplication and waste.
The next chapter will suggest a road map for successful supply chain collaboration in downstream distribution channels that will add to customer value.
CHAPTER 8: PRINCIPLES FOR SUCCESSFUL SUPPLY CHAIN COLLABORATION

8.1 INTRODUCTION

From the case studies quoted in chapter seven, it is clear that supply chain collaboration can potentially add customer and shareholder value. However, blanket supply chain collaboration is not the answer. It is of utmost importance to identify which upstream and downstream supply chain partners to approach for collaboration, and which products and / or services should be offered through such collaborative arrangements. This chapter will also identify barriers to collaborative supply chain management as well as phases of implementation.

8.2 SEGMENTATION FOR COLLABORATION

Market, customer, product and supplier segmentation is necessary to increase supply chain efficiency. That means that businesses ought to constantly evaluate and review trading conditions as market conditions change all the time. Businesses lose customers and add new customers all the time. Product / service portfolios are regularly expanded, whilst other products / services are being discontinued. Under favourable market conditions, new suppliers enter the market all the time, and under unfavourable trading conditions, suppliers exit the market.

The question begs which market segment to serve, which customers to collaborate with, which suppliers to collaborate with, which products or services should form the common denominator of a collaborative arrangement, and what technology to use as an enabler? This section will illustrate how to segment markets, customers, products and suppliers, with the view to identify best opportunities for successful collaborative agreements.
8.2.1 MARKET SEGMENTATION

Market segmentation, from a logistics needs perspective, begins with an industry analysis. Refer figure 8.1 for a diagrammatic presentation of the various steps involved in market segmentation.

The purpose of industry analysis is to identify and differentiate between industries such as the automotive industry, the fast moving consumer goods industry (FMCG), and the pharmaceutical industry for example. Each one of these industries has supply chain aspects that are unique to that specific industry. For example, world pricing in the automotive industry, freshness in the fast moving consumer goods industry, and product trace ability in the pharmaceutical industry.

Industry analysis leads to industry segmentation. Industry segmentation, for example the pharmaceutical industry, identifies different segments such as export customers, government tenders and state hospitals, clinics, wholesalers, pharmacies, and dispensing doctors. Each one of these industry segments have different parameters that are unique to that segment, for example, high delivery frequency to pharmacies as opposed to competitive pricing to wholesalers.

Industry segmentation leads to customer analysis. Customer analysis, for example in the FMCG industry differentiates between convenience shopping with fewer stock keeping units but longer shopping hours at convenient locations, and hyper stores that carry a large variety of stock keeping units at more competitive prices, but shorter shopping hours at fewer locations.

Customer analysis leads to key account segmentation. A Pareto analysis will indicate that only a few customers contribute to a large percentage of the profits. Those major customers or key accounts are key to a business and will form the primary target for business to enter into collaborative agreements.
Key account segmentation leads to competitive positioning. Competitive positioning is about understanding one's true value proposition, deciding when to collaborate, when to outsource, what technology to use as an enabler, which products / services to offer jointly as a collaborative alliance and which products / services to offer as an individual role player.

Competitive positioning leads to customer service design. Customer service design is covered extensively in chapter 3 of this study.

In the final analysis, market segmentation, from a logistics perspective, is about differentiation among industries and customers to form logistics distinctiveness, with the view to explore potential synergies to collaborate on.

Figure 8.1 – Market segmentation

Source: Cilliers (2003)
8.2.2 CUSTOMER SEGMENTATION

It is clear from Christopher's analysis (2002) of a Pareto distribution on customer account profitability, as detailed in figure 8.2, that the minority of customers yield a substantial portion of the cumulative profit of organisations. These customers must be targeted for collaborative agreements. One can furthermore also see in figure 8.2 that some customers result in a negative contribution. Most business organisations continue to serve the less profitable customers, with the aim to cover contribution towards fixed costs. Distinctly different supply chain service level agreements are however in place. Collaborative agreements with those less profitable customers are also not entered into.

Figure 8.2 - Some customers erode profitability

Source: Christopher (2002)

It is furthermore important to align the supply chain service offering of an alliance with the relevant net customer value of the account. Refer figure 8.3 for a matrix on
customer account profitability. Collaborative agreements and in particular collaborative planning forecasting and replenishment, ought to focus on the so-called star customers as illustrated in figure 8.3. These star customers can potentially yield the most value for both customers and well as for shareholders.

**Figure 8.3 - Customer profitability matrix**

![Customer profitability matrix diagram](image)

**Source:** Christopher (2002)

It is for these star customers that the service level agreements should be designed around differentiated service offerings. Turnover must be expanded for customers that fall in the profit drivers category in an attempt to move those to the star category. The net value of the customer account must be enhanced for customers that fall in the volume drivers category. Customers that fall in the so-called dog category must be reviewed, but these customers are most certainly not targeted for collaborative agreements.
8.2.3 PRODUCT SEGMENTATION

Similar to customer segmentation, collaborators in a supply chain must also analyse which product and / or service offerings yield the optimum profitability, and focus on providing high availability of those products and / or services. A Pareto analysis will indicate that approximately 80% of profits are yielded from approximately 20% of the products or services. Refer figure 8.4 for a matrix on product and / or service profitability. This product profitability analysis must be done across the supply chain, and all role players must support the decision, in order to achieve maximum alignment.

Figure 8.4 - A product and / or service offering profitability matrix

Source: Christopher (2002)

Products and / or service offerings that fall elsewhere in the matrix must be carefully managed to improve their contribution. However, products and / or
service that are low on both profitability and volume do not form part of the scope of potential collaborative agreements.

8.2.4 SUPPLIER SEGMENTATION

It is also essential to identify opportunities for forming collaborative agreements with suppliers. This need to segment supplier-customer relationships is even more important when one takes the multitude of supplier-customer relationships in a supply chain into account. Furthermore, it is important to note that a single role player in a supply chain can be a customer and supplier at the same time.

If one analyses a purchasing portfolio matrix and the commensurate procurement strategies, as detailed in figure 8.5, it is clear that suppliers of products and / or services that have high potential financial impact, as well as high risk of inadequate supply, ought to be targeted first for strategic alliances.

Figure 8.5 - Four basic procurement strategies

Source: Adapted from Ten Have, Ten Have and Stevens (2003:117)
When one then compares the upstream supply chain partner or supplier’s strategic marketing response to the procurement strategy of the buyer, one finds that the attractiveness of the account is also high to the potential supplier. When this situation is combined with a lack of freedom by the customer to choose between suppliers, the need for the formation of collaborative agreements is obvious, as is illustrated in figure 8.6.

Figure 8.6 - Supplier’s strategic response to procurement strategies

Suppliers of leverage products as per figure 8.5 will also target their customers for collaborative agreements, but it is not in the interest of the customer to do so. The reason being that there is more than one supplier of that product and / or service available, therefore, the customer will prefer to divide and rule the suppliers. Suppliers of bottleneck products as per figure 8.5 will attempt to exploit the customer on pricing, and suppliers of routine products will pay minimum attention to the customer account, thereby rendering both categories unsuitable for collaborative agreements.
Therefore, eliminating non-profitable customers and products from the supply chain will not only enhance collaborative supply chain alignment, but also customer value-added. Optimisation can be achieved by aligning the right mix of customer and products and/or services with the activities of the extended enterprise, as illustrated in figure 8.7.

**Figure 8.7 – Collaborative supply chain alignment**

![Collaborative supply chain alignment diagram](image)

**Source:** Cilliers (2003)

### 8.3 ALIGNMENT FOR COLLABORATION

During the formation and management of collaborative agreements, and especially when channel leadership issues are contemplated, is it necessary for the role players to understand the difference between *strategic alignment* and *tactical alignment*. *Strategic alignment* is in essence the control process, and as such forms the so-called information pipeline. If one draws a Pareto analysis, one will find that 80% of the control lies at this level, whilst 20% of the cost are incurred at this level. Refer figure 8.8 for a diagrammatic presentation on the relationship between *strategic alignment* and *tactical alignment*. The challenge however is at
the operational level, where most of the costs are incurred, the leadership has little control over their destiny. For example, one can ask how much control production has over what they build, or what the desired delivery commitment are. The answer is very little, however, the majority of the expenditure lies at the operational level.

Figure 8.8 - Strategic vs. tactical alignment

Source: Adapted from Coyle, Bardi and Langley (2003:456)

A collaborative agreement will add maximum customer value when the control process at strategic level is aligned with the operational activities at tactical level. This means in practice that the information pipeline straddles all the role players to the collaborative agreement, (which could potentially include suppliers, manufacturers, distributors and retailers), and the key performance measure for this control process is final output at operational level in relation to the total average inventory across the supply chain.
In analysing the market influence on the supply chain, one can clearly see that it is growing, according to figure 8.9. However, the power, and more specifically the buying power have shifted distinctively towards the retailer and end customer. Consumers have more choice, and are becoming increasingly demanding on both order fill service levels and quality, according to Bowersox and Closs' shrinking service window. (1996:75).

Figure 8.9 – The market influence on supply chains

The risks for manufacturers in a collaborative supply chain are that they do not necessarily always control the marketing relationship or customer interface. However, the distributor and / or retailer can potentially exploit the manufacturing, which is often the brand owner, on price. Therefore, if manufacturers do not enter into true collaborative agreements, manufacturers and brand owners will be reluctant to allow distributors to control the customer relationship on their behalf. Typical examples where this type of risk manifests are manufacturers that distribute their products through mass electronic Meta markets such as
amazon.com. The brand owners do not own the customer relationship any more, and solely rely on their collaborative agreement with amazon.com.

It follows that the emerging trends for opportunities to collaborate are mainly between suppliers of raw materials, manufacturers and distributors, or between distributors, retailers and consumer franchising. Refer figure 8.10 for a diagrammatic presentation of this phenomena.

Figure 8. 10 – Emerging opportunities to collaborate

Source: Developed by the author for the purposes of this study

Finally, supply chain alignment, through a collaborative alliance across an extended enterprise, can potentially add optimum customer value through the alignment of business processes across the various role players.
There are six core business processes that ought to be aligned across the scope of the collaborative agreement, in order to extract optimum customer value from the alliance, as depicted in figure 8.11. These six business processes are:

- Supply chain strategy and design;
- integrated supply chain planning;
- transactional execution;
- operational execution;
- performance management; and
- information sharing.

Figure 8.11 – Business process alignment across business functions

Source: Developed by the author for the purposes of this study

Christopher (2002) argues that supply chains compete and not companies. He continues to argue in that same seminar that most opportunities for cost reduction and/or value enhancement lie at the interface between supply chain partners. Supply chain integration implies process integration, therefore, the competition is not between the products as much as is it is between business models.
8.4 OVERCOMING THE BARRIERS TO SUPPLY CHAIN COLLABORATION

This study revealed the following internal and external barriers to supply chain collaboration.

8.4.1 INTERNAL BARRIERS

Organisational barriers

Traditionally organisations have structured around the so-called 'barons', or 'silo' mentalities. This applies to both their internal as well as external perspectives. Refer figure 8.12 for a pictorial diagram of traditional organisational thinking, as well as the implication on lead-time and responsiveness.

Managing customer orders within traditional structures always result in sequential actions. Collaboration, trust and information sharing in particular will change this paradigm to process type organisational thinking.

Figure 8.12 – Traditional or 'baron-type' organisations

Source: Adapted from Christopher (2002)
Figure 8.13 depicts a process type organisation, demonstrating the impact of concurrent engineering on lead-times and market responsiveness.

**Figure 8.13 – Collaborative organisational structures**

In order to migrate from functional organisations to process organisations, with the view to collaborate across the supply chain, organisations need to integrate the six business processes illustrated in figure 8.11. Christopher (2002) defines a collaborative business process as "any activity or group of activities that takes an input, adds value to it, and provides a value-added output to an internal or external customer". Christopher (2002) goes on to list the characteristics of business processes as:

- Having customers for whom they create value;
- having cross functional boundaries;
- drawing upon functional resources;
- being team based; and
- having strategic goals.

Source: Adapted from Christopher (2002)
Performance measures

As discussed in paragraphs 7.2.6 and 7.3.3, performance measures influence the behaviour of people. Performance measures are essentially an internal measure, although it must also be aligned with the market environment. Collaboration across the supply chain is about people’s behaviour. Therefore, in order for collaboration (both internally and externally) to add maximum value, the use of internal performance measures that are market oriented and process related is essential. Examples of relevant performance measurements that are supportive of supply chain collaboration goals are time-to-market, cost-to-serve, customer retention, and others as detailed in chapter 7 of this study.

Cross-functional, team-based collaboration must be encouraged through an integrated reward system. An industry example is Shatterpufe (Pty) Ltd, where the Business General Managers jointly perform performance appraisals on the services provided by the Corporate Logistics Function. The General Managers again get measured not on manufacturing order fills in the warehouses, but rather on customer satisfaction, customer order fills including the distribution channel’s performance and product buy-outs due to manufacturing shortages. The reason for this is to encourage the Business General Managers to better understand and interpret customer demand patterns.

Culture and resistance to change

With little internal integration, no organisation can hope to achieve integration across the supply chain. If organisations do not have a culture of internal collaboration, it will be necessary to embark on a structured change management program. Kotter (1990) as quoted by Ten Haven, Ten Haven and Stevens (2003:112-114) studied over 100 companies and developed a change management process model, which can be successfully applied to reorganising an organisation for collaboration. Refer figure 8.14 for a diagrammatic presentation of
Kotter's strategic change management model, to move organisational culture from non-collaborative to collaborative.

Figure 8.14 – Kotter's eight phases of change

<table>
<thead>
<tr>
<th>Phase</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Establish a sense of urgency</td>
</tr>
<tr>
<td>2</td>
<td>Create a coalition</td>
</tr>
<tr>
<td>3</td>
<td>Develop a clear vision</td>
</tr>
<tr>
<td>4</td>
<td>Share the vision</td>
</tr>
<tr>
<td>5</td>
<td>Empower people to clear obstacles</td>
</tr>
<tr>
<td>6</td>
<td>Secure short-term wins</td>
</tr>
<tr>
<td>7</td>
<td>Consolidate and keep moving</td>
</tr>
<tr>
<td>8</td>
<td>Anchor</td>
</tr>
</tbody>
</table>

1. Research the market
2. Analyse competition
3. Identify and discuss potential threats and opportunities
4. For a powerful and influential group to lead the change
5. Align this guiding coalition to work like a team
6. Use every possible way to communicate the new vision and strategies
7. Let guiding coalition members be role models for the rest of the organisation
8. Get rid of obstacles
9. Change structures and systems that obstruct the change effort
10. Encourage risk taking and non-traditional ideas, activities and actions
11. Plan for visible performance improvements
12. Align this guiding coalition to work like a team
13. Build ongoing credibility to gradually change all systems, structures and policies that don't fit in the vision
14. Hire, promote and develop successful changers
15. Reinvigorate the change process with new projects, themes and change agents
16. Improve performance through customer and productivity orientation and more effective leadership management
17. Align this guiding coalition to work like a team

Source: Ten Have, Ten Have and Stevens (2003:113)

Developing people and cross-functional teams

Lack of multi-disciplinary, cross-functional and multi skilling will result in a critical constraint. Team based management requires wider business understanding, and even more so, integrated collaborative team management requires different skills sets from the traditional functional specialist approach.

Flexibility, not only in approach but also in skill is essential. Flexibility and so-called 'can-do' cultures do not always agree with traditional best human resource management practices such as job descriptions. Christopher (2002) refers to the need for multi-skilling of human resources and suggests a so-called 'T-profile' of
skills for managers that lead multi faceted collaborative supply chains. Refer figure 8.15 for a diagram on such ‘T-profiled’ skills. The fundamental principle of ‘T-profiled’ skills is that a functional specialist will still have in-depth knowledge of a certain functional area, but will also process knowledge, enough to understand and support other functions, so that the collaborative arrangement can add maximum customer value. When multi skilling is achieved, process teams can become responsible for order fulfilment.

Figure 8. 15 – ‘T-shaped’ skills profile

Skills profile

Effective process management requires significant cross-functional skills.

Managers have in-depth expertise in one discipline combined with enough breadth to see the connections with others

Source: Christopher (2002)

8.4.2 EXTERNAL BARIERS

Lack of focus on customer value

Often, mainly due to lack of understanding and appreciation of own core competencies, the strategic intent of organisations is too narrow to realise the potential of the collaborative opportunity at hand. There is also a lack of ‘win-win’ thinking. The focus should rather be on what it takes for our business to become the supplier of choice. Therefore, focus on understanding customer and consumer
value is critical, with the view to benchmark and re-engineer business processes around them.

**Low levels of information systems and process integration**

Organisations, where the information highway is not yet built, struggle to integrate. This lack of information systems integration often leads to limited process alignment. The following seven steps to supply chain synchronicity is adopted from a presentation by Christopher (2002):

- Substitute information for inventory, because information is cheaper and information sharing also increases responsiveness;
- partner with customers to capture data on real demand, such as electronic point of sales information;
- establish collaborative planning forecasting and replenishment programs;
- partner with suppliers to reduce in-bound lead-times through co-managed inventory programs (CMI) such as vendor managed inventory, and consignment stock;
- seek to reduce complexity;
- manage business processes not just functions; and
- think ‘agile’ rather than ‘lean’.

**Pipeline visibility and cost transparency**

The focus here is on seeking to manage the extended enterprise. To this effect, B2B Africa, a subsidiary of Transnet (Ltd), has developed a so-called *glass pipe*. It is of great importance to provide visibility to all participants who collaborate in the supply chain. Information that must be shared varies from anticipated demand and sales forecasts on the upstream extreme of a continuum to accounts receivable on the other end of the continuum. Cost transparency can be achieved by reflecting inventory levels at strategic locations, inventory turns, cash-to-cash cycles, etc.
Information sharing across a supply chain requires a culture transformation from the traditional approach. Kearney, as quoted by Christopher (2002) argues that the shift in thinking should be from a single organisation to the extended enterprise. Figure 8.16 summarises Kearney's research findings.

**Figure 8.16 – The extended enterprise point of view**

<table>
<thead>
<tr>
<th>Single company thinking</th>
<th>Extended enterprise thinking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus on the customer</td>
<td>Focus on the ultimate consumer</td>
</tr>
<tr>
<td>Increase own profits</td>
<td>Increase profits for all</td>
</tr>
<tr>
<td>Consider own costs only</td>
<td>Consider total costs</td>
</tr>
<tr>
<td>&quot;Spread the business around&quot;</td>
<td>Team with the best</td>
</tr>
<tr>
<td>Guard ideas and information</td>
<td>Share ideas and information</td>
</tr>
<tr>
<td>Improve internal process efficiency</td>
<td>Improve joint process efficiency</td>
</tr>
</tbody>
</table>

*Source: A.T. Kearney*

### 8.5 IMPLEMENTATION OF COLLABORATIVE SUPPLY CHAIN MANAGEMENT

Christopher (2002) quotes the following implementation steps for collaborative arrangements in supply chains, as researched by McKinsey:

- Focus everyone externally on delivering end products and services that are valued by the customer.
- Realign organisations, roles and resources around the processes that deliver customer value.
- Integrate both suppliers and customers within the process scope.
- Make the remaining functions "partners in process performance."
- Make teams the basic organisational building block, within and across processes.
- Transform management roles from "command-and-control" to "process leadership".
- Recast performance management systems to emphasize customer-driven, team behaviour.
- Promote multiple competencies in individuals.

Garttner researched a phased approach to supply chain collaboration. Refer figure 8.17 for a presentation of their research findings. Their research highlights five phases of implementation as the enterprise evolves through varying stages of business value and levels of integration.

**Figure 8.17 — A phased approach for supply chain collaboration**

Source: Cilliers (2003)
During the fundamental stage, basic functional excellence is being pursued, without any integration. Phase two starts with cross-functional integration, albeit still within the organisation. Phase three leads to integrated planning and information sharing, although the information is still historically based. In phase four relationships are being formed with upstream and downstream supply chain partners, and the organisation plays its role in the extended enterprise. Lastly, phase five is when supply chain communities are formed, and the organisation understands that a substantial portion of its results depends on the support and collaboration with its partners.

### 8.6 CONCLUSION

This chapter illustrated that segmentation of markets, customers, suppliers as well as products forms the basis of a decision making process that will result in the identification of which upstream and downstream supply chain partners ought to be approached for potential collaboration. The chapter also illustrated that alignment between the control and goods flow pipelines, at strategic and tactical levels respectively, will make maximum contribution to customer value. Due to a shift in the balance of power away from the manufacturers to distributors, opportunities for supply chain collaboration are emerging mainly in the distribution channels. Furthermore, alignment of business processes across business functions and businesses is essential for successful supply chain collaboration.

Finally, seven barriers to effective supply chain collaboration were identified and eight steps were recommended as a phased approach to implement successful supply chain collaboration that will enhance customer value as well as shareholder value.
PART 4: SUMMARY OF FINDINGS

CHAPTER 9: CONCLUSION

9.1 INTRODUCTION

South Africans are becoming more aware that South Africa's customer service levels, as experienced by the consumer, do not match international standards. Logistics service providers find it difficult to deliver services on par with international trading counterparts. Is this due to the relatively small size of the South African economy? Are South Africans simply unable to generate the economies of scale required to cost-effectively deliver the required services? Another question that goes begging is whether South African business leaders are either unwilling or unable to perform on a par with the rest of the world, or are there environmental circumstances hindering the leaders of industry from achieving this much needed improved performance?

The primary study objective was to research the correlation between customer value-added and supply chain collaboration. The secondary study objective was to establish whether enhancing customer value through supply chain collaboration would enhance shareholder value.

In an attempt to address the abovementioned primary and secondary study objectives, the scope of this dissertation covered a study of supply chain collaboration with specific reference to the outbound link of the supply chain and more specifically on collaboration in the trading channel and network design.

A theoretical analysis was undertaken in chapters two, three and four of integrated logistics and supply chain management, customer service management and distribution management. The research results were applied in chapters five, six, seven and eight that focused on the factors that influenced customer value, the various areas of supply chain collaboration, the correlation between collaborative supply chain management and customer value-added. The following sections, 9.2 to 9.7, briefly summarises the study whilst section 9.9 concludes the study.
9.2 INTEGRATED BUSINESS LOGISTICS AND SUPPLY CHAIN MANAGEMENT

Chapter two focused on the establishment of a framework of integrated business logistics and supply chain management that formed the basis of the study. This was complimented by a discussion on the alignment of strategic supply chain design as well as the alignment of the supply chain structure with the corporate strategy. Finally chapter two was concluded with an analysis of the factors that influence supply chain implementation, as well as some benefits of integration.

From figure 9.1, it is clear that business logistics is the integrated management function of planning, implementing and controlling the conversion of inputs into the logistics management process into outputs out of the logistics management process. The logistics management processes essentially add place and time utility to the value chain, and enables operations to add form utility. Likewise, logistics management enables the sales function to add possession utility to the value chain.

Figure 9.1 — Components of Logistics Management

Source: Stock and Lambert. (2001:5)
From figure 9.2, it is clear that supply chain management is a broader concept than integrated business logistics management. Supply chain management includes all the logistics activities as per figure 9.1, but also coordinates business processes not only within a particular company, but also across businesses within a supply chain. These business processes are customer relationship management, customer service management, demand management, order fulfilment, manufacturing flow management, procurement, product development, and reverse logistics. The purpose of supply chain management is to improve the long-term performance of the individual companies within a supply chain, and the supply chain as a whole.

The supply chain is then a series of business enterprises that work together for a common goal, and their long-term success depends largely on the overall success of the supply chain as a whole. It is therefore fair to derive that businesses within a supply chain do not only compete with other businesses, but supply chains also compete against other supply chains.

**Figure 9.2 – The scope of supply chain management**

Source: Stock and Lambert. (2001:55)
The purpose of business logistics management is to meet customer requirements, as per both the CLM definitions that were included in chapter 2. The purpose of supply chain management also as per the CLM definition is to improve the long-term performance of the individual companies within the supply chain, and the supply chain as a whole. The question begs whether these two goals are in conflict? The answer is a clear no. In fact, in analysing the customer value proposition, one can see that the goals of logistics management and supply chain management are commensurate.

9.3 CUSTOMER SERVICE MANAGEMENT

Chapter three focused on customer service management, analysing customer needs, customer service levels at various stages throughout a product's life cycle, customer service design, key customer service performance indicators, some benefits of value adding customer service, and concluded with a few challenges facing customer service management. Businesses and more specifically members of supply chains should strive to meet customer's requirements, whilst they simultaneously improve the long-term performance of the supply chain members and the supply chain as a whole. Both objectives are obtainable.

There are a myriad of factors to keep in mind when one develops a supply chain strategy for today's challenging business environment. Customer expectations are constantly increasing as illustrated by Bowersox and Closs in their book, Logistical Management, The Integrated Supply Chain Process. Refer figure 9.3 for a graphical presentation of the so-called shrinking customer service window.
Bowersox and Closs (1996:75) go on to argue that supply chain strategy is often used to gain customer loyalty. This chapter analysed how supply chain strategies and especially collaboration within a distribution channel can contribute to improved customer service, improved customer loyalty and customer retention, and improved performance for the supply chains as a whole in the long term.

9.4 DISTRIBUTION MANAGEMENT

Chapter four focused on alignment of corporate strategy with logistics distribution planning and strategy with the view of enhancing corporate profitability. Chapter four illustrated that logistics strategy planning has developed into a vital element contributing to corporate profit objectives. The high cost associated with logistics activities, competing in competitive markets and increasing concern for customer satisfaction have resulted in management awareness of the importance of developing a distribution channel strategy as part of overall supply chain management strategic planning process.
Supply chain design consists mainly of two components namely the trading channel strategy and the physical network design. The trading channel strategy is the commercial channel through which a products' ownership goes. It is also sometimes referred to as the marketing channel. It is in this trading channel that supply chain collaborative relationships are formed. This trading channel strategy formed the focus of this study. However, the physical flow or network design is included for background and clarity in figure 9.4. Lambert, Stock and Ellram (1998:515) refer to the above concept of two channels as *channel separation*.

**Figure 9.4 – Channel separation**

<table>
<thead>
<tr>
<th>Physical Network</th>
<th>Trading Channel</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>(Logistics Channel)</strong></td>
<td><strong>(Transactional Channel)</strong></td>
</tr>
<tr>
<td>Manufacturer's trunk vehicle</td>
<td>Central sales</td>
</tr>
<tr>
<td>Third-party carrier</td>
<td>District sales</td>
</tr>
<tr>
<td>Local delivery</td>
<td>Wholesaler</td>
</tr>
<tr>
<td>Production warehouse</td>
<td>Retailer</td>
</tr>
<tr>
<td>Distribution centre</td>
<td></td>
</tr>
<tr>
<td>Regional depot</td>
<td></td>
</tr>
<tr>
<td>Shop / store</td>
<td></td>
</tr>
<tr>
<td>Consumer</td>
<td></td>
</tr>
</tbody>
</table>

Source: Rushton and Oxley. (1991:56)

The main purpose of chapter four was to describe the functional area where supply chain collaboration will be effected.

**9.5 FACTORS THAT INFLUENCE CUSTOMER VALUE**

Chapter five analysed the factors that influenced customer value, how supply chain collaboration manifests in practice, and finally to determine the correlation between supply chain collaboration and customer value. This chapter identified four main
key performance areas of customer value-adding being quality, service levels, total logistics costs, and lead time management. Refer to figure 9.5. Customer value is driven by the improvement of both the quality of a supply chain offering being a commodity or service, as well as the improving of customer service levels. However, by doing this market share and revenue levels will improve, serving both the needs of customers and supply chain members. By reducing total logistics costs (one of the goals of logistics management) and by reducing cycle times, businesses improve their profitability and serve customers better.

**Figure 9.5 – Customer Value**

![Customer Value Diagram](image)

*Source: Christopher. (2002)*

It is furthermore important to analyse industries, customers and product offerings in order to design a competitive positioning strategy for a supply chain that will both improve the customer value proposition and enhance the long-term success of the supply chain.
9.6 SUPPLY CHAIN COLLABORATION

Chapter six analysed the various areas of supply chain collaboration and the collaboration formation process. Furthermore, chapter six described seven types of supply chain relationships. These were mergers and acquisitions, voluntary arrangements, joint ventures, strategic alliances, partnerships, collaborative arrangements with preferred suppliers known as two party logistics agreements, traditional outsourcing also known as third party logistics agreements, restructurings, unbundling, fourth party logistics arrangements, and privatisation.

Reasons and / or motives for collaborative agreements may vary from case to case, but this study focused on some common factors such as achieving greater economies of scale, consolidating buying power, centralising some key functions like demand planning for example, and to ultimately improve customer service levels.

9.7 CORRELATION BETWEEN SUPPLY CHAIN COLLABORATION AND CUSTOMER VALUE-ADDED

Chapter seven served to illustrate the correlation between collaborative supply chain management and customer value-added. A detailed analysis was done of seven common missteps why supply chain collaboration fail to add to customer value, which must obviously be avoided. Furthermore, seven steps were suggested that could be followed for collaborative agreement to enhance customer value. Three examples of collaborative supply chain relationships that added customer value were described.

However, blanket supply chain collaboration is not the answer. It is of utmost importance to identify which upstream and downstream supply chain partners to approach for collaboration, and which products and / or services should be offered through such collaborative arrangements.
9.8 PRINCIPLES FOR SUCCESSFUL SUPPLY CHAIN COLLABORATION

Chapter eight focused on segmentation of markets, customers, suppliers as well as products from a supply chain perspective, with the view to enhance the decision making process that will result in the identification of upstream and downstream supply chain partners for potential collaboration.

Chapter eight also illustrated that alignment between the control and goods flow pipelines, on strategic and tactical levels respectively, will make a maximum contribution to customer value. Due to a shift in the balance of power away from the manufacturers to distributors, opportunities for supply chain collaboration are emerging mainly in the distribution channels. Alignment of business processes across business functions and businesses is essential for successful supply chain collaboration.

Finally, some barriers that could impede successful supply chain collaboration were identified and a phased approach was recommended to implement supply chain collaboration that will enhance customer value as well as shareholder value.

9.9 CONCLUSION

An anonymous philosopher once said: “If we are to achieve results never before accomplished, we must expect to employ methods never before attempted”. One of these new business systems is supply chain collaboration.

Prior to embarking or even exploring the possibility of collaborative opportunities, leadership must align a supply chain’s strategy with the key parameters of the relevant segment. Figure 9.6 depicts competitive positioning, commensurate with market and product analysis.
There is a correlation between the level of supply chain collaboration and the procurement portfolio matrix. Figure 8.7 depicts competitive positioning commensurate with supplier analysis.
Figure 9.7 – Emerging opportunities to collaborate


Adding to customer value has two dimensions. One dimension being differentiated products and/or services, and the other dimension the cost reduction. Strategic cost management programs have become increasingly more important differentiating factors. Cost reduction programs should not be too narrow, one-dimensional exercises focused on specific transactions. Implemented effectively, they can become a key tool in the organisation’s overall strategy and serve as a means to increase competitive advantage. (SAP Convergence. Volume 3. Number 1. Page 26-29).

Figure 9.8 depicts SAP’s research findings with respect to increasing levels of savings that can be attained through different business models. The research findings indicate that focusing on business functions or departments only, up to ten percent savings is achievable. Shifting the scope to enterprise wide business processes, the potential savings increases to twenty five percent. Lastly, the
research indicates that the potential saving between relationship-connected organisations can yield between thirty and forty percent savings.

Figure 9.8 – Potential level of customer value added


Finally, much hype was created in the late 1990’s about the y2k incompatibility of many enterprise business management systems, followed by an unprecedented boom in ‘e’-commerce, with the advent of the so-called dot-com era. This has failed to deliver to all the expectations of ‘e’-fulfilment, but did enhance the business and information management platform.

The so-called mobile commerce or ‘m’-commerce boom succeeded this ‘e’-boom. The ‘m’-commerce boom brought about even more advanced logistics information systems, such as satellite tracking and tracing, radio frequency scanning and picking, etc.
In conclusion, the study finding indicates it is now time to move from ‘m’-commerce to collaborative or ‘c’-commerce, in order to capitalise on the potential benefits of collaboration. The driving parameters of collaborative commerce are collaborate to compete, search for collaborative advantage of adding maximum customer value, write business cases for collaboration, and breaking down of barriers. Supply chains compete, not companies. Coyle, Bardi and Langley, (2003:592) state that in the logistics and supply chain arenas of the future, the ability to develop effective collaborations will become a key to success. The desired end result is a business environment in which overall results surpass what individual organizations could not achieve by themselves.

Coyle, Bardi and Langley (2003:593) go on to conclude that collaboration provides complete visibility to the entire process flow, from beginning to end, to all participants. Although some organisations may find it challenging to meaningfully buy into the idea of collaborating with customers, suppliers, and even competitors, many are quickly adopting changes to business processes to accomplish this objective. Considering the imperative of creating value for the end-use customer and / or consumer, the need for collaborative relationships cannot be overstated.

Finally, it is evident that supply chain collaboration can potentially enhance customer value, but there are a multitude of factors that must be considered during the formation stages of a collaborative agreement. It is equally important to maintain such collaborative relationships in order to derive maximum customer value. Furthermore, by enhancing customer value through supply chain collaboration, it is important to rather offer differentiated products and / or services, rather than to focus on cost reduction programs alone. By achieving higher customer service levels and more customer value-added by means of augmented products and / or services, the service providers and customers can all potentially be more profitable, thereby enhancing shareholder value.
LIST OF SOURCES

Books and published works


Porter, ME. 'How competitive forces shape strategy'. Harvard Business Review. 1979


Conferences, congresses, symposia and seminars

Christopher, M., Creating the Agile Supply Chain, One-day workshop at Cranfield University, June 1998.

Christopher, M., Strategic Supply Chain Management. Three-day workshop at Gordon Institute for Business Science, April 2002.

Cilliers, W. In-house Strategic Supply Chain workshop for Shatterprufe (Pty) Ltd. DNA Supply Chains (Ltd). January 2003.

Long, M and Kinmont, S. Collaboration: The most critical component of successful supply chain outsourcing. 24th annual SAPICS conference
on supply chain management. [(24th annual SAPICS Conference proceedings (32-1 to 32-3)]. July 2002.


Newspapers, magazines, newsletters, periodicals and brochures


<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004-03-26</td>
<td>26 SEP 2005</td>
</tr>
<tr>
<td>2004-04-04</td>
<td>13 APR 2004</td>
</tr>
<tr>
<td>2004-04-07</td>
<td>17 JUN 2004</td>
</tr>
<tr>
<td>2004-07-09</td>
<td>19 JUL 2004</td>
</tr>
<tr>
<td>2004-08-04</td>
<td>18 OCT 2004</td>
</tr>
<tr>
<td>2004-08-15</td>
<td>5 NOV 2004</td>
</tr>
<tr>
<td>2004-09-02</td>
<td>23 MAY 2005</td>
</tr>
<tr>
<td>2005-09-12</td>
<td>5 AUG 2005</td>
</tr>
<tr>
<td>2006-05-23</td>
<td>20 MAY 2006</td>
</tr>
<tr>
<td>2006-06-01</td>
<td>12 JUN 2006</td>
</tr>
<tr>
<td>2006-06-08</td>
<td>12 JUL 2006</td>
</tr>
<tr>
<td>2006-07-08</td>
<td>23 JUL 2006</td>
</tr>
<tr>
<td>2006-08-02</td>
<td>20 AUG 2006</td>
</tr>
<tr>
<td>2006-08-15</td>
<td>3 SEP 2006</td>
</tr>
<tr>
<td>2006-08-23</td>
<td>10 SEP 2006</td>
</tr>
<tr>
<td>2006-09-01</td>
<td>18 OCT 2006</td>
</tr>
<tr>
<td>2006-10-02</td>
<td>15 NOV 2006</td>
</tr>
<tr>
<td>2006-11-08</td>
<td>23 DEC 2006</td>
</tr>
<tr>
<td>2006-12-08</td>
<td>20 JAN 2007</td>
</tr>
<tr>
<td>2007-01-26</td>
<td>13 FEB 2007</td>
</tr>
<tr>
<td>2007-02-05</td>
<td>21 MAR 2007</td>
</tr>
<tr>
<td>2007-03-15</td>
<td>09 APR 2007</td>
</tr>
<tr>
<td>2007-04-11</td>
<td>06 MAY 2007</td>
</tr>
<tr>
<td>2007-05-23</td>
<td>12 JUN 2007</td>
</tr>
<tr>
<td>2007-06-20</td>
<td>12 JUL 2007</td>
</tr>
<tr>
<td>2007-07-02</td>
<td>20 AUG 2007</td>
</tr>
<tr>
<td>2007-08-10</td>
<td>08 SEP 2007</td>
</tr>
<tr>
<td>2007-09-08</td>
<td>16 OCT 2007</td>
</tr>
<tr>
<td>2007-10-26</td>
<td>14 NOV 2007</td>
</tr>
<tr>
<td>2007-11-12</td>
<td>30 DEC 2007</td>
</tr>
<tr>
<td>2008-01-20</td>
<td>17 JAN 2008</td>
</tr>
<tr>
<td>2008-02-11</td>
<td>06 MAR 2008</td>
</tr>
<tr>
<td>2008-03-15</td>
<td>09 APR 2008</td>
</tr>
<tr>
<td>2008-04-11</td>
<td>06 MAY 2008</td>
</tr>
<tr>
<td>2008-05-23</td>
<td>12 JUN 2008</td>
</tr>
<tr>
<td>2008-06-20</td>
<td>12 JUL 2008</td>
</tr>
<tr>
<td>2008-07-02</td>
<td>20 AUG 2008</td>
</tr>
<tr>
<td>2008-08-10</td>
<td>08 SEP 2008</td>
</tr>
<tr>
<td>2008-09-08</td>
<td>16 OCT 2008</td>
</tr>
<tr>
<td>2008-10-26</td>
<td>14 NOV 2008</td>
</tr>
<tr>
<td>2008-11-12</td>
<td>30 DEC 2008</td>
</tr>
<tr>
<td>2009-01-20</td>
<td>17 JAN 2009</td>
</tr>
<tr>
<td>2009-02-11</td>
<td>06 MAR 2009</td>
</tr>
<tr>
<td>2009-03-15</td>
<td>09 APR 2009</td>
</tr>
<tr>
<td>2009-04-11</td>
<td>06 MAY 2009</td>
</tr>
<tr>
<td>2009-05-23</td>
<td>12 JUN 2009</td>
</tr>
<tr>
<td>2009-06-20</td>
<td>12 JUL 2009</td>
</tr>
<tr>
<td>2009-07-02</td>
<td>20 AUG 2009</td>
</tr>
<tr>
<td>2009-08-10</td>
<td>08 SEP 2009</td>
</tr>
<tr>
<td>2009-09-08</td>
<td>16 OCT 2009</td>
</tr>
<tr>
<td>2009-10-26</td>
<td>14 NOV 2009</td>
</tr>
<tr>
<td>2009-11-12</td>
<td>30 DEC 2009</td>
</tr>
<tr>
<td>2010-01-20</td>
<td>17 JAN 2010</td>
</tr>
<tr>
<td>2010-02-11</td>
<td>06 MAR 2010</td>
</tr>
<tr>
<td>2010-03-15</td>
<td>09 APR 2010</td>
</tr>
<tr>
<td>2010-04-11</td>
<td>06 MAY 2010</td>
</tr>
<tr>
<td>2010-05-23</td>
<td>12 JUN 2010</td>
</tr>
<tr>
<td>2010-06-20</td>
<td>12 JUL 2010</td>
</tr>
<tr>
<td>2010-07-02</td>
<td>20 AUG 2010</td>
</tr>
<tr>
<td>2010-08-10</td>
<td>08 SEP 2010</td>
</tr>
<tr>
<td>2010-09-08</td>
<td>16 OCT 2010</td>
</tr>
<tr>
<td>2010-10-26</td>
<td>14 NOV 2010</td>
</tr>
<tr>
<td>2010-11-12</td>
<td>30 DEC 2010</td>
</tr>
<tr>
<td>2011-01-20</td>
<td>17 JAN 2011</td>
</tr>
<tr>
<td>2011-02-11</td>
<td>06 MAR 2011</td>
</tr>
<tr>
<td>2011-03-15</td>
<td>09 APR 2011</td>
</tr>
<tr>
<td>2011-04-11</td>
<td>06 MAY 2011</td>
</tr>
<tr>
<td>2011-05-23</td>
<td>12 JUN 2011</td>
</tr>
<tr>
<td>2011-06-20</td>
<td>12 JUL 2011</td>
</tr>
<tr>
<td>2011-07-02</td>
<td>20 AUG 2011</td>
</tr>
<tr>
<td>2011-08-10</td>
<td>08 SEP 2011</td>
</tr>
<tr>
<td>2011-09-08</td>
<td>16 OCT 2011</td>
</tr>
<tr>
<td>2011-10-26</td>
<td>14 NOV 2011</td>
</tr>
<tr>
<td>2011-11-12</td>
<td>30 DEC 2011</td>
</tr>
<tr>
<td>2012-01-20</td>
<td>17 JAN 2012</td>
</tr>
<tr>
<td>2012-02-11</td>
<td>06 MAR 2012</td>
</tr>
<tr>
<td>2012-03-15</td>
<td>09 APR 2012</td>
</tr>
<tr>
<td>2012-04-11</td>
<td>06 MAY 2012</td>
</tr>
<tr>
<td>2012-05-23</td>
<td>12 JUN 2012</td>
</tr>
<tr>
<td>2012-06-20</td>
<td>12 JUL 2012</td>
</tr>
<tr>
<td>2012-07-02</td>
<td>20 AUG 2012</td>
</tr>
<tr>
<td>2012-08-10</td>
<td>08 SEP 2012</td>
</tr>
<tr>
<td>2012-09-08</td>
<td>16 OCT 2012</td>
</tr>
<tr>
<td>2012-10-26</td>
<td>14 NOV 2012</td>
</tr>
<tr>
<td>2012-11-12</td>
<td>30 DEC 2012</td>
</tr>
</tbody>
</table>