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SUPPLY CHAIN MANAGEMENT PRACTICES IN A LEADING MANUFACTURING ORGANISATION

by

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200600197

DISSERTATION

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at the

UNIVERSITY OF JOHANNESBURG

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APRIL 2014
DECLARATION

I certify that the dissertation submitted by me for the degree Master’s of Commerce (Logistics Management) at the University of Johannesburg is my independent work and has not been submitted by me for a degree at another university.

Orestes Peristeris
(Name in block letters – no signature)
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Finally, this study is dedicated to the pursuit of knowledge, which has driven progress and enlightenment throughout the ages.

"Education is not the filling of a pail, but the lighting of a fire."
— W.B. Yeats

Scire est nescire, nisi id me scire alius scierit.
— Lucilius
ABSTRACT

Within the increasingly competitive global economic environment, organisations need to find ways of increasing their competitiveness. This trend has been felt strongly by South African manufacturing organisations as a result of the liberalisation of the South African economy, particularly the relaxation of tariff and trade barriers, and the reduction in the cost of international trade leading to the importation of manufactured goods from both developed and emerging economies. The maturity of the local industry and the buying power of national supermarket chains also contribute to the level of competition the South African confectionery industry experiences.

Through a literature review, this study illustrates how supply chain management can increase the competitiveness of manufacturing organisations, particularly through the broad nature of supply chain management and the areas over which it has a direct influence. The study also identifies a best practice supply chain management framework that describes how supply chain management can be applied in practice. The South African confectionery industry is the focus of the study, given the level of competition prevalent within the industry, both internally and from abroad. The study provides an analysis of the competitive conditions within the confectionery industry and the contingency factors for the implementation of supply chain management.

The purpose of the study has been to apply a supply chain management best practise framework to a leading South African confectionery manufacturer, in order to provide a case study of its supply chain management practises. The respondent organisation was a multinational Fast Moving Consumer Goods (FMCG) manufacturer with South African based manufacturing operations.

The research methodology was the application of the assessment tool found within the Global Supply Chain Forum (GSCF) supply chain management framework to the respondent organisation through a series of interviews of the respondent organisation's management, who were directly responsible for managing the processes identified in the framework. There was broad alignment between the roles of the individual respondents and the processes found within the framework. The research provides a detailed description of the practices carried out by the leading manufacturing organisation, as benchmarked against the practises described
by the GSCF framework. The overall finding of the study is that the practices found within the GSCF framework are being comprehensively applied by a major, competitive FMCG manufacturer within the South African confectionery industry. This includes extensive integration and collaboration with customers and suppliers, the formal recognition and documenting of supply chain management activities and procedures, a cross functional approach to the management of processes, the extensive measurement of activities, and a clearly defined strategies within each area of the supply chain management function within the organisation.
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<th>Description</th>
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<tbody>
<tr>
<td>3PL</td>
<td>Third party logistics service provider</td>
</tr>
<tr>
<td>AMR</td>
<td>Advanced Manufacturing Research</td>
</tr>
<tr>
<td>CPFR</td>
<td>Collaborative forecasting, planning, and replenishment</td>
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<tr>
<td>CRM</td>
<td>Customer relationship management</td>
</tr>
<tr>
<td>CSCMP</td>
<td>Council of Supply Chain Management Professionals</td>
</tr>
<tr>
<td>DC</td>
<td>Distribution centre</td>
</tr>
<tr>
<td>EDI</td>
<td>Electronic data interchange</td>
</tr>
<tr>
<td>ERP</td>
<td>Enterprise resource planning system</td>
</tr>
<tr>
<td>EVA</td>
<td>Economic value added</td>
</tr>
<tr>
<td>FMCG</td>
<td>Fast moving consumer goods</td>
</tr>
<tr>
<td>GSCF</td>
<td>Global Supply Chain Forum</td>
</tr>
<tr>
<td>HPC</td>
<td>Home personal care</td>
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<tr>
<td>IT</td>
<td>Information technology</td>
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<tr>
<td>JIT</td>
<td>Just-in-time</td>
</tr>
<tr>
<td>KPI</td>
<td>Key performance indicator</td>
</tr>
<tr>
<td>MRO</td>
<td>Maintenance, repair and operations</td>
</tr>
<tr>
<td>MRP</td>
<td>Materials requirements planning</td>
</tr>
<tr>
<td>MRP-II</td>
<td>Manufacturing resource planning</td>
</tr>
<tr>
<td>PRTM</td>
<td>Pittigilio, Rabin, Todd and McGarth</td>
</tr>
<tr>
<td>PSA</td>
<td>Product service agreement</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>Research and development</td>
</tr>
<tr>
<td>SCC</td>
<td>Supply Chain Council</td>
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<td>SCOR</td>
<td>Supply Chain Operations Reference Model</td>
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<tr>
<td>SME</td>
<td>Small and medium enterprises</td>
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<tr>
<td>SOP</td>
<td>Standard operating procedure</td>
</tr>
<tr>
<td>TQM</td>
<td>Total quality management</td>
</tr>
<tr>
<td>VMI</td>
<td>Vendor managed inventory</td>
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<td>ZAR</td>
<td>South African rand</td>
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Strategic Customer Relationship Management Sub-Processes from the GSCF Assessment Tool
CHAPTER 1

INTRODUCTION

1.1 Background

The confectionery industry in South Africa consists of those organisations that are engaged in the manufacturing and distribution of confectionery products such as chocolate, sugar confectionery, cereal bars, and chewing gum (Marketline, 2012:10). In 2011, the revenue generated in the South African confectionery market amounted to ZAR 9.709 billion, with an associated volume of 125.7 million kilograms of product (Marketline, 2012:2). The industry’s supply chain in South Africa is comprised of primary producers, raw materials distributors, manufacturers, independent retail and wholesale stores, distributors, national supermarket/hypermarket chains, and convenience stores.

From a manufacturer’s perspective, the South African confectionery industry experiences a moderate to high level of competition. This is a result of inter-organisational rivalry driven by similarity in products and end customers, low customer switching costs, relatively undifferentiated products, ease of expansion, similarity of the manufacturers, storage costs that encourage manufacturers to move product to retailers, competitor size, and the competition created by imported products produced by low-cost competitors in foreign emerging markets (Datamonitor, 2009:20).

The only complete and detailed published information on the South African confectionery industry that the researcher could find is published by Datamonitor, in the form of un-commissioned, annual reports on the industry. Datamonitor is owned by the publishing and conference company Informa. Informa publishes academic and commercial information in the form of books, journals, databases, news and research (http://www.informa.com/What-we-do/). These reports contain information on the financial value of the market and market volumes, market growth rates, category segmentation, market share, distributor market share, an analysis of the competitive
conditions prevalent in the industry, and a description of the leading companies within the industry. The 2012 edition of the report has been published by Marketline, a division of Datamonitor. The stated methodology followed by Datamonitor, is a combination of primary and secondary research.

A search of industry reports on the Internet yielded a number of websites, but the reports focused only on a particular part of the industry. Therefore, the Datamonitor/Marketline reports are used as the basis for the information on the industry, and are used extensively in the study. The validity of the reports is supported by the researcher's knowledge of the industry.

The structure of a specific industry has important implications for organisational profitability and the development of a competitive strategy. An organisation’s competitive strategy must be developed with a clear understanding of the nature of competition prevalent in the industry, as well as the potential reactions of competitors to various courses of action that the organisation may take (Porter, 1985:4).

The nature of competition prevalent in an industry is determined, and can be analysed, by five competitive forces: the entry of new competitors, the threat of substitutes, the bargaining power of buyers, the bargaining power of suppliers, and the rivalry among the existing organisations (Porter, 1985:4). Based on Michael Porter’s Five Forces model for analysing competitive conditions within an industry, the industry can be deemed to be a competitive one, as the below discussion illustrates.

### 1.1.1 Buyer Power

The South African food retail industry is concentrated, with a small group of supermarket retailers controlling a large proportion of market share. As a result, the retail chains are able to negotiate from a strong position on trade terms, pricing, and merchandising with suppliers and manufacturers. Retailers stock a wide assortment of products, which mitigates the bargaining power of suppliers of any one category of products. Confectionery manufacturers do not operate their own retail outlets, which
makes them dependent on retailers for access to the market. These factors lead to strong buyer power in the industry (Datamonitor, 2009:15). The drivers of buyer power in the industry are the low cost of switching to different confectionery suppliers, relatively undifferentiated products, the tendency of retailers to switch between suppliers, price sensitivity, financial power, and buyer independence, which is the strongest driver of buyer power (Datamonitor, 2009:15).

1.1.2 Supplier Power

The raw materials used to manufacture confectionery products are procured through international commodity markets, and manufacturers have little control over the cost of raw materials (Marketline, 2012:18). The purchasing of futures contracts on international commodity markets and the stockpiling of inventories by manufacturers reduces the impact of price fluctuations on the cost of raw materials (Datamonitor, 2009:16).

The drivers of supplier power in the South African confectionery industry are supplier size, oligopoly threat, switching costs, supplier independence, the lack of substitutable inputs, and the importance of the quality and cost of key inputs (Datamonitor, 2009:16).

1.1.3 New Entrants into the Industry

In order to establish manufacturing operations within the industry, relatively large amounts of capital expenditure are required. Most confectionery products are sold to a broad market, and must therefore be manufactured in significant volumes to meet demand and allow their manufacture to be profitable (Datamonitor, 2009:17). However, it is also possible for new entrants to enter the market on a small scale by manufacturing high value, low volume products in a craft process rather than through a mechanised process, and through the importation of products (Datamonitor, 2009:17).
There is a threat posed by the private labels marketed by supermarket chains that use their existing brand, marketing, and logistics infrastructure to provide similar and cheaper alternatives to the manufacturers’ brands. The strength of existing brands engenders loyalty from consumers, which makes it difficult for new manufacturers seeking to enter the market to convince the retail chains and independent retailers to add new products to their existing assortment of goods (Datamonitor, 2009:17).

The factors influencing the likelihood of new entrants in the confectionery market in South Africa are:

- the low cost of retailers switching suppliers;
- relatively undifferentiated products;
- the relative unimportance of scale of operations;
- low fixed costs;
- little regulation;
- the acquiescence of the incumbent manufacturers;
- accessibility to suppliers and raw materials
- the small amount of intellectual property that is required to produce confectionery products; and
- the growth rate of the market (Datamonitor, 2009:17).

1.1.4 Substitutes

Consumers typically purchase confectionery products as snack food. The substitutes for confectionery products are therefore similar snack food items such as savoury snacks, biscuits, ice-cream, dried fruit, and fresh fruit (Datamonitor, 2009:18).

The increasing publicity focused on detrimental effects of poor dietary lifestyles associated with the consumption of confectionery products, among others, has influenced consumers’ decision-making preferences, encouraging them to purchase more health-conscious alternatives, such as fruit. For most food retailers, the switching costs of consumers making health-conscious purchasing decisions are negligible, as they will usually sell both confectionery products and the healthier
substitutes. Some forms of confectionery are purchased by consumers as luxury or gift items, rather than as snack food. In these cases the substitute products are more varied, and may include gift items of similar value. Overall the threat of substitutes is deemed to be moderate (Datamonitor, 2009:18).

The factors influencing the threat of substitutes in the confectionery market in South Africa are the low cost of switching for consumers, health beneficial alternatives (such as fruit), and cheaper alternatives (such as savoury snacks) (Datamonitor, 2009:18).

1.1.5 Rivalry

The South African confectionery market is concentrated, with the largest producers in the industry by value accounting for 62.6% of the revenues in the South African market. These manufactures and their respective market shares are Kraft Foods 36.1%, Nestlé 13.5%, Tiger Brands 13.0%, and the Kellogg Company 3.3%. The balance of the market share, accounting for 34.1%, is controlled by small and medium sized (SME) manufacturers, sales agents, and distributors marketing imported products (Marketline, 2012:13).

The threat from supermarkets’ private labels and brands marketed by SME manufacturers offering cheaper alternatives, where the focus is drawn away from branding, has become a greater competitive threat during the economic downturn of 2008-2010, as consumers have become more price-conscious (Datamonitor, 2009:19).

By differentiating products through varying inherent characteristics, investment in well-known brands and a national distribution network, the top manufacturers are able to maintain their market share relative to SME manufacturers and distributors of foreign products. The competitive rivalry is greater among the three large manufacturers, given the similarity of their customers and products, as well as their use of automated, large scale manufacturing, where production capacity increases are possible (facilitated by existing technical knowledge and the availability of capital for investment purposes), and fixed costs are high (Datamonitor, 2009:19).
The drivers of rivalry in the confectionery market are the number of manufacturers and distributors, the low cost of switching between suppliers for retailers and consumers, undifferentiated products, ease of expansion, difficulty of exiting the market because of large capital investments, the lack of diversity in product offerings, the similarity of the manufacturers, storage costs that encourage manufacturers to move product to retailers, and competitor size (Datamonitor, 2009:19).

The South African confectionery industry is therefore a competitive industry with dynamic consumer-led demand and two predominant channels of distribution: independent retailers and supermarket chains. The challenges that the industry forces bring about constantly require South African manufacturers to find ways of maintaining market share and ensuring that they remain competitive in the face of relatively cheap imported products, and new entrants to the market who are motivated by the relative ease of entry.

1.2 Definition of the Problem Statement

The end of economic sanctions against South Africa during the early 1990s, the onset of globalisation due to the relaxation of tariff and trade barriers, and the liberalisation of the economy, has increased the intensity of competition faced by South African confectionery manufacturers.

The competition among South African manufacturers brought about by the number of manufacturers in the industry, the low cost of switching for buyers, the ease of expansion of operations, the difficulty of exiting the industry, relatively undifferentiated products and similarity of the manufacturers in the industry (Datamonitor, 2009a:19) further contributes to the intensity of competition faced by manufacturers in the industry.

In order for South African-based confectionery manufacturers to be able to compete against low-cost producers from emerging countries such as China, Brazil, and Malaysia, and against their local rivals, South African manufacturers must find ways to increase their competitiveness.
Central to the concept of achieving a high level of organisational performance and achieving a competitive advantage is the research done by Michael Porter, which found that an organisation has developed a competitive advantage when it is able to create value for its customers in excess of the cost of creating it (Porter, 1985:3). The value that an organisation creates in the production of its goods and services is what customers in the marketplace are willing to pay for, and superior value originates from offering lower prices than competitors offer for equivalent product benefits, or providing products with unique benefits that more than offset a higher price (Porter, 1985:3).

Producing a product of lowest total cost, relative to competitors, will ensure that an organisation will earn a greater margin and above average profits (Porter, 1985:38), or enable the organisation to market their products at a lower price, relative to competitors, as a result of the competitive advantage that is created, and thus increase its market share. Delivering the organisation’s products to customers faster than competitors, achieving higher order fill-rates, and being able to meet unexpected changes in customer demand contributes towards differentiating the organisation’s product offering, thus creating a competitive advantage.

Although an organisation may organise and manage its internal value chain\(^1\) activities optimally, it will still have a theoretical limit to the efficiency and level of effectiveness it can achieve, given the impact of a supply chain's\(^2\) performance on organisational performance (Green et al., 2008:324).

Supply chain performance is influenced by the manner in which the supply chain is managed. In order to fully realise the benefit of well-managed value chain activities, to establish a competitive advantage, and to achieve superior performance to its competitors, an organisation must actively manage its supply chain (Green et al.,

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\(^1\)The value chain is a tool which provides a "systematic way of analysing the sources of competitive advantage by disaggregating an organisation into its strategically relevant activities in order to understand the behaviour of costs and the existing and potential sources of differentiation" (Porter, 1985:33).

\(^2\) The term 'supply chain' refers to "the material and informational interchanges in the logistical process stretching from the acquisition of raw materials to delivery of finished products to the end user. All vendors, service providers, and customers are links in the supply chain" (Vitasek, 2008:153).
In order for an organisation to achieve a high level of supply chain performance, an in depth understanding of supply chain management and how it is carried out in practice, is required. South African confectionery manufacturers are therefore facing increasing levels of competition from both local rivals and abroad, and must therefore find ways of increasing their competitiveness.

1.3 Motivation and Delineation of the Study

Based on an extensive review of existing literature, the author could not find any research regarding supply chain management practices amongst South African confectionery manufacturers. A need therefore exists for such a study. To facilitate such a study, an appropriate supply chain management framework, comprising of proven best practices, needs to be identified; one that can be used to benchmark the strategic supply chain management practices of an organisation within the industry.

The study of the documented supply chain management frameworks and an analysis of their characteristics will enable the identification of the most suitable framework for this study. This analysis requires an in-depth study and description of supply chain management, and the related concepts of inter-organisational integration and collaboration. The relationship between supply chain management and competitive advantage must also be illustrated, as this is the rationale for the study of supply chain management as a means for confectionery manufacturers to increase their competitiveness. The characteristics of the confectionery industry, including the competitive conditions and the factors that influence the functioning of the supply chain must also be described and analysed, as these factors provide the context within which the respondent organisation carries out its supply chain management activities.

Due to the broad scope of supply chain management activities covered in the study, time and costs constraints limited this benchmarking study to an analysis of the supply chain activities of a single manufacturing organisation only. Therefore, the study will focus on a leading manufacturing organisation that forms part of the South African confectionery industry. Apart from manufacturing many of its products, it also
sources products from a variety of suppliers and, once the products are manufactured, ensures the distribution of its products to end users. The organisation selected is one of the three largest confectionery manufacturers in the South African industry, based on market share, and has the ability to collaborate with key customers and suppliers, and implement supply chain management best practice via the integration of inter-organisational business processes.

The selection of the respondent organisation in the study is based on its position as a leading, large-scale organisation within the South African confectionery industry, based on the 2011 industry statistics provided by the Datamonitor Confectionery in South Africa Industry Profile. Due to concerns regarding the confidentiality and in-depth nature of the information provided, the manufacturer requested that its name not be disclosed.

1.4 Objectives of the Study

The objectives of the study are therefore as follows:

Primary objective:

- to apply an international supply chain management best practice framework, in order to identify and critically analyse the state of supply chain management practices in a leading manufacturer in the South African confectionery industry.

Secondary objectives:

- to illustrate the role of supply chain management in creating competitive advantage for organisations;

- to identify, in the context of the study, an appropriate best practice supply chain management framework that can be applied to the study of the supply chain management practices of a leading South African confectionery manufacturer; and
• to provide a detailed description and analysis of the structure, market characteristics, and competitive conditions prevalent in the South African confectionery industry.

1.5 Limitations of the Study

The primary limitation of the study is the focus on a single large South African confectionery manufacturer as the respondent to the study. The results of the study will therefore only be applicable to this manufacturer, and cannot be generalised as an industry characteristic. However, the findings of the study will provide a large amount of detail on the supply chain management practices of a leading confectionery manufacturer, which can be used by other confectionery manufacturers to benchmark their practices.

A second limitation of the study is the use of a single supply chain management best practice framework as the means of testing the state of supply chain management in the chosen company, as it precludes the use of other supply chain management frameworks. An in depth study and analysis of the documented supply chain management frameworks will however, be conducted to determine the most suitable framework for the purpose of benchmarking the respondent organisation's practices. Furthermore, the study will focus on the strategic-level supply chain processes and tasks, based on the chosen best practice framework, and thus preclude operational-level supply chain processes and tasks. However, the strategic processes establish the environment and structure within which the operational processes and tasks are carried out.

1.6 Research Methodology

For the theoretical aspects of the study a literature review of existing academic literature and publications that relate to the respective supply chain management frameworks will be conducted. The research on the South African confectionery
industry will be based on a report published by Datamonitor and, more recently, Marketline. Datamonitor and Marketline are owned by the publishing and conference company Informa.

A qualitative research instrument will be used to conduct face-to-face interviews with key individuals in the respondent organisation that are directly responsible for managing the processes and activities identified within the best practice supply chain management framework. These findings will then be used to determine the state of the respondent organisation's supply chain management practices in relation to the chosen supply chain management framework.

1.7 Study Outline

The study is set out as follows:

In Chapter 2, the concepts of supply chain management, integration, and collaboration will be defined and analysed. The role of supply chain management in creating competitive advantage will also be explored.

In Chapter 3 existing supply chain management frameworks will be analysed, and an appropriate framework that will be used to analyse and benchmark the supply chain practices of a leading confectionery manufacturer will be identified.

In Chapter 4 the South African confectionery industry will be described, with the focus on a detailed description and analysis of the structure, market characteristics, and competitive conditions prevalent in the South African confectionery industry.

Chapter 5 will discuss the research design, research approach, case study methodology, the selection of the respondent organisation and its characteristics, the assessment tool design, and the manner in which the findings of the study will be analysed and presented.
In Chapter 6, the findings of the case study gathered from the primary research on the state of the respondent organisation's supply chain management practices will be presented and analysed.

A conclusion on the findings of the study will be discussed in Chapter 7.
CHAPTER 2

SUPPLY CHAIN MANAGEMENT AND COMPETITIVE ADVANTAGE

The purpose of this chapter is to provide the theoretical background to the study by defining and exploring the theoretical concepts that are central to the objectives of the study, namely supply chain management, supply chain integration, and competitive advantage. Given the focus on the supply chain and the implementation of supply chain management, the development of these concepts will be discussed, as well as the theory underlying these concepts. Supply chain integration will be explored in terms of the benefits it offers, as well as the nature of supply chain integration and its basis in inter-organisational collaboration. Finally, the concept of competitive advantage, as developed by Michael Porter (1985), will be discussed as well, and the way in which supply chain management creates competitive advantage for organisations.

2.1 The Development of Supply Chain Management

The development of the concept and the practice of supply chain management began with the recognition of the concept of logistics management during the 1960s, when the first texts about logistics management were written (Stock & Lambert, 2001:12) and leading academic institutions recognised logistics management as a field of study (Vogt et al., 2007:4).

Before the establishment of logistics management, a number of activities, while being closely related in the everyday operations of an organisation, were managed as disparate functions. These included procurement, manufacturing, inventory, warehousing, materials handling, communication and information, reverse logistics, packaging, finished goods inventory, order processing, transportation, and customer service. The marketing and sales activities of the organisation, and production and manufacturing operations were also treated as separate functions. However, within
organisations it came to be recognised that the activities listed above were actually interdependent, and the ability for any individual function to operate effectively required coordination with other activities. This realisation led to the grouping of activities into either materials management (inbound logistics), or physical distribution (outbound logistics) (Vogt et al., 2007:10). Management’s focus was on physical distribution, given the higher value of finished goods, the focus on sales and revenue generation and the associated inventory, warehousing, materials handling, and packaging costs being relatively higher than the costs associated with materials management and raw material handling (Coyle et al., 2003:13).

While the overall performance of the activities listed above was improved, organising the activities within the organisation into two separate groups still represented a suboptimal solution. The reality within an organisation utilising and producing physical goods is that the process of bringing materials into the organisation, performing value-adding and processing activities, and moving those goods out of the organisation into the market place represents a single goods flow. By managing the goods flow through two separate management functions, namely materials management and physical distribution, organisations were effectively splitting the management of the goods flow into two separate areas of responsibility. In addition, manufacturing operations and the marketing and sales functions of the organisation were viewed as activities that were managed separately from the physical handling and storage of goods and materials (Vogt et al., 2007:10).

The development of the systems approach led to the merging of materials management and physical distribution into a single function known as logistics management, through which all of the activities that had previously been managed as disparate functions, would be managed, and coordinated. The systems approach is a paradigm that states that "all functions or activities need to be understood in terms of how they affect, and are affected by, other elements and activities with which they interact" (Stock & Lambert, 2001:4). The systems approach is especially relevant within the context of logistics management, as each activity listed above influences the creation of an uninterrupted goods flow throughout the organisation, ultimately affecting the manner in which, and the ability of the organisation to produce goods, and to move those goods to market where those goods can be sold and revenues
can be realised (Stock & Lambert, 2001:4). The global trend of the deregulation of transportation in the 1980s provided an opportunity to coordinate inbound and outbound transportation movements of large shippers, which could positively affect a carrier’s operating cost by minimising empty backhaul trips, leading to lower rates for the shipper. The growing proportion of materials and components sourced internationally, and the required coordination of international transportation, production scheduling, and materials requirements for production by inbound logistics in order to enable operations to provide finished goods required by physical distribution led to the need for a comprehensive and holistic management approach. The globalisation of the sources of supply of materials required for production therefore highlighted that inbound and outbound logistics coordination was becoming critical for operational and organisational success (Coyle et al., 2003:15).

While the recognition of logistics management as a comprehensive function within the organisation led to the development of operational effectiveness and efficiencies, the efficient movement of goods to customers, and time and place utility for the organisation and its customers (Stock & Lambert, 2001:3), it still represented a suboptimal solution, because the marketing and manufacturing operations of the organisation were still managed as separate functions. In order for maximum efficiency and effectiveness to be achieved in producing goods and delivering those goods to market in accordance with customer requirements, the scope of the systems approach was extended to include the marketing and manufacturing functions of the organisation.

The concept of managing logistics, marketing, and production as an interdependent system became known as supply chain management (Vogt et al., 2007:10). However, supply chain management involves more than managing the internal operations of an organisation as a holistic unit, it also includes managing the goods and information flow from the point of origin to the point of consumption in the supply chain, and managing commercial relationships and collaborating with the organisation’s key customers and suppliers. In addition to the rationale for the development of supply chain management as it applied to the organisation’s internal functioning, a number of exogenous factors led to the development of supply chain management.
In the 1950s and 1960s, the concept of supply chain management was virtually non-existent. The management and organisational structure of the main functions of the organisation was fragmented, namely marketing, finance, and production, which led to conflicts arising as a result of divergent objectives in areas such as the nature of production runs, inventory holding, order processing, delivery speed, and warehousing activities. The lack of understanding of the key cost trade-offs within the functions of the organisation, the inertia of established traditions and conventions, and the focus on areas other than those related to logistics activities, led to a suboptimal operating performance (Ballou, 2007:333). Manufacturers in the United States were utilising mass production techniques to reduce costs and improve productivity by employing mechanised high volume production lines and developing economies of scale. The shortcoming of these mass production techniques was that they paid little attention to creating supplier relationships, improving process design and flexibility, or improving product quality. New product design and development was a slow process and was based exclusively on technology, expertise, and market intelligence that existed within the organisation, without taking into account the knowledge, expertise, and resources that the organisation’s suppliers and customers could contribute to the product commercialisation process (Wisner et al., 2009:11).

The practice of sharing technology, operational expertise, information about inventory positions, demand forecasts, production plans, and marketing activities such as product promotions through strategic relationships between manufacturers and suppliers, was virtually non-existent in the 1950s and 1960s. Production processes were supported with large investments and large physical holdings of raw materials, components, and work in progress inventories, to prevent disruptions and ensure constant material flows (Wisner et al., 2009:12).

In the 1960s and 1970s, the study and practice of logistics management and physical distribution evolved. At this time however, the costs generated by logistics and supply chain activities were high, as measured as a percentage of gross domestic product (GDP) in the United States (15%), and China (24%) and in terms of logistics costs as a percentage of sales, in the United Kingdom (16%), Japan (26.5%), and Australia (14.1%) (Ballou, 2007:335). The attention on physical distribution with its outbound focus came about as it represented about two thirds of logistics costs and it was
beginning to be viewed as a component of the marketing mix (place or physical distribution) (Ballou, 2007:335). Materials requirements planning (MRP) systems and manufacturing resource planning (MRP-II) systems were developed as manufacturers recognised the impact of keeping high levels of inventory on storage space requirements and inventory carrying costs. The development of information technology (IT) further enabled inventory-tracking software to be developed, which allowed the level and location of inventories to be communicated within the organisation. The improved planning and management of the inventory that resulted from the information that the inventory tracking programs provided to management further reduced inventory costs (Wisner et al., 2009:12).

In the 1980s, the term 'supply chain management' began to be recognised. Intense global competition arising from emerging Asian manufacturers, based in countries such as South Korea, Taiwan, and Japan, brought on by globalisation, necessitated U.S. manufacturers to offer low-cost, high-quality products and comparatively higher levels of customer service (Wisner et al., 2009:12). The deregulation of transportation in the 1980s established a competitive market for transportation, particularly in the realm of rail and road transport, which created new opportunities for efficiencies to be established through the reconfiguration of organisations’ inbound and outbound transportation activities. The advancements made in technology further enabled the new transportation strategies to be implemented, and enabled low cost, frequent communication and electronic data interchange (EDI) to take place, both amongst an organisation’s divisions and its customers and suppliers (Coyle et al., 2003:13). Manufacturers began utilising supply chain based inventory management approaches, such as Just-in-Time (JIT), and quality improvement initiatives such as total quality management (TQM) to improve quality and manufacturing efficiency, and to reduce lead-times enabling them to compete against their foreign rivals (Wisner et al., 2009:12). The success of these initiatives was based largely on their relationships with their customers and the performance of the manufacturer’s suppliers. Closer relationships were developed with the manufacturer’s customers and suppliers, which established the foundation for the development and implementation of supply chain management (Wisner et al., 2009:12).
As markets became more globalised in the 1990s, due to the relaxation of trade barriers and the reductions in trade tariffs, and the emergence of competitors from developing countries such as Brazil, Russia, India, and China, the intensity of competition faced by U.S. manufacturers increased further. This increased competitive intensity was also accompanied by increasing logistics and inventory carrying costs, which made it difficult to improve quality and customer service performance whilst remaining cost competitive (Wisner et al., 2009:13). Supply chain management became the focal point for making organisations more competitive in the global marketplace (Coyle et al., 2003:15). Manufacturers realised that in order to remain competitive in the new global economy, they would have to work closely with the suppliers that had a significant impact on the quality of their products and the costs incurred in their operations. This understanding led to the establishment of formal relationships, the sharing of information through EDI and software-based enterprise resource planning (ERP) systems, inter-organisational collaboration, and ultimately business process integration with first and second tier customers and suppliers, with a focus on increased supply chain capabilities (Ballou, 2007:340; Wisner et al., 2009:13).

The evolution of supply chain management can also be linked to the extent of integration, functional structures, and management approaches that existed at various points in time. This evolution can be divided generally into four broad stages of development.

The initial stage of supply chain management involved no internal integration, functional silos, top-down management, or reactive short-term planning. The second stage of the evolution began to focus on functional integration, the internal flow of goods, an emphasis on cost-reduction, and a realisation that efficiencies could be generated as a result of internal integration (Wisner, et al., 2009:263). The third stage focused on internal organisational integration and the realisation of integrated goods and information flows throughout the organisation, logistics management, and lean production activities to manage goods and information flows, as well as the measurement of supplier performance and customer service performance (Wisner, et al., 2009:263).
This laid the foundation for external integration, which is the fourth stage of the evolution that focused on extending integration efforts to the supply chain by integrating suppliers and customers with the focal organisation, and the realisation of the need to control goods and information flows to second and third tier customers in the supply chain (Wisner et al., 2009:263). The final stage in the evolution also placed an emphasis on the development of alliances with key suppliers and communication capabilities within the supply chain (Wisner et al., 2009:263).

2.2 Supply Chain Management Defined

Since the early 1980s when the term ‘supply chain management’ was first used, a large number of definitions have been developed and proposed in the literature. Given the number of existing definitions for supply chain management, it is pertinent to consider the definitions adopted by the prominent supply chain management organisations, professional bodies, and academics, in order to establish the definition of supply chain management.

However, before supply chain management is defined, the term ‘supply chain’ must be defined, as it is the supply chain that is the overarching area of focus within supply chain management.

The term ‘supply chain’ refers to "the material and informational interchanges in the logistical process, stretching from the acquisition of raw materials to the delivery of finished products to the end user. All vendors, service providers, and customers are links in the supply chain" (Vitasek, 2008:153).

From this definition one can deduce that the supply chain covers the entire span of goods from raw materials to finished products, and includes all the organisations involved in the process of bringing finished goods to the final customer, from the basic raw material producer to the retail outlet, and ultimately the consumer. Logistics activities such as transportation, inventory management, communication, demand forecasting, and materials handling link the various members of the supply chain, and facilitate the flow and storage of goods through the supply chain (Vogt et al.,
Therefore, the supply chain can be considered as the end-to-end and continuous materials and information flow between customers, manufacturers, and suppliers (Samaranayake, 2005:47).

The Supply-Chain Council’s (SCC) definition of supply chain management is: “managing supply and demand, sourcing raw materials and parts, manufacturing and assembly, warehousing and inventory tracking, order entry and order management, distribution across all channels, and delivery to the customer” (Wisner et al., 2009:8).

It is evident that the SCC defines supply chain management in terms of the operational and tactical functions, and excludes the concepts of integration and collaboration among functions and organisations in the supply chain.

According to the Council of Supply Chain Management Professionals (CSCMP) supply chain management “encompasses the planning and management of all activities involved in sourcing and procurement, conversion, and all logistics management activities. Importantly, it also includes coordination and collaboration with channel partners, which can be suppliers, intermediaries, third-party service providers, and customers. In essence, supply chain management integrates supply and demand management within and across companies” (Council of Supply Chain Management Professionals, 2010).

Furthermore the CSCMP delineates the boundaries of supply chain management, by stating that “supply chain management is an integrating function with primary responsibility for linking major business functions and business processes within and across companies into a cohesive and high-performing business model. It includes all of the logistics management activities, as well as manufacturing operations, and it drives the coordination of processes and activities within and across marketing, sales, product design, finance and information technology” (Council of Supply Chain Management Professionals, 2010).

The CSCMP definition of supply chain management is a broad definition, as it refers to the scope of supply chain management, the role of relationships in the supply chain, and the expected outcome of supply chain management as being the
development of a business model capable of achieving high levels of performance through the integration of business processes and business functions in the supply chain.

Stock & Boyer (2009) conducted a study to develop an encompassing definition of supply chain management based on an analysis of 173 unique definitions of supply chain management that have been proposed in the literature. From this analysis the most commonly cited components (themes and sub themes) contained in the definitions were compiled. The result of this study was the following definition of supply chain management:

“The management of a network of relationships within an organisation and between interdependent organisations and business units consisting of material suppliers, purchasing, production facilities, logistics, marketing, and related systems that facilitate the forward and reverse flow of materials, services, finances and information from the original producer to final customer with the benefits of adding value, maximising profitability though efficiencies, and achieving customer satisfaction” (Stock & Boyer, 2009:706).

The definition proposed by Stock & Boyer is relatively consistent with that of the CSCMP, in that it also refers to the relationships and linkages between internal functions and between organisations, and the flows that are managed within the supply chain. However, it goes further in its description of the flows that are managed in the supply chain, and in the benefits that can be expected through the management of the supply chain.

The Global Supply Chain Forum (GSCF) defines supply chain management as “the integration of key business processes from end user through original suppliers that provides products, services and information that add value for customers and other stakeholders” (Lambert et al., 1998:1).

The GSCF’s definition recognises the need for collaboration and the integration of business processes in the supply chain, the provision of products, services, and information, and the goal of adding value for customers and stakeholders. All of these concepts play an important role in supply chain management, none more so
than the need for business processes as enabling mechanisms in the management of the various flows in the supply chain and provision of products, services, and information flows that add value to the supply chain and to the final consumer.

The integration of these processes across organisational functions and boundaries with suppliers and customers forms the basis on which supply chain management is developed in the supply chain. The development of supply chain management in the supply chain, and the activities and outcomes of supply chain management as described in the definitions discussed above, can only be realised if the supply chain is managed in an integrated and collaborative manner.

### 2.3 Supply Chain Integration

The importance of integration in supply chain management is widely recognised, which is indicated by its inclusion in the definitions of supply chain management formulated both by the CSCMP who propose that “supply chain management is an integrating function [and] supply chain management integrates supply and demand management”, and the GSCF who consider it to be “the integration of key business processes”. The importance and role of integration in supply chain management is also widely recognised in the literature. Leavy (2006:336) states that “Making supply chain management a competitive advantage requires... meeting the integration challenge”, (Richey et al., 2009:826) pose that “Integration is now widely considered the core of successful supply chain management, both among academics and practitioners”, Pagell (2004:460) suggests that “the entire concept of supply chain management is really predicated on integration”, and Smart (2008:229) states that “integration... is frequently taken as a standard requirement of successful management of the supply chain”.

### 2.3.1 Supply Chain Integration Defined

The Oxford Dictionary of English (Soanes & Stevenson, 2005) defines integration as the process or action of integrating which is “to combine one thing with another to
form a whole”. In the context of supply chain management this involves combining the processes and activities of two or more internal functions or organisations to form a unified and coherent supply chain.

In the business and management paradigm, The Oxford Dictionary of Business and Management (Law, 2009) defines integration as “The combination of two or more companies for their mutual benefit, by reducing competition, saving costs by reducing overheads, capturing a larger market share, pooling resources, cooperating on research and development, enhancing competitive advantage, etc.”. While the above definition refers to the merger or acquisition of two or more organisations, in the context of supply chain management the organisations remain independent and under separate ownership control. Thus, the process of integration within the context of supply chain management does not involve combining the two organisations into one organisation through merger or acquisition, but rather aims to achieve the benefits of vertical integration as described in the definition, without the burden of financial ownership (Bowersox et al., 2003:19).

2.3.2 The Factors Driving Supply Chain Integration

A number of factors led to an increased focus on supply chain integration. The information revolution brought on by the development of effective and affordable IT solutions provided the infrastructure that allows for the sharing of information and increased levels of communication, both within and amongst organisations, which is required for integration in the supply chain to take place. Increased levels of global competition have created the need for the provision of higher levels of customer service, in terms of order lead-times, the provision of order-specific information, flexibility in delivery times and locations, and the provision of after-sales service and support (Power, 2005:253).

More demanding consumers, shorter product lifecycles, and the development of demand-driven markets arising from a reluctance of customers downstream in the supply chain to hold large amounts of inventory, created the need for organisations to focus on integration in the supply chain as a means of meeting these demands. The
emergence of new types of inter-organisational relationships in the form of commercial partnerships and strategic alliances also led organisations to focus on how to integrate their processes and activities in order to realise the objectives of these cooperative agreements (Power, 2005:253).

Fawcett et al., (2008:37) further identified the forces driving supply chain integration as being: more demanding customers, greater competitive intensity, shifting power from producers to distributors in the distribution channel, economic globalisation, tighter alliance relationships, shorter product life-cycles, continued merger activity and consolidation of industries, the need for better information, new information technologies, and a shifting competitive focus that is moving away from individual organisations’ performance to supply chain level competitiveness.

Richey et al. (2009:828) categorise the drivers of supply chain integration into internal and external drivers of supply chain integration. Internally, the desire to improve organisational performance through the development of more efficient and effective trade relationships was identified as a critical driver of supply chain integration. The external drivers of integration were identified as being: fast-changing market demands requiring organisations to integrate supply chain processes in order to be more responsive to customers’ demand for products to be delivered faster and more reliably, competition in the marketplace requiring the efficient and effective allocation of resources to maintain competitive parity or achieve competitive advantage, and the shift of power downstream in the channel, with the channel leader requiring organisations to conform to process and technology integration initiatives (Richey et al., 2009:828).

2.3.3 The Nature of Supply Chain Integration

A distinction has been made in the literature between internal integration and external integration (Chen et al., 2009; Richey et al., 2010).

It has been proposed that internal and external integration should be treated as related but separate concepts, given that significant differences exist between the
integration of functional areas in an organisation, and integration that takes place between two or more organisations. The differences between organisations include organisational ownership, structure, policies, culture, activities, and governance mechanisms, which exist to a far larger extent between different organisations than is the case between the different divisions or functions of an organisation. Another reason for making the distinction is that organisations often place more emphasis on either internal or external integration, or achieve greater success in one type of integration over the other (Chen et al., 2009:66).

Internal integration is defined as integration within the organisation’s boundaries and across organisational functions that aim to develop a process-orientated focus, where various functional areas work together and co-ordinate their activities to avoid sub-optimisation (Richey et al., 2010), achieve system-wide integration among internal functions (Zailani & Rajagopal, 2005:383), and is measured by the extent to which organisational functions share information and work towards achieving common strategic objectives (Lambert et al., 2005:31).

The integration of the different functional areas and processes within an organisation allows for supply chain oriented goals and objectives to be met by creating a collaborative process that is aimed at delivering products and services to customers.

External integration occurs between organisations, and emerges when two or more organisations "voluntarily agree to integrate human, financial, or technical resources in an effort to create a new, more efficient, effective, or relevant business model" (Bowersox, et al., 2003:22). Bagchi et al., (2005) add another dimension to the definition of external integration by defining external integration as the comprehensive collaboration among supply chain network members in strategic, tactical, and operational decision-making.

The elements of an integrated supply chain model are "information systems (management of information and financial flows), inventory management (management of product and material flows), supply chain relationships (management of relationships between trading partners)" (Power, 2005:253), and the
involvement of key customers and suppliers in decision-making (Bagchi et al., 2005:282).

The bases of integration in the supply chain are “cooperation, collaboration, information sharing, trust, partnerships, shared technology, and a fundamental shift from managing individual functional processes to managing integrated” inter-functional and inter-organisational processes (Power, 2005:253).

A contingency framework for understanding the development and implementation of supply chain management was developed by Fawcett et al. (2008).

The framework indicates that a number of bridges exist to establishing effective supply chain integration. The development of collaboration amongst supply chain partners is based on the measurement of performance, the establishment of alignment mechanisms, and cross-functional process change. An effective supply chain orientated information system, the empowerment of personnel to achieve supply chain goals, and the design of inter-organisational alliances were other bridges that were identified. However, in order for these bridges to be effective, management must redesign its approach to resolving problems and addressing challenges that may arise in the integration process, by developing a business model and management style that is suited to collaborative relationships in the supply chain (Fawcett et al., 2008:37).

The framework also identified barriers to effective supply chain management, which emanate from either inter-organisational rivalry or managerial complexity. Inter-organisational rivalry is defined as a misalignment of motives and behaviours among allying organisations in the supply chain. The barriers under this category include internal and external ‘turf protection’, poor on-going collaboration in the supply chain, and a lack of trust among organisations in the supply chain. Other barriers arise from managerial complexity or misalignments in the processes, structure, and culture of the organisations that are attempting to integrate. The barriers created by managerial complexity stem from information system and technological incompatibility, inadequate measurement systems, and conflicting organisational structures and culture (Fawcett et al., 2008:37).
Other barriers include a lack of top management support, non-aligned strategic and operating philosophies, an unwillingness to share risks and rewards, inflexible organisational systems and processes, resistance to change, and a lack of training for new mind-sets and skills required for integration (Fawcett et al., 2008:37). Richey et al. (2009) identified two broad factors from an internal perspective that represented barriers to integration: internal planning failure and external monitoring failure. The internal planning failure refers to the absence of an effective planning mechanism that facilitates the synergy of business practices, and external monitoring failure refers to the lack of an internal mechanism that enables the monitoring of the external environment (Richey et al., 2009:829).

In order for integration to take place in the supply chain, collaborative relationships must be developed between organisations. The existence of collaboration across enterprises in the supply chain is the basis on which the integration of specific activities and processes takes place.

2.3.4 Collaboration in the Supply Chain

Bowersox et al. (2003:22) describe cross-enterprise collaboration as emerging when "two or more organisations voluntarily agree to integrate human, financial, or technical resources in an effort to create a new, more efficient, effective, or relevant business model". Collaboration can take the form of any inter-organisational relationship that could range from engagement that takes place at all management levels and is multifunctional in nature, to involving only specific areas or processes, such as procurement, selling, functional integration, or process outsourcing. The collaborative effort is then underpinned by an appropriate governance mechanism that delineates the channels of communication and individuals or teams responsible for managing the cross-enterprise collaboration effort in the respective organisations.

Through cross-enterprise collaboration, organisations in the supply chain voluntarily create joint policies and integrate processes to eliminate the duplication of activities and non-productive activities, in order to achieve maximum productivity in their operations. By engaging in cross-enterprise collaboration, organisations create an
extended enterprise wherein activities and strategy are managed and developed through the sharing of human resource talent, information, market and industry knowledge, and financial resources. These resources are committed voluntarily by the organisations in the supply chain in the pursuit of jointly defined goals, which if achieved, provide a greater benefit to the organisations concerned than if they had been transacting on an adversarial basis (Bowersox et al., 2003:22).

Collaboration takes the form of a sense of partnership between two organisations, where both organisations recognise their interdependence and potential for gains to be realised through partnership and cooperation (Ireland & Crum, 2005:73). Supply chain collaboration requires an organisation to educate its key trading partners and service providers in its business processes, goods, and information flows, and respectively, how it’s trading partners plan and execute their activities. Collaboration requires the organisation to make decisions regarding the nature of, and the means by which information and institutional knowledge is shared with trading partners. The respective organisations must determine the nature of the collaborative relationship that is to be established, and the potential benefits and improvements that can be made. The development of the collaborative relationship must include the measurement and monitoring of results, and the continuous improvement of collaborative processes and mechanisms (Ireland & Crum, 2005:78).

Contracting with suppliers for services, functional outsourcing, and process outsourcing are an extension of the traditional buying and selling of goods and services between two independent organisations, albeit for a specified period of time. These outsourcing and contracting arrangements typically follow a command and control management system, where the buying organisation oversees the relationship and dictates the terms of the relationship to the supplier. The exchange mechanism is the transaction price, which is driven by the economics and practices of the market in each particular industry (Bowersox et al., 2003:20).

While outsourcing arrangements and contracting require an acceptable relationship between the service provider and the outsourcing organisation, the dynamics of these relationships are primarily described in terms of the service level which is expected and the price of the service being provided, and therefore do not represent
cross-enterprise collaboration in the supply chain (Bowersox et al., 2003:22). In order for these relationships to be considered collaborative, appropriate governance mechanisms, communication, joint decision-making, and common goals must be established.

Kampstra et al. (2006:312) developed a model to illustrate how the growth path of supply chain management takes place. The growth path of collaboration starts with an 'arm's length' environment where no collaboration or meaningful communication takes place, and progresses to a partnership level where collaboration efforts are structured and formalised, knowledge is shared between members of the supply chain, and extended financial linkages, such as sharing of investments and profits, are established. This process is transformational, and takes place over time as the benefits and targeted levels of performance resulting from the collaborative effort are realised, and the constraints to collaboration are removed.

The steps in the growth path are:

- arm's length;
- communication;
- coordination;
- intensive collaboration; and
- partnerships.

Barratt (2004:31) identified the need for collaboration as arising from a number of factors that lead to the sub-optimisation of the functioning of the supply chain, whereby costs and inventory-holding are shifted to other parts of the supply chain, there is a disconnect between supply and demand, and isolated planning and forecasting is taking place. These factors are as follows:

- planning by an organisation performed in isolation, and without considering the impact that other organisations' internal activities and plans will have on the effectiveness of its plan;
- the misalignment experienced in supply and demand when organisation's run promotions on products to increase demand, or new products are launched;
• poor communication caused by functional barriers and the absence of communication channels with other organisations in the supply chain;
• a lack of understanding of an organisation's own internal processes, the internal processes of other organisations in the supply chain, and how those external processes interact and impact upon an organisation's internal processes;
• the misalignment and ignorance of performance measures across different organisations in the supply chain, as well as between internal functions such as purchasing, manufacturing, logistics, and sales; and
• information that is used for decision-making is often inaccurate, unreliable, and in different formats across the supply chain, which leads to poor decision-making

Collaboration opportunities arise in a number of areas and can be broadly grouped into demand, supply, and business areas. Supply-side opportunities emanate from constraints in the supply of goods and services, the potential for optimisation in supply processes, replenishment, returns and markdowns of goods, outsourcing, and transportation. Demand-side opportunities centre on promotional activities, marketing, and demand planning and forecasting. Business level opportunities focus on developing competitive advantage, delivered value, cost, sales revenues, profits, and creating business arrangements that are able to produce mutually beneficial outcomes for the trading partners concerned (Ireland & Crum, 2005:79).

Sjkoett-Larsen et al. (2003:542) conducted a survey-based study of Danish companies. They identified the most relevant aspects of inter-organisational collaboration as being (in order of most to least relevant):

• mutual trust;
• common goal setting;
• data exchange among organisations;
• having formal contracts in place;
• the number of transactions taking place in terms of information;
• a mutual dependence among respective organisations;
• the number of transactions in terms of products being traded;
• the number of transactions in terms of payments made;
- social relations among the organisation's management and staff; and
- specific investments among companies.

The findings of this research indicate that trust, common goals, and the exchange of information are the most relevant factors in the development of inter-organisational collaboration, as opposed to the number and value of transactions.

A study conducted by Simatupang and Sridharan (2005:44) on the development of an instrument to measure the extent of collaboration in the supply chain consisting of suppliers and retailers, supports this view of collaboration. Their model for measuring collaboration jointly measures collaborative practices in information sharing, decision synchronisation, and incentive alignment.

Collaborative efforts between organisations require cross-functional teams from both organisations to be established in order for all the functional areas that will form part of the collaborative effort to be represented, and to allow for input into the development of the collaboration definition and design (Ireland & Crum, 2005:74). The inclusion of executive sponsors, senior directors, and supply chain process users in the cross-functional teams leading the collaborative effort, facilitates the transformational process for an organisation in areas including culture, organisational structure and processes, performance metrics and incentive mechanisms, institutional trust, and technology. Instituting such changes requires top management sponsorship and support (Ireland & Crum, 2005:75).

The products and strategic business units that will be included in a supply chain collaboration effort are identified and agreed upon by the respective cross-functional teams. The considerations to be made in the selection of products to be included in the collaboration effort include: selecting core products with which the organisation is identified, selecting products that are strategic to the organisation and its customers, selecting products that are experiencing supply chain problems such as high stock out frequency, excessive inventory holdings, poor forecasting and poor scorecard performance, highly seasonal products, and promotional products for which accurate forecasts are not being made (Ireland & Crum, 2005:81). Metrics and scorecards that are identified as being central to the success of a collaboration effort are agreed
upon. Once all the relevant decisions pertaining to the collaboration effort have been concluded, a pilot program is defined and agreed upon, including how the process will function and the roles and responsibilities assigned to each cross-functional team and organisation respectively.

Change is required for organisations to move towards a collaborative culture. The areas in which changes are required are as follows (Barratt, 2004:37):

- **Change management:** A large degree of change is required for collaboration to take place, both within an organisation, and externally with the organisation's customers and suppliers. The manner in which the employees work, make decisions, and share information amongst internal functions and with customers and suppliers will require change, which must be managed in order to prevent internal resistance.

- **Cross-functional activities:** The way in which activities that span different functions and departments take place must remove the boundaries that prevent information from being shared and the development of trust required for collaboration from being established.

- **Process alignment:** Supply chain collaboration necessitates organisations in the supply chain adopting a process approach, which will result in functional and organisational boundaries being crossed. It will require the support of senior management to overcome resistance caused by traditional functional or organisational divisions.

- **Joint decision-making:** The traditional isolated approach to planning and decision-making would have to change to a process whereby all of the factors influencing decisions are visible and understood by all functions and the relevant organisations in the supply chain, and based on this knowledge, plans are made jointly.

- **Supply chain metrics:** The majority of supply chain metrics being used by organisations are focused on internal logistics performance, which is not applicable to the supply chain as a whole. By sharing process metrics and aligning those with other organisations in the supply chain, inefficiencies and sub-optimisation can be eliminated.
The sustainability of collaboration efforts in the supply chain is dependent on a number of factors:

- resources and commitment;
- inter-organisational support, both from senior management and by gaining the support of supporting and secondary functions;
- the corporate focus must remain on the supply chain, with competing interests being managed to prevent the loss of support for the collaborative effort;
- the business case must be demonstrated with tangible results and benefits over time, to gain on-going support from senior management; and
- the role of technology must be understood in terms of its ability to facilitate collaboration, and its use must not be seen as necessary for collaboration efforts to take place.

A detailed framework that describes how integration in the supply chain is to be achieved is required in order for the benefits of inter-organisational collaboration to be realised, the integration of activities and processes in the supply chain to take place, and ultimately the management of the supply chain to take place. The discussion of supply chain management frameworks is the topic of Chapter 3.

2.4 Competitive Advantage

2.4.1 Michael Porter's Theory of Competitive Advantage

how competitive advantage is established, with the relational and cooperation-based sources of competitive advantage discussed in section 2.4.2.

Competition within industries is at the core of the success or failure of business organisations. Competitive strategy is the basis of the decisions that aim to establish a competitive position for the organisation within an industry, in order to establish a profitable and sustainable position against the forces that determine the nature and intensity of industry competition (Porter, 1985:1).

The formulation of a competitive strategy consists of two central considerations. The first is the attractiveness of industries for long-term profitability and the factors that determine it. Not all industries offer the same opportunities for sustained profitability, and an essential component of organisational profitability is the profitability of the industry in which it operates. The second consideration in the formulation of competitive strategy is the determinants of relative competitive position within an industry (Porter, 1985:1). Both industry attractiveness and competitive position may be influenced by an organisation through its competitive strategy, which makes the choice of competitive strategy an important consideration. While an organisation may have little influence over industry attractiveness, it does have a greater influence over its own competitive positioning, which in turn has the ability to make an industry more or less attractive, depending on the effectiveness of the positioning and the advantage that is to be created over competitors (Porter, 1985:2).

An organisation is said to develop a competitive advantage over its competitors when it is able to create value for its customers in excess of the cost of creating it. The value that an organisation creates in the production of its goods and services is what customers in the marketplace "are willing to pay for, and superior value originates from offering lower prices than competitors offer for equivalent product benefits, or providing products with unique benefits that more than offset a higher price" (Porter, 1985:3).
2.4.1.1 Structural Analysis of Industries: The Five Competitive Forces Model

The structure of a specific industry has important implications for organisational profitability and the development of a competitive strategy. An organisation’s competitive strategy must be developed with a clear understanding of the nature of competition prevalent in the industry, as well as the potential reactions of competitors to various courses of action that the organisation may take (Porter, 1985:4).

The nature of competition prevalent in an industry is determined by five competitive forces: the entry of new competitors, the threat of substitutes, the bargaining power of buyers, the bargaining power of suppliers, and the rivalry among the existing organisations (see Figure 2.1) (Porter, 1998:6).

![Figure: 2.1 Forces Driving Industry Competition](image)

Source: Porter (1998:4)
The strength of the barriers to entry, along with industry profitability and the potential rate of return, will determine the extent of new entrants to the industry. This places a limit on the prices charged for products, and shapes the level of investment required to deter new competitors entering the industry. Entry barriers to an industry include economies of scale, proprietary product differences, brand identity, switching costs, capital requirements, access to distribution infrastructure, absolute cost advantages, government policy, and expected retaliation from existing industry players (Porter, 1985:6).

The existence of substitutes influences the prices that organisations can charge for the products that they produce. The influence of substitutes on the prices of products will be particularly relevant in markets with high price elasticity. The determinants of a substitution threat are the relative price performance of substitutes, the switching costs between competing substitute products, and the ability and propensity for buyers to substitute products (Porter, 1985:6).

**Buyers’ bargaining power** influences the prices that organisations can charge for their products, and the level of cost and investment in the industry. In marketing channels where buyers have strong bargaining power because of access to consumers and a large market share, demands may be made for higher customer service levels and value added services or adherence to buyer polices to be provided, which increases the costs of servicing those customers (Porter, 1985:5).

The determinants of buyer power are divided into two broad groups, namely bargaining advantage and price sensitivity. The bargaining advantage that buyers will have is determined by buyer concentration vs. concentration of supplier organisations in an industry, buyer purchasing volume, buyer switching costs, buyers’ knowledge, and access to information about the industry, ability to pursue backward integration, and the existence of substitute products. The determinants of price sensitivity are price of products relative to the total purchasing volume of the buyers, degree of product differences, brand identity, impact of price on product quality and performance, buyer profits, and decision makers’ incentives (Porter, 1985:6).
The bargaining power of suppliers will affect the cost and availability of goods, raw materials, and other inputs utilised by the organisations in an industry (Porter, 1985:5). The determinants of supplier power are: the degree of differentiation of inputs, switching costs of suppliers and organisations in the industry, the presence of substitute inputs, supplier concentration, the importance of purchase volume to the supplier, cost relative to the total cost of purchases in the industry, impact of inputs on cost or differentiation, and the threat of forward integration relative to the threat of backward integration by organisations in the industry (Porter, 1985:6).

The intensity of rivalry among existing industry participants influences the prices that can be charged for products and the costs required to compete in areas such as manufacturing, the level of customer service provided through distribution and logistics activities, product development and commercialisation, advertising, and sales activities (Porter, 1985:5). The determinants of the intensity of rivalry in an industry are as follows: industry growth, fixed costs, value added, intermittent overcapacity, product differences, brand identity, switching costs, concentration of industry participants and balance in the rank and role of organisations, informational complexity, diversity of competitors, corporate stakes, and exit barriers (Porter, 1985:6).

The combined strength of these competitive forces determines the ability of an organisation in an industry to earn rates of return on investment that are above the cost of capital. The nature and strength of the competitive forces differ from one industry to the next, and can change over time as the industry evolves, with the result that the inherent profitability of an industry may also change over time. Industry profitability is not a function of product characteristics or level of inherent technology, but rather the influence that the competitive forces have on prices, cost, and investment required by organisations in the industry, i.e. the elements of return on investment (Porter, 1985:4).

Supply and demand also have an impact on profitability and return on investment. However, the industry structure and competitive forces influence the long-term profitability of the industry, and determine the extent of profitability in favourable economic periods and the degree of price elasticity and losses in industry troughs,
whereas supply and demand have a short-term effect on profitability through temporary adjustments regarding long-term established industry conditions (Porter, 1985:10).

The structure of industries determines the economic and competitive conditions that organisations will face. Whilst it is important for organisations, as part of their competitive strategy, to decide which industries to participate in and to understand the nature of the competitive forces, the industry structure is not a rigid set of conditions that the organisation cannot influence. Organisations can influence the five competitive forces, and fundamentally change the attractiveness of the industry in their favour, by altering the industry structure and profitability of the industry through their competitive strategy (Porter, 1985:7).

An analysis of the competitive conditions prevalent in the South African confectionery industry is presented in Chapter 4, based on the Five Forces Model.

2.4.1.2 Generic Competitive Strategies

The second aspect of competitive strategy is an organisation’s relative position within its industry. The position of the organisation, relative to its competitors, will determine whether its profitability is above or below the industry average. An organisation that positions itself optimally within an industry can earn high rates of return, even if the industry structure is unfavourable and average profitability is low (Porter, 1985:11).

The basis of an organisation achieving above-average performance in the long-term is sustainable competitive advantage. Although an organisation may have a number of different strengths and weaknesses in different areas relative to its competitors, there are two basic types of competitive advantage an organisation can establish: low cost and differentiation. The significance of any strength or weakness that an organisation possesses is ultimately a function of its impact on relative cost or differentiation. Cost advantage and differentiation in turn arise from the nature of competition within an industry and industry structure, and result from an organisation’s ability to cope better with the five competitive forces than its rivals are able to (Porter, 1985:11).
The two types of competitive advantage combined with the scope of activities with which an organisation seeks to achieve them, creates the basis for three generic strategies for achieving above-average performance in an industry: cost leadership, differentiation, and focus (Porter, 1998:35). The cost leadership and differentiation strategies aim to achieve a competitive advantage for the organisations across a wide range of industry segments, whereas the focus strategy aims at achieving a cost advantage or differentiation within a narrow segment. The specific actions required to implement each generic strategy and the feasibility of different strategies vary, depending on the nature and structure of the industry (Porter, 1985:11).

The notion underlying the concept of generic strategies is that competitive advantage is the central consideration in the development of any strategy, and achieving a competitive advantage requires an organisation to make a decision regarding the type of competitive advantage it wishes to achieve, and the scope within which it will attain it. An attempt to follow different strategies simultaneously may lead to strategic mediocrity and below-average performance because the organisation is unable to focus its activities and positioning towards a coherent strategy aimed at achieving a specific competitive advantage (Porter, 1985:12).

2.4.1.3 The Value Chain and Competitive Advantage

Competitive advantage is developed by the performance of many discrete activities that take place in an organisation in designing, producing, marketing, delivering, and supporting its products. Each of these activities, individually and severally, contributes to the organisation’s relative cost position in the industry and creates the basis for differentiation. The value chain is a tool that provides a systematic way of analysing the sources of competitive advantage by disaggregating an organisation into its strategically relevant activities, in order to understand the behaviour of costs and the existing and potential sources of differentiation. An organisation gains a competitive advantage by performing these strategically important activities at a lower cost or better than its competitors (Porter, 1985:33).

An organisation’s value chain forms part of a larger value system in the supply chain, where suppliers’ value chains, the organisation’s value chain, customer value chains
and buyers’ value chains are combined. Each individual organisation’s value chain has an impact on downstream value chains in the supply chain, as the final product that is delivered to a buyer serves as an input into the buyer’s value chain, which affects the buying organisation’s performance through the function of the cost of the product or its inherent quality or features. Each organisation in the supply chain has a role to play in adding value to a product through its value chain. Thus, the competitiveness of individual organisations and the supply chain as a whole is dependent on the manner in which organisations organise and conduct the activities in their value chains, understanding how the organisation’s value chain fits into the overall value system in the supply chain, and how well organisations understand the role that their product plays in their customers’ value chain (Porter, 1985:34).

The manner in which an organisation organises its value chain and the way it performs its activities is a reflection of its history, its corporate strategy, its approach to implementing its strategy, and the underlying economics of the activities themselves. The relevant level for constructing a value chain is an organisation’s activities either with an organisation-wide scope, or at the business unit level, if the business units of the organisation operate in different industries. An organisation’s value chain in an industry may vary for different products in its product line, different categories of buyers, geographical areas, or distribution channels (Porter, 1985:36).

In competitive terms, value represents the amount buyers are willing to pay for the utility that the total product offering provides. Value is measured by the total revenue generated by the organisation, which is a reflection of the price that the organisation’s product commands in the marketplace, and the demand for the product, which is measured by the number of units sold. An organisation is profitable if the value it creates exceeds the costs incurred in the creation of its products (Porter, 1985:38).

When viewed as a whole, the value chain displays the total value added to a product, and consists of value activities and margin. Value activities are the physically and technologically distinct activities that an organisation performs that represent the process through which a product that holds value for its customers is created. Margin
is the difference between value created and the total cost of performing the value activities (Porter, 1985:38).

Value chain activities can be divided into two broad categories: primary activities and support activities (see Figure 2.2).

Figure 2.2 The Generic Value Chain
Source: Porter (1985:37)

Primary activities are directly involved in the physical creation of the product and its sale and delivery to the buyer, and the provision of after-sale assistance. Support activities support the performance of the primary activities and each other by providing purchased inputs, technology, human resources, and various organisation-wide functions. The activities of any organisation can be divided into the five primary generic categories, along with the generic support categories (Porter, 1985:38).

The five generic categories of primary activities comprising the value chain are inbound logistics, operations, outbound logistics, marketing and sales, and services. Each category is divisible into a number of distinct activities that depend on the particular industry and the organisation's strategy (Porter, 1985:39).

- Inbound logistics: includes activities associated with receiving, storing, and making inputs to the production process of a product available when and
where they are required, through activities such as materials handling, warehousing, inventory control, and the coordination of inbound vehicle traffic.

- **Operations:** encompass the activities associated with transforming inputs into the final product, such as machining, packaging, assembly, equipment maintenance, testing, printing, and facility operations.

- **Outbound logistics:** include the activities associated with collecting and physically distributing the product to buyers, such as finished goods warehousing, the operation of distribution centres (DCs), materials handling, delivery vehicle operation, order processing, and vehicle scheduling.

- **Marketing and sales:** include activities associated with providing the means by which buyers can purchase the product and generating demand for the product, such as advertising, promotion, sales force, quoting, channel selection, channel relationships, and pricing.

- **Service:** the activities associated with providing service to enhance or maintain the value of the product, such as installation, repair, training, parts supply, and product adjustment.

Each of these categories may be more or less important, depending on the industry and whether the organisation’s product is a service or physical product. However, in any organisation, all the categories of the primary activities will be present to some extent, and will play a role in creating competitive advantage (Porter, 1985:40).

Support activities that are present in every organisation’s value chain that are required for competing in any industry are procurement, technology development, human resource management, and company infrastructure. Each of the support activities can be divided into distinct value activities that are specific to each industry in areas such as technology development and procurement, depending on the relative importance of the requirements that are supported by the respective support activities, such as the importance of technical innovation, the role of the supplier base.
in supporting the primary value adding activities of the organisation, and so forth (Porter, 1985:40).

- Procurement: procurement refers to the function of purchasing and acquiring inputs that are used in an organisation’s value chain. Purchased inputs include raw materials, components, and maintenance, repair and operations (MRO) supplies, as well as assets such as equipment, machinery, transportation vehicles, buildings, and services such as accounting, auditing and consulting services. The procurement function has a significant effect on the organisation’s cost and differentiation position, as a result of the high proportion that purchased materials and services comprise of an organisation’s total costs, and the control over the certification of suppliers for the purposes of quality control. The procurement function also plays an important role in the supply chain, as it serves as the organisation’s interface with its suppliers (Porter, 1985:41).

- Technology Development: every value activity embodies some form of technology, being specific expertise, processes and procedures, or technology that is inherent to equipment and vehicles being used. Technology development consists of a range of activities that can be grouped into efforts to improve either the organisation’s product or its specific processes. Technology development that is related to a product increases the value adding potential of the entire value chain, while technology development within specific activities will increase the value adding potential of that area. Technology development is important for the establishment of competitive advantage, but it is a critical activity in industries where differentiation and cost-saving is achieved through the employment of superior technology or processes (Porter, 1985:42).

- Human resource management: human resource management consists of the activities involved with recruiting, hiring, training, development, and compensation of the personnel employed by the organisation. Human resource management affects value creation of both specific activities and of the entire value chain, given its role in recruiting, developing, and placing
employees within the various functions of the organisation. Human resource management affects competitive advantage through its role in determining the skills and motivation of employees, and the cost of hiring and training. In some industries, particularly professional services, it is a key activity in the development of competitive advantage (Porter, 1985:43).

- **Firm infrastructure**: firm or company infrastructure consists of a number of activities including general management, planning, finance, accounting, legal, government affairs, and quality management. Company infrastructure usually supports the entire value chain and not any specific activities, and can be an important source of competitive advantage in some industries where, for example, interaction with government regulators is a critical activity in maintaining a favourable market environment (Porter, 1985:43).

Although the value adding activities form the components of how an organisation develops competitive advantage by adding superior value to its products or services than its competitors, the value chain is not a group of independent activities that are managed in isolation, but rather a system of interdependent activities that must be designed and managed holistically. Value activities are related through a series of linkages within the value chain that represent relationships between the manner in which one activity is performed, and its effect on the cost or performance of another activity. Linkages can achieve competitive advantage in two ways, namely optimisation and coordination. The optimisation of one activity can improve the performance of another activity, for example, improving the quality of products through the optimisation of operations, reducing the costs incurred in after-sales service. Coordinating different activities enables the overall performance of the value chain to be increased, as may be the case in achieving on time delivery of products that requires the coordination of operations, outbound logistics, and service (Porter, 1985:48).
2.4.2 Relational and Collaboration-Based Sources of Competitive Advantage

An increasing body of literature (Dyer & Singh, 1998; Gulati et al., 2000; Ireland et al., 2002; Jarillo, 1998) emphasises the importance of collaborative strategies, given the fact that organisations form part of a larger network of relationships that, to a large extent, determine the boundaries within which their activities and competitive strategy will be carried out. This view moves away from the dominant strategy school of thought, which tends to be introspective and focuses on the inherent resources or positioning of an individual organisation, and highlights the role of a network of organisations as representing an important source of competitive advantage (Ritala & Ellonen, 2010:368).

Ritala and Ellonen (2010:376) conducted a study of the different strategy theories and examined how the different strategies complement each other with respect to understanding the competitive advantage of a single organisation that utilises inter-organisational collaboration. They examined the three main paradigms in strategic management, namely industrial organisation economics, resource based theories of the organisation, and the relational view, and found that each of the paradigms play a role in the establishment of competitive advantage in an environment that is dependent on inter-organisational cooperation. They used the industry, organisation, and relationship determinants of competitive advantage as levels of analysis, and identified the key determinants of competitive advantage at each level.

At the industry level, the relative positions of the organisations in the market, market power and the potential changes in it, determine the effect on inter-organisational cooperation in an industry setting. The organisation level indicates how an organisation can utilise both internal and external valuable, rare, inimitable, and non-substitutable resources and capabilities in order to gain competitive advantage. Organisations further use inter-organisational cooperation to access and acquire resources and capabilities from other organisations, in order to complement their own resources, thus forming a pool of resources that creates more value for an organisation, than if the resources where used separately. However, organisations also need to have resources and capabilities of their own that define their competitive advantage, even when inter-organisational cooperation is widely utilised. The
relationship level is needed when the focus is on resources and capabilities that are distinctive of a specific relationship and cannot be explained in terms of industry or organisation level attributes, and are thus situated at the relationship level (Ritala & Ellonen, 2010:376). Given a unique relationship setting with certain organisations, relationship performance has the potential to affect the competitive advantage of a single organisation, particularly as each relationship between individual organisations is itself unique, and is difficult to imitate with respect to all other relationships between all other organisations (Ritala & Ellonen, 2010:377).

Organisations can therefore develop competitive advantage through actions in three complementary areas: relative positions in industry and market power, organisation level resources and capabilities, and resources and capabilities distinctive to a specific relationship (Ritala & Ellonen, 2010:376). This holistic approach to developing competitive advantage is further reinforced by what Ma (1999) refers to as the constellation of competitive advantage, comprising of dominant advantages and supporting advantages. The dominant advantages are the centrepiece of the constellation, while the supporting advantages make the constellation more complete and effective. The broad nature of supply chain management and its management and influence over logistics, marketing, finance, operations, and collaboration, indicates that supply chain management has a major role to play in the development of competitive advantage.

2.4.3 Supply Chain Management and its Role in Creating Competitive Advantage

There is a growing body of evidence in the literature regarding the impact that supply chain management has on product and service differentiation, cost performance, dynamic capabilities, and inter-organisational relationships of the organisations and supply chains in which it is actively practiced.

The concept of supply chain management takes the value chain concept a step further and applies the methodology to the organisation’s supply chain. Whereas logistics management is primarily concerned with the optimisation and coordination of
the internal activities such as inbound logistics, operations, and outbound logistics, and marketing with promotional, and sales and service, supply chain management aims to achieve coordination and optimisation of the value adding capability of the entire supply chain. In order to develop a competitive advantage, as described in the value chain approach across the supply chain, it is necessary to coordinate and optimise value chains within each organisation and individual activities across organisational boundaries, in order to maximise the value added in the supply chain overall.

Although an organisation may organise and manage its value chain activities for the development of either cost leadership or differentiation, there is a theoretical limit to the extent to which it can develop either competitive strategy, given the impact of supply chain performance on organisational performance. In order to maximise value add and establish a competitive advantage, an organisation must form part of a supply chain, with a supply chain management strategy designed to create superior performance (Green et al., 2008:324).

The results of a study conducted by Tracey et al. (2005) indicate that supply chain management capabilities are an important source of competitive advantage, and an important determinant of business performance. The study further found both direct and indirect effects of supply chain spanning activities and processes on perceived product value, customer loyalty, market performance, and financial performance, and ultimately that supply chain management capabilities should be regarded as a proprietary resource that aids the organisation in obtaining competitive advantage.

Fawcett et al. (2008) identified the benefits of effective supply chain management as being: the marketing of unique products and services, faster research and development (R&D) cycle times, superior quality, cost competitiveness, shorter order cycles, flexible customer response, enhanced delivery performance, better asset management, increased cash-to-cash cycle velocity, and superior channel relationships.

Green et al. (2008) found that logistics performance is positively impacted by supply chain management strategy, and that both logistics performance and supply chain
management strategy positively affect marketing performance, which in turn influences financial performance.

From the literature (Bagchi et al., 2005; Kim, 2006; Power, 2005; Zailani & Rajagopal 2005; Wood, 1997) it is evident that supply chain integration, while being an important part of the optimal functioning of the supply chain, also has the potential to increase the performance and competitive capability of the operations and activities of those organisations that integrate with other members of their supply chain (Langley et al., 2009).

Kim (2006) identified that supply chain integration has an influence on supply chain practice and competitive capability, and that for large organisations; supply chain integration may play an infrastructural role in enabling the direct effects of supply chain management practice and competitive capability on organisational performance. However, these effects can only be realised if the connections and inter-relationships among the different entities in the supply chain are recognised, and alignment is achieved between the design and the execution of the organisation’s competitive strategy (Kim, 2006:247).

It was also identified that even if an organisation has excellent supply chain management practices and competitive capabilities, close strategic alignment and coordination with its supply chain partners are indispensable for linking those practices and competitive capabilities to organisational performance improvement (Kim, 2006:247).

A study of European organisations by Bagchi et al., (2005) indicated that performance improvements were realised in the following areas after supply chain integration was achieved in the supply chain: order fulfilment lead-time, order fill-rate, production flexibility, total logistics cost, returns processing, rate of returns, on-time delivery, and inventory turn ratio. The variables that enabled the performance improvements to be realised in these areas were supply chain design, length of supplier relationship, length of customer relationship, collaboration with suppliers in sales administration, R&D, inventory control, procurement and software
implementation, and collaboration with customers in production (Bagchi et al., 2005:287).

Zailani and Rajagopal (2005) conducted a study of supply chain integration and performance in large United States and East Asian based organisations. They found that supply chain integration plays a “significant role in the overall success of a business”, and organisations that undertook integration efforts were able to beat revenue and profitability projections in terms of market share growth, sales growth, and the creation of competitive advantage. There was also evidence that the higher the level of integration with customers and suppliers in the supply chain the greater the potential benefits, and that organisations that integrated with a greater number of customers and suppliers saw the largest rates of performance improvement (Zailani & Rajagopal, 2005:389).

The areas in which performance improvement was measured were productivity growth, materials and finished goods quality, delivery speed, production lead-time and delivery reliability, the standard of the customer relationship, and flexibility in customer service, order processing, location, and delivery time (Zailani & Rajagopal, 2005:384).

Internal and external integration in the supply chain were further identified by Lin and Chen (2008) as important drivers for long-term organisational innovation capability, and product-based competitive advantage through shared knowledge of internal capabilities, customers, and suppliers.

2.5 Conclusion

In a global economy where the effects of globalisation have changed the nature of competition and increased the level of competition in local, regional and international markets (Friedman, 2006), it has become a necessity for organisations to increase their competitive capability through the provision of superior products, shorter product development and commercialisation cycles, superior logistics performance, and lowest total product and system-wide cost, and the maximisation of value added.
The level at which competition takes place is migrating from individual organisations competing against one another, to the supply chain level where groups of organisations compete. The nature of the interaction among the organisations in the supply chain will determine the level of their competitiveness, and the extent to which they can create value and compete. The key mechanisms that underpin the extent to which supply chain management will enable supply chains to be competitive, are integration and collaboration. The establishment of a collaborative mind-set and a collaborative environment among organisations in the supply chain is the first step towards the management of the supply chain, and is a prerequisite for the integration of functional departments, business units, and organisations. Once a collaborative environment has been established, formal mechanisms can be established, which will enable the integration of functional departments and organisations to take place. These integration mechanisms and formal collaborative arrangements form the basis of supply chain management, and are the mechanisms through which information is shared and visibility of goods flows, inventory and planning, joint decision-making, risk and reward sharing, inter-organisational learning, the management of supply and demand, capacity planning, and strategic alignment between organisations take place.

In a globalised economic environment where organisations have virtually equal access to labour, capital, technology, and infrastructure, the competitive landscape has migrated from being based on the ownership and utilisation of resources, to the development of competitiveness based on the ability of organisations to develop dynamic capabilities in the design and execution of supply chain functions, and the extent to which organisational learning can be leveraged within organisations and among organisations in the supply chain.

Given its broad nature and its control and influence over the various areas and activities in which competitive advantage can be developed, supply chain management represents an important element of the strategic management of an organisation. As such, supply chain management is a strategic function that allows an organisation to develop a dominant position and higher than average profits in the industry in which it operates through the establishment of competitive advantage.
Supply chain management is a critical enabler of the competitive strategy that an organisation has chosen to pursue, given its role in coordinating the value chains of the various organisations in the supply chain, and its role in the establishment of relational and learning advantages among organisations. Through the management of supply and demand, goods, services, and financial flows, the sharing of information and the creation of visibility in the supply chain, supply chain management represents the means through which the decisions made in the formation of the competitive strategy of an organisation are realised.

Therefore, supply chain management is a critical source of competitive advantage, given its influence over internal organisational functions and inter-organisational processes functions, relational advantages created through integration and collaboration in the supply chain, the enablement of competitive strategy and positioning within industries, and ultimately its influence over overall business and supply chain performance.

The implementation of supply chain management in practice, besides requiring an intrinsic understanding of the role of collaboration and integration in supply chain management, and the role of supply chain management in enabling organisations to compete with in the global economy, and understanding the philosophy of supply chain management, requires a sound framework that details how supply chain management can be implemented in practice. The discussion of supply chain management frameworks is the topic of Chapter 3.
CHAPTER 3

AN ANALYSIS AND EVALUATION OF THE PROCESS ORIENTED SUPPLY CHAIN MANAGEMENT FRAMEWORKS

Chapter 2 provided the theoretical background and justification for the implementation of supply chain management as a means of developing a competitive advantage for an organisation. The objective of Chapter 3 is to discuss the supply chain management frameworks that provide a structure and methodology for capabilities which enable an organisation to establish competitive advantage. The chapter will cover the background to business process management, the process approach to supply chain management, and a discussion and comparison of the relevant supply chain management frameworks.

3.1 Business Process Management

The concept of organising the activities of an organisation as business processes was introduced in the late 1980s and became popular in the early 1990s (Lambert et al., 2005:26). A business process is defined as a structured set of activities with specified business outcomes (Lambert, 2006a:5). Trkman et al. (2007:117) further define a business process as a set of one or more linked procedures or activities that collectively realise a business objective for a customer through a combination of people, methods and tools, by transforming a set of inputs into a specific set of outputs, which can be goods or services. The motivation for implementing business processes within and across members of the supply chain is to make transactions and the associated informational, financial, and goods flows, more efficient and effective, and to structure inter-organisational relationships in the supply chain (Lambert et al., 2005:26).

The transactional view of business process management is based on the development and deployment of information technology, which has greatly increased the efficiency of completing transactions among organisations, and has made
information pertaining to these transactions widely available within organisations (Lambert et al., 2005:26). This transactional view of business processes refers to workflows within and amongst organisations, and is based on Taylor’s principles of scientific management that aim to drive process efficiency by utilising engineering principles from manufacturing organisations. Combining business process thinking with information and communication technology allows for certain benefits to be realised, such as process cost reduction, time reduction, output quality, and the empowerment of personnel, by formalising and structuring organisational processes and enabling greater control over the outcomes which the organisation aims to achieve through its activities. The focus is not on automating the established business processes, but on redesigning business processes by standardising transactions and the transfer of information, and changing how business processes operate in order to improve outcomes for customers by making transactions more efficient and accurate (Lambert et al., 2005:26).

The second view of business process management focuses on managing processes and interactions among organisations in the supply chain, and is based on the evolving view from the field of marketing, and in particular relationship marketing, that has the goal of establishing long term profitable relationships with customers, so that the objectives of all the organisations involved can be met. Therefore, the focus of developing and maintaining relationships in the supply chain should be beyond the fulfilment of one transaction or a group of transactions (Lambert et al., 2005:26). Obtaining repeat business from the same customer and conducting multiple transactions over an extended period is more cost efficient than obtaining a new customer (Lambert, 2006b:6), and increasing the retention rate of the organisation’s customer base has the effect of increasing the profits generated from an individual customer over the long-term (Reichheld & Teal, 1996:36).

From a supply chain point of view, the concept of the marketing channel is relevant in terms of identifying which organisations should be part of the marketing channel, describing the need for channel coordination, and designing actual marketing channels. While the field of relationship marketing is focused on the downstream customer side of an organisation’s supply chain, the development and maintenance of relationships with key suppliers should also be based on achieving the objectives
of all organisations in the supply chain, in order for suppliers to be profitable, therefore ensuring the sustainability of an organisation’s sources of supply. The motivation for this approach is based on the support required from the organisation’s key suppliers to fulfil the promises made to the organisation’s customers and to meet financial and organisational objectives, which indicates that corporate success is based on relationship management with both customers and suppliers. The management of inter-organisational relationships involves people, organisations, and processes, and defines the core competence of an organisation as its role between suppliers and customers in the value chain. In order to implement business processes within the context of managing relationships both with customers and suppliers, an industry standard or framework that will allow for the definition of common terms and processes is required, enabling organisations to integrate with other organisations in the supply chain (Lambert et al., 2005:26).

### 3.2 The Process Approach to Supply Chain Management

Supply chain management is implemented by integrating major business functions and business processes within and across organisations in the supply chain (Bagchi et al., 2005; Chen et al., 2009; Croxton et al., 2001; Council of Supply Chain Management Professionals, 2010). It includes business processes that cut across organisational boundaries and functional areas such as logistics, marketing, finance, and manufacturing (Lambert et al., 2005:25).

The process paradigm implies focusing on the processes that organisations perform, rather than on individual functions, divisions or the departments. The need for a shift from the traditional 'silo' approach to dividing the activities of the organisation into functional units stems from the fact that despite the changes seen in contemporary economic and social environments, traditional management values and principles still determine how organisations structure and carry out their activities (Trkman et al., 2007:117).

The processes of an organisation and a supply chain can be analysed and understood in terms of the concept of the business process orientation, which is used
to describe an organisation whose culture and approach to organising its activities emphasises processes as opposed to organisational hierarchies, with an emphasis on outcomes and customer satisfaction (Trkman et al., 2007:117). An investigation conducted by McCormack and Johnson (2001) into the relationship between business process orientation and enhanced business performance found that organisations with a business process orientation experienced reduced conflict, and greater levels of functional integration, while improving business performance.

The business process orientation is linked to the process maturity concept, which is a reference model that indicates the stages of development that organisations experience in the extent to which they adopt a process orientation. The supply chain management maturity model, as proposed by Lockamy and McCormack (2004), implies that a process has a lifecycle that is assessed by the extent to which the processes are explicitly defined, managed, measured and controlled. The purpose of the model is to assess the current state of process orientation in an organisation or a supply chain, and to indicate what actions or conditions are required in order to further develop the maturity of the business processes. The model describes the following maturity levels (Lockamy & McCormack, 2004):

- Level 1, Ad hoc: The supply chain and its practices are unstructured and ill-defined. Processes, activities, and organisational structures are not based on horizontal processes, while process performance is unpredictable. Supply chain management related costs are high, customer satisfaction is low, and functional cooperation is low.

- Level 2, Defined: Basic supply chain management processes are defined and documented, but activities and organisational structure remain traditionally functionally orientated. Supply chain management related costs remain high, and customer satisfaction has improved from Level 1, but is still low.

- Level 3, Linked: At this level, a breakthrough in process orientation is experienced as cooperation is established between organisational departments, suppliers, and customers. Supply chain management related
costs begin decreasing, and customer satisfaction begins to show a marked improvement.

- Level 4, Integrated: The organisation, its suppliers and customers cooperate on the process level. Organisational structures are based on supply chain management procedures, supply chain focused performance measures, and collaborative management systems are applied. Advanced supply chain management practices such as collaborative planning, forecasting and replenishment (CPFR) are implemented. Supply chain costs are dramatically reduced.

- Level 5, Extended: Competition and the development of competitive advantage are based on activities and processes that are jointly managed across the supply chain. Collaboration between organisations is on the highest level, multi-organisational and multi-functional supply chain teams are formed with common processes, goals, and broad authority.

Lockamy and McCormack (2004) found a relationship between supply chain management process performance and the maturity of supply chain processes. Their research further indicates that the performance of process measures, such as cycle times and inventory levels, were also related to the maturity of supply chain processes.

While the benefits of determining and developing the maturity of supply chain processes have been documented, a number of factors will affect the ability of an organisation to develop its processes, and to realise the increases in supply chain performance as a result of adopting a business process orientation. The main tenet of contingency theory is that there is no one 'best' way to manage an organisation or supply chain, but rather that the prevailing environmental and industry circumstances will determine how an organisation operates (Kotzab & Otto, 2004:343):

- the market in which the organisation is operating;
- technology;
• the size of the organisation relative to its main suppliers, customers, and competitors;
• resources;
• the expectations of the stakeholders of the organisation; and
• the history of the organisation.

The contingency factors that are specifically related to managing inter-organisational processes and the implementation of supply chain management are as follows (Kotzab & Otto, 2004:344):

• Power and size of the company: achieving collaborative behaviour is central to supply chain management as it forms the basis of integration in the supply chain and the joint management of goods flows and information sharing between organisations. Power is a precondition for inducing any increases in cooperation from channel partners, as it is unlikely that a relatively small organisation, with little marketing channel power, will be effective in implementing a supply chain management program.

• Relevance of speed and perishability of the product: with the shortening of product life-cycles and the focus on reducing investment in inventory holdings, the order cycle lead-time has become a key measure within the supply chain environment, particularly for technology, fashion, and perishable goods supply chains.

• Relative importance of logistics costs: supply chain management has a particular focus on linkages, as is evidenced by the central role of integration. The relative influence of linkage management on the profitability of an organisation, or the margin it can earn from its value chain activities, differs between industries. Therefore, supply chain management will be viewed as important in those industries with a relatively high percentage of linkage or logistics costs, such as retailing.

• Length of the chain: if the value chain for a particular product consists of only one or a few activities, as would be the case in consulting or engineering
services, supply chain management would be less relevant than value chains that are long and include a large number of participants.

- Tightness of coupling between the echelons: supply chain management principles can be used to design and maintain a supply chain. However, these principles will not be useful if the nodes in the supply chain are relatively fixed or permanent. This is particularly relevant in industries where there is little opportunity for rearranging the relationships between nodes and different tiers in the supply chain, as a result of long-term fixed investment in facilities or sources of supply based on the location of primary raw materials, which do not allow changes in the relationship to be made beyond the initial configuring of the system. On the other hand, in supply chains where the sources of supply, manufacturing locations, and the location of market participants and customers are numerous and wide spread, dynamic and ever-changing, the coupling between the echelons will be loose, and the utility derived from the application of supply chain management principles will be high.

- Proximity to final customer: the position of the focal organisation in the supply chain will determine the extent to which supply chain management principles are adopted, given the increase in demands placed on the supply chain as the product reaches the finished goods stage and its proximity to final distributors and customers.

- Degree of environmental uncertainty: inter-organisational integration and collaboration can be seen as mechanisms to reduce uncertainty, through the sharing of information, which allows for more accurate forecasts and knowledge of the plans of supply chain partners including key customers and suppliers. Therefore, in a highly uncertain environment, supply chain management acts as a mechanism for reducing uncertainty, and is desirable for members of the supply chain as it can reduce uncertainty of supply, goods demand volume, diversity, and volatility.

- Probability of creating a strategic group: implementing and putting supply chain management principles into practice requires a high degree of
collaboration between supply chain participants, which requires a common strategic orientation and a strategic grouping of organisations. Johnson (1999) described a set of criteria to evaluate the possibility of creating a strategic grouping in the supply chain, these criteria being a mutual dependence between the partners, the age of the relationship between the partners and expectations of continuity of the relationship, the flexibility of the partners, and the uncertainty of the environment.

In order for organisations to implement supply chain management, a framework is required that provides a common understanding of the key business processes that are to form the basis of the integration of functions, goods and information flows, and the management of business processes in the supply chain.

### 3.3 The Supply Chain Management Frameworks

Lambert et al. (2005) conducted an evaluation of process-orientated supply chain management frameworks, and identified five supply chain management frameworks that recognise the need to implement business processes, each with distinctive characteristics and objectives. The authors of four of the five supply chain management frameworks suggested the implementation of standard cross-functional business processes. Only two of the five frameworks identified by Lambert et al. (2005), namely the Global Supply Chain Forum (GSCF) and the Supply-Chain Operations Reference (SCOR) model frameworks, included business processes that could be used by the management of an organisation to achieve cross-functional integration, and were described in sufficient detail in the literature to allow for meaningful comparisons to be made. The GSCF and SCOR frameworks are based on the implementation of clearly defined business processes that are designed to integrate customers and suppliers, and integrate activities across internal functions. Additionally, both GSCF and SCOR were the only frameworks that are supported by major corporations (Lambert et al., 2005:30).

The primary objective of the study is to apply an international supply chain management best practice framework, in order to identify and critically analyse the
state of supply chain management practices in a leading manufacturer in the South African confectionery industry. In order for this objective to be achieved, a framework with a detailed description of processes and practices is required. The previous sections in this chapter have described the role and importance of business processes in supply chain management. As only the GSCF and SCOR frameworks were identified by Lambert et al. (2005) as describing processes in detail, they will be analysed further in order to determine which framework is the most suitable for the purpose of analysing the supply chain management practices of the respondent organisation in this study.

3.3.1 Supply Chain Operations Reference Model (SCOR)

The SCOR model was developed by the SCC as a pan-industry standard for supply chain monitoring that provides a framework allowing business processes, metrics, best practices, and technology to be integrated (Supply Chain Council, 2011a). The SCC was founded in 1996 by the business consultancy agency Pittigilio, Rabin, Todd and McGarth (PRTM) and Advanced Manufacturing Research (AMR), and originally included 69 voluntary member organisations. The SCOR model’s diffusion was supported by the gathering of inputs from the manufacturers and implementers of system technologies, researchers, and governmental organisations. All of these groups, including the member organisations of the SCC, participate in the SCC’s activities and in the development and revision of the model. The SCOR model represents the SCC’s consensus with respect to the management of supply chains at any one time, as represented by the latest revision of the SCOR framework (Poluha, 2007:51).

The SCOR model is defined as a standardised process model of a supply chain that provides a standardised description of the processes found in a supply chain, which enables the analysis, comparison, and evaluation of supply chains between different companies and different industries. According to the SCC, the SCOR model was published to describe the supply chain at multiple levels of detail, identify best practices, and define associated key performance indicators (KPIs) for each process,
and to provide a basis for consensus on terminology, processes, and expectations among trading partners (Poluha, 2007:49).

The SCOR model is described as having three primary applications: to evaluate and compare supply chains’ performance potential, to analyse and optimise integrated supply chains, and to determine suitable places for the assignment of software functionality within the supply chain (Poluha, 2007:49). The logic behind the SCOR model is premised on the supply chain and logistics network being described, using five fundamental processes: plan, source, make, deliver, and return. Within the four main execution processes (source, make, deliver, return) materials or products are used or transported, and by joining these processes into a sequential chain it is possible to define customer-supplier relationships, and factor in the process of planning. The combination of all the main processes represents a model of the production and logistics network. The description of the five fundamental processes forms a substantial component of the SCOR model, along with the definition of metrics for the evaluation of processes’ performance within the supply chain, which can be used as a basis for benchmarking with other companies, or other supply chains within the same industry. For the main processes; the SCC compiled the best known methods for the achievement of optimal performance in the supply chain, called the best practices, and integrated them into the model. The model also includes software system requirements, which enable the optimisation of the functioning of the five main processes, and the implementation of the best practices defined in the framework (Poluha, 2007:50).

The SCOR framework identifies the processes a supply chain requires to support the objective of fulfilling customer orders. Within the framework, a process is defined as a unique activity performed to achieve predefined outcomes. SCOR processes are organised by aggregation and decomposition relationships, and contain three levels of process detail that enable the standardisation of the description of supply chain architecture (level 1 and 2 processes), and the implementation of the architecture (level 3 processes). SCOR provides benchmarks to the extent where process descriptions are applicable across a range of industries. Further detail on process descriptions is industry and organisation specific (level 4 and below). The following
sections are taken from a document published by the SCC providing an overview of the SCOR framework (Supply Chain Council, 2011b).

SCOR is based on five Level 1 management processes (Supply Chain Council, 2011b:12):

- **Plan processes** describe the planning activities associated with operating a supply chain, which includes gathering customer requirements, determining the availability and characteristics of resources, and ensuring that adequate resources are available to provide the desired level of capability in the supply chain. Actions required are then identified to correct any resource gaps.

- **Source processes** describe the ordering, scheduling and receipt of goods and services, which includes issuing purchase orders, scheduling deliveries to facilities, receiving of goods and materials, checking of goods against orders made, storage of goods and materials, and accepting and processing supplier invoices.

- **Make processes** describe the activities associated with the conversion of materials into finished goods through a value adding process, or the creation of content for services. The focus on is on the conversion of materials, as opposed to production or manufacturing, as ‘make’ in the framework represents all types of material conversions; assembly, chemical processing, maintenance, repair, overhaul, recycling, refurbishment, remanufacturing, and other material conversion processes.

- **Deliver processes** describe the activities associated with the creation, maintenance, and fulfilment of customer orders, and include receipt of the order, validation of the order and the ability to fulfil the order, and the creation of customer orders, scheduling order delivery, picking of goods, packing and shipment, and invoicing the customer.

- **Return processes** describe the activities associated with the reverse flow of goods back from the customer downstream in the supply chain and include the
identification for the need for a return, decisions regarding how returned products will be processed or disposed of, the scheduling of the return, and the shipment and receipt of the returned goods.

Each Level 2 process can be further described by type: planning (a process that aligns expected resources to meet expected demand requirements), execution (a process triggered by actual demand that changes the state of the material goods), and enable (a process that prepares, maintains, or manages information or relationships on which planning and execution processes rely) (Supply Chain Council, 2011b:13).

The best practices contained in the model are defined as a specific way of configuring a process or set of processes, which may result from the automation of a process, a technology applied in the process, special skills being applied in the process, a unique sequence for performing the process, or a unique method for distributing and connecting processes among organisations. The best practices part of the framework contains management practices, software solutions, and definitions associated with each process, which can contribute to improvements in performance in supply chain optimisation, supply chain risk management, and environmentally responsible supply chain management (GreenSCOR). The supply chain practice categories are described in terms of the level of returns that each respective category are expected to produce and the inherent risk associated with utilising the practice, and are divided into four categories or types of practices (Supply Chain Council, 2011b:17);

- Leading or Emerging Practices: practices that introduce a new technology, knowledge, or different ways of organising processes, and that may lead to large changes in performance within an industry. Leading practices may result in large increases in performance by representing dramatic changes in how practices are carried out in an industry. However, it may not be possible for these practices to be widely implemented, given the proprietary nature of the technology or knowledge that may be required, which prevents wider adoption of the practice by organisations within an industry. These leading practices would generally not have been proven in a wide variety of environments and
industries. Leading practices provide moderate to high returns with high associated risk.

- **Best Practices**: current, structured, and repeatable practices that have a proven and positive impact on supply chain performance. These practices are neither emerging nor outmoded, feature clearly stated goals, scope, process and procedure, have been demonstrated in a work environment and are linked to key metrics, and have been proven in multiple organisations and industries. Best practices are described as providing moderate to high returns with low to moderate risk.

- **Common Practices**: represent how a wide range of organisations have historically carried out their practices, either by default or for historical reasons, or through organisational inertia, and do not provide a significant efficiency or competitive advantage over other practices. Common practices provide negative to low returns, with low to moderate risk.

- **Poor Practices**: represent ways of conducting organisational and supply chain activities that have proven to result in poor supply chain performance, as indicated by key metrics in the supply chain. Poor practices provide negative to low returns, with a high associated risk.

The metrics section of the SCOR framework consists of two types of elements: performance attributes and metrics. The performance attributes are a grouping of metrics used to set a strategic direction. A metric is a standard of measurement of the performance of the process. SCOR recognises three levels of predefined metrics (Supply Chain Council, 2010:2.i.1).

- **Level 1 metrics**: diagnostics for the overall performance of the supply chain, also known as strategic metrics and KPIs. Benchmarking level 1 metrics enables the establishment of targets to support strategic directions.

- **Level 2 metrics**: serve as diagnostics for Level 2 metrics, assisting in identifying the root cause of a performance gap for a level 1 metric.
- Level 3 metrics: serve as diagnostics for level 2 metrics.

The SCOR framework includes five performance attributes (Supply Chain Council, 2010:2.i.1).

- Reliability: addresses the ability of an organisation or a supply chain to perform tasks as expected. Reliability focuses on the predictability of the outcome of a process. Typical metrics for the reliability metric include on-time delivery, correct quantity, and correct quality. The SCOR key performance indicator (level 1 metric) is perfect order fulfilment. Reliability is a customer-focused attribute.

- Responsiveness: describes the speed at which tasks are performed. Responsiveness addresses the repeated speed of doing business. Example metrics are cycle time metrics. The SCOR key performance indicator is order fulfilment cycle time. Responsiveness is a customer-focused attribute.

- Agility: describes the ability to respond to external influences, the ability to change. External influences increases or decreases in demand that cannot be forecasted, suppliers or partners going out of business, natural disasters, acts of terrorism, changes in macro-economic conditions, and labour issues. The SCOR KPIs are flexibility and adaptability. Agility is a customer-focused attribute.

- Cost: describes the cost of operating the process. Costs include labour, material, and transportation costs. The SCOR KPIs are cost of goods sold and supply chain management cost, covering all supply chain expenditure. Cost is an internally focused attribute.

- Assets: the asset management efficiency attribute describes the ability to utilise assets efficiently. Asset management strategies include inventory reduction, and in-source versus outsource decisions. Example metrics include inventory days of supply and capacity utilisation. The SCOR KPIs include cash-to-cash cycle time and return on fixed assets. Asset management efficiency is an internally focused attribute.
Also included in SCOR is the SCOR people skills framework, which provides a view of the needs and issues surrounding skills management for supply chain professionals, including technical skills, aptitude, and experience required to manage a supply chain effectively. SCOR’s skills management framework complements process reference, metrics reference, and practice reference components, with an integrated view of supply chain skills in four areas: baseline skills necessary for the overall process area and for the individual process, critical skills that differentiate leaders in a particular process area from those who only perform at a baseline level, performance measures through SCOR metrics that relate to the continuous assessment of job performance in each process area, and the credentialing of supply chain skills, including training or certification programs related to the specific process areas (Supply Chain Council, 2011b:19).

3.3.2 The Global Supply Chain Forum Framework (GSCF)

The GSCF defines supply chain management as “the integration of key business processes from end user through original suppliers that provides products, services and information that add value for customers and other stakeholders” (Lambert et al., 1998:1). Implementation is carried out through three primary elements and key decision areas: the supply chain network structure, the supply chain business processes, and the management components (Lambert et al., 2005:28). The supply chain network structure is comprised of the member organisations to which key processes will be linked. The supply chain management components determine what level of integration and management should be applied for each process link. The decision associated with the supply chain business processes involves which processes should be linked with each of the key supply chain members identified as forming part of the supply chain network structure (Lambert et al., 1998:4).

The GSCF identified eight key processes that constitute the core of supply chain management. They are: customer relationship management, customer service management, demand management, order fulfilment, manufacturing flow management, supplier relationship management, product development, and commercialisation and returns management. Customer relationship management and
supplier relationship management are the critical links in the supply chain to an organisation’s customers and suppliers, with the other six processes being coordinated through them (Lambert et al., 2005:28).

Each of the eight processes are inter-functional and inter-organisational in nature. The processes are divided into a sequence of strategic sub-processes where the details of managing the process are defined, with each sub-process being described as a set of activities. Cross-functional teams are used to define the structure for managing the process on the strategic level (Lambert et al., 2005:28).

The business processes in the GSCF framework cover the span of the supply chain, and cut across organisations and functional silos. Functional silos that are integrated by the business processes include marketing, research and development (R&D), finance, production, purchasing, and logistics. Activities traditionally associated with each of these functions remain within the functional silos, but an entire process cannot be contained within any individual function, and will require the integration of separate functions to be implemented. While all the processes must be included in the implementation of the framework, the relative importance of the different processes and activities within the processes will vary, depending on an organisation’s position in the supply chain (Croxton et al., 2001:14).

The framework contains an assessment tool, which can be used by an organisation’s management to benchmark their practices against the practices found within the framework. It covers all of the supply chain management processes, and is broken down into strategic and operational sub-processes and activities. The following sections are based on the works of Lambert et al., who collectively, have published the findings of deliberations of the GSCF, which ultimately led to the formulation of the GSCF Framework. Lambert is also the director of the GSCF.

3.3.2.1 The Customer Relationship Management Process

The customer relationship management process provides the structure for how the relationships with customers in the supply chain are developed and maintained. There is a strong relationship between profit growth, customer loyalty, customer
satisfaction, and the value of goods delivered to customers, particularly in the business-to-business (B2B) environment. Management responsible for customer relationship management identifies key customers and customer groups to be targeted for relationship building efforts in line with the organisation’s strategic goals. The decision regarding which organisations represent key customers and customer groups to be targeted requires an evaluation of the profitability and potential profitability of individual customers. Performance evaluations are carried out to analyse the levels of customer service provided to customers, as well as to measure the impact of individual customers and customer segments to the organisation’s profitability (Stock & Lambert, 2001:68). It generally accepted practise that the marketing function is responsible for managing relationships with B2B customers. However, for two large organisations to effectively coordinate their operations, all corporate functions must be actively involved in the relationship to align all of the required corporate resources with the potential profit and revenue growth which can be achieved within each commercial relationship (Lambert, 2006b:26). Customer teams comprised of members draw from different functions, then develop product and service agreements (PSAs), which specify the levels of service performance required to meet the needs of key accounts and segments of other customers with similar requirements. These cross-functional teams work with key accounts to improve transactional processes and eliminate demand variability and non-value-adding activities (Croxton et al., 2001:15).

Customer relationship management is "a critical business process as a result of competitive pressures, the need to achieve cost efficiency in order to be a low-cost supplier, a recognition that customers are not equal in terms of their profitability, and the knowledge that customer retention can significantly affect profitability" (Lambert, 2006b:27). Customer relationship management is one of the eight business processes found in the framework, and it interfaces with each of the other seven as it provides the critical linkage with the organisation’s customers in the supply chain. For each supplier in the supply chain, the ultimate measure of success for the customer relationship management process is the positive change in the profitability and sales revenue growth of an individual customer, or segment of customers, for the organisation (Lambert, 2006b:27). For each customer, the most comprehensive measure of success for the supplier relationship process is the effect that a supplier,
or supplier segment, has on the organisation’s profitability and revenue growth. The goal is to increase joint profitability by developing the relationships with customers and suppliers. However, the greatest potential impediment to the achievement of profitability for both the customer and the supplier is the failure of the respective organisations in the supply chain to reach agreement on how to share the benefits and profitability that are achieved through joint process improvement efforts. Ultimately, the overall performance of the supply chain is determined by the combined improvement in the profitability and revenue growth of all of its members from one year to the next (Lambert, 2006b:27).

The customer relationship management process has both strategic and operational elements. The process has been divided into two parts in the GSCF framework, namely the strategic process in which the organisation establishes and strategically manages the process, and the operational process, which is the actualisation of the process once it has been established. Implementation of the strategic process within the organisation is a necessary step in integrating the organisation with other members of the supply chain, and is led by a management team comprised of executives from several functions including marketing, sales, finance, production, purchasing, logistics, and R&D, which is responsible for developing the procedures at the strategic level and ensuring implementation. At the operational level, the day-to-day activities take place, which are managed by a customer team for each key account and for each segment of non-key customers (Lambert, 2006b:28).

While there are a large number of software packages marketed as customer relationship management (CRM), these tools are not the same as the relationship-focused supply chain management process. CRM software packages have the potential to enable the management of the organisation to gather customer data quickly, identify the most valuable customers over time, and provide customised product and service offerings that can increase customer loyalty (Lambert, 2006b:29). However, according to the Gartner Group, 55% of all CRM software solution implementations do not achieve the objectives envisaged prior to implementation (Rigby, Reichheld & Scheffer, 2002), such as customer retention, customer acquisition, and customer profitability (Johnston & Marshall, 2008:60). There are four major reasons why CRM software packages fail to achieve the
envisaged objectives. These reasons are implementing software solutions before creating a customer service strategy, implementing the software before conducting change management and ensuring adequate preparation for the utilisation of the software within the organisation, assuming that the implementation of technology in itself within an organisation is beneficial, and trying to build relationships with the incorrect customers (Lambert, 2006b:30). Ultimately what is required is the establishment of visible, real time connectivity between the organisation and its customers, with information-sharing and the exchange of knowledge being important. While a CRM software solution may be viewed as an enabler in the customer relationship management process, without the above factors being present it is bound not to add value to the organisation's supply chain management efforts (Poirier, 2004:207).

Supply chain management is about relationship management, and a large degree of its successful implementation is based on the ability to develop relationships at a top management level in order to achieve buy-in across the management of the organisations in the supply chain, as well as to secure the resources required to make the relationship and multiple relationships between individuals within the respective supply chain organisations function, where activities are carried out on a day-to-day basis. The requirements for successful customer relationship management include trust, the open sharing of information, action-oriented senior management leadership, key connections, and successes secured early in the relationship. The ultimate measure of success for each relationship is the impact that it has on the financial performance of the organisations involved. Consequently, it is necessary for each organisation to have the capability to measure the performance of customer relationship management in terms of their impact on incremental revenues and costs, as well as incremental investment. With the correct information regarding the costs and benefits associated with process improvement, and a willingness to share gains, the supply chain can move towards the most efficient and effective structure (Lambert, 2006b:40).

At the strategic level, the customer relationship management process provides the structure for how relationships with customers will be developed and managed, with the objective of aligning functional expertise from both the supplier and the customer,
in order to support the implementation of the other seven supply chain management processes. The strategic customer relationship management process comprises five sub-processes, and includes a key account management component (Lambert, 2006b:29).

Figures illustrating the strategic and operational sub-processes and activities of each supply chain management process have been included in the discussion below. The S-1, S-2, S-3, etc. numbering convention is taken from the numbering in the GSCF assessment tool, and allows for the findings in Chapter 6 to be related back to the framework and the assessment tool.

The strategic sub-processes and the associated activities that comprise the Customer Relationship Management process are depicted in Figure 3.1.
The operational sub-processes and the associated activities that form part of the Customer Relationship Management process are depicted in Figure 3.2.
<table>
<thead>
<tr>
<th>Operational Sub-Processes</th>
<th>Activities</th>
</tr>
</thead>
</table>
| **O-1 Segment Customers** | • Analyse customer profitability  
• Evaluate potential growth  
• Document segments |
| **O-2 Prepare the Account/Segment Management Team** | • Identify the sales person to be the account/segment manager  
• Select team members |
| **O-3 Internally Review the Accounts** | • Review products purchased  
• Review sales growth  
• Review positioning in industry |
| **O-4 Identify Opportunities with Accounts** | • Identify sales opportunities  
• Identify cost-reduction opportunities  
• Identify service improvement opportunities |
| **O-5 Develop the Product and Service Agreements** | • Outline and draft the PSA  
• Gain commitment of the company’s functions  
• Present PSA to account for acceptance  
• For key customers, repeat until they agree  
• Agree on communication and continous improvement plan |
| **O-6 Implement the Product and Service Agreements** | • Develop and follow implementation plan  
• Meet regularly with key customers |
| **O-7 Measure Performance and Generate Profitability Reports** | • Measure by customer and for the customer; revenue, costs, profitability, other  
• Report performance |

Figure 3.2: The Operational Customer Relationship Management Process  
Source: Lambert (2008:37)
3.3.2.2 The Supplier Relationship Management Process

Supplier relationship management is the process that establishes the framework within which the organisation will select, categorise, and develop relationships with its suppliers. Supplier relationship management is a key process as it is the organisation’s interface with its suppliers and performs a similar role to customer relationship management in that it seeks to develop relationships with key partners, in this case with upstream members of the supply chain (Croxton et al., 2001:24).

As is the case with customer relationship management, the organisation will apply supplier relationship management with a small number of key suppliers based on the value they provide to the organisation over time, in order to develop long-term relationships that will benefit the organisation and the supply chain, while maintaining more traditional relationships with other less important suppliers. With the cost of materials as a percentage of sales in the 45%-65% range, there is a large scope of benefits that can be achieved through the optimal management of the supplier network (Lambert, 2006c:115).

The organisation’s management must identify the suppliers and supplier groups to be targeted, based on their impact on the ability of the organisation to achieve its corporate objectives. Supplier relationship management teams work with key suppliers to develop product and service agreements (PSAs) to meet the requirements of the organisation and selected suppliers for the achievement of mutual benefit. Teams work with key suppliers to improve processes, eliminate demand variability and non-value-added activities, and to develop PSAs that address the major business drivers of both the organisation and the supplier. Performance reports are designed in a manner that enables the profit impact of individual suppliers, as well as the organisation's impact on the profitability of suppliers to be measured (Lambert, 2006c:116). Each PSA establishes the terms of the relationship with the organisation. Supplier relationship management is concerned with defining and managing these PSAs (Croxton et al., 2001:24), supporting the manufacturing flow process, and the development of new products (Stock & Lambert, 2001:70).
Supplier relationship management has become a critical business process as a result of competitive pressures, the need to achieve cost-efficiency in order to be cost-competitive, and the need to develop closer relationships with key suppliers who can provide the expertise necessary to develop innovative products and successfully bring them to market (Lambert, 2006c:116). Supply chain management is about relationship management, and the supply chain is managed through the links established with key members of the supply chain, suppliers in this case. The ultimate measure of success for each relationship in the supply chain is the impact that it has on the financial performance and corporate objectives of the organisations involved. Consequently, it is necessary for each organisation to have the capability of measuring the performance of supplier relationship management in terms of its impact on financial performance. With an understanding of how an organisations actions affect the financial performance of both its suppliers and itself, it would be possible to develop programs that improve supply chain performance, and negotiate the sharing of benefits and costs in order for all of the organisations involved to have an incentive to participate (Lambert, 2006c:130).

Supplier relationship management and customer relationship management provide the critical linkages throughout the supply chain. For each supplier, the ultimate measure of success for the customer relationship management process is the change in the profitability of the customer. For each customer, the measure of success for the supplier relationship management process is the impact the supplier has on the organisation's profitability. The supplier relationship management process has both strategic and operational elements. The process is thus divided into two parts, the strategic process in which the organisation establishes and strategically manages the process, and the operational process, which is the actualisation of the process once it has been established. Implementation of the strategic process within the organisation is a necessary step in integrating the organisation with suppliers. It is at the operational level that the day-to-day activities take place. The strategic process is led by a management team, and at the operational level teams are established for each key supplier and for each segment of non-key suppliers. The teams comprise managers from several functions, including marketing, finance, production, purchasing, and logistics. Employees outside of the teams may execute parts of the process, but the teams still maintain managerial control (Lambert, 2006c:117).
The strategic sub-processes and the associated activities that form part of the supplier relationship management process are illustrated in Figure 3.3.

<table>
<thead>
<tr>
<th>Strategic Sub-Processes</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>S-1 Review Corporate, Marketing, Manufacturing, and Sourcing Strategies</strong></td>
<td>• Identify product and service components that are key to the organisation's success now and into the future</td>
</tr>
<tr>
<td><strong>S-2 Identify Criteria for Segmenting Suppliers</strong></td>
<td>• Choose appropriate criteria: Profitability/growth/stability, technology, capacity, innovation, quality, volume purchased, criticality/service level required, sophistication/compatibility</td>
</tr>
</tbody>
</table>
| **S-3 Provide Guidelines for the Degree of Customisation in the Product and Service Agreements** | • Consider quality/cost implications of various differentiation alternatives  
• Select boundaries for degree of differentiation |
| **S-4 Develop Framework of Metrics**                        | • Outline metrics of interest  
• Relate metrics to supplier’s impact on profitability and the profitability for the supplier |
| **S-5 Develop Guidelines for Sharing Process Improvement Benefits with Suppliers** | • Outline options for sharing the benefits of process improvement |

Figure 3.3: The Strategic Supplier Relationship Management Process  
Source: Lambert (2008:56)

The operational sub-processes and the associated activities that form part of the supplier relationship management process are depicted in Figure 3.4.
<table>
<thead>
<tr>
<th>Operational Sub-Processes</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>O-1 Segment Suppliers</strong></td>
<td>• Perform supplier profitability analysis or total cost-analysis</td>
</tr>
<tr>
<td></td>
<td>• Assess potential growth, strategic value and drivers</td>
</tr>
<tr>
<td><strong>O-2 Prepare the Supplier/Segment Management Team</strong></td>
<td>• Identify account/commodity manager</td>
</tr>
<tr>
<td></td>
<td>• Select team members</td>
</tr>
<tr>
<td><strong>O-3 Internally Review the Supplier/Supplier Segment</strong></td>
<td>• Identify product(s) purchased</td>
</tr>
<tr>
<td></td>
<td>• Determine sales growth</td>
</tr>
<tr>
<td></td>
<td>• Review criticality of supplier</td>
</tr>
<tr>
<td><strong>O-4 Identify Opportunities with the Suppliers</strong></td>
<td>• Identify sales opportunities</td>
</tr>
<tr>
<td></td>
<td>• Assess cost reduction opportunities</td>
</tr>
<tr>
<td></td>
<td>• Determine service improvement opportunities</td>
</tr>
<tr>
<td><strong>O-5 Develop the Product and Service Agreements and Communication Plans</strong></td>
<td>• Outline and draft the PSA</td>
</tr>
<tr>
<td></td>
<td>• Gain commitment of the company’s functions</td>
</tr>
<tr>
<td></td>
<td>• Gain supplier acceptance of PSA</td>
</tr>
<tr>
<td></td>
<td>• Agree on a communication and continuous improvement plan</td>
</tr>
<tr>
<td><strong>O-6 Implement the Product and Service Agreements</strong></td>
<td>• Develop and follow implementation plan</td>
</tr>
<tr>
<td></td>
<td>• Meet regularly with key suppliers</td>
</tr>
<tr>
<td><strong>O-7 Measure Performance and Generate Supplier Cost Profitability Reports</strong></td>
<td>• Measure by supplier and for the supplier: revenue, profitability, costs, service, quality</td>
</tr>
<tr>
<td></td>
<td>• Report performance</td>
</tr>
</tbody>
</table>

*Figure 3.4: The Operational Supplier Relationship Management Process*

*Source: Lambert (2008:65)*
3.3.2.3 The Customer Service Management Process

Customers increasingly expect timely and accurate information before, during, and after transactions, and an ease of doing business with suppliers that allows for service queries, requests for information, and complaints to be dealt with from a central point at the supplier, despite the supplier organisation having multiple product lines, multiple divisions, and geographically dispersed branches. To meet these kinds of expectations requires a move away from the traditional isolated approach towards a more coordinated and integrated design of the supply chain, in order to provide goods and services to customers at low costs and high service levels. The motivation for management to provide high levels of customer service derives from the need to grow sales revenue through the satisfaction of demanding customers who have to meet complex requirements with their own customers. In a competitive business environment, it is necessary that organisations proactively manage their customer service process in order to respond to potentially disruptive situations before they affect the customer, or special service requests from the customer that require unique circumstances to be managed in order to ensure success (Bolumole, Knemeyer & Lambert, 2006:41).

The customer service management process is the organisation’s interface with its customers, and it operates as the single source of information required by customers, such as product availability, order lead-times, and order status (Stock & Lambert, 2001:68). In order for the customer service management process to be well-managed, a real-time online interconnected information system to provide order, product and pricing information to support customer inquiries and facilitate order placement with current and consistent information, is required. This allows an organisation to be proactive in the provision of service related information, and more responsive to service failures. Real-time information about inventory situations and customer orders are provided to customers through the interface with the organisation’s production and distribution functions (Bolumole et al., 2006:42; Stock & Lambert, 2001:68).

While the customer relationship management process is responsible for providing the organisation’s products and services to customers, the customer service
management process plans how the commitments made in the PSAs, developed by the customer relationship management process teams, are going to be delivered and managed (Croxton et al., 2001:17), and by working closely with the order fulfilment process in actively addressing customer inquiries and orders. The goals of the customer service management process are to develop the necessary infrastructure and coordination for implementing the PSAs, and to provide a central point of contact for the customer, thus representing the key point in the organisation for administering the PSAs (Bolumole et al., 2006:42; Stock & Lambert, 2001:68). After-sales service is also part of customer service management, and will require a technical customer service group to assist customers with product applications and recommendations (Stock & Lambert, 2001:68).

Customer service has a significant effect on the performance of the organisation, given its influence on the purchasing decisions of customers, serving as a means of differentiating the organisation's products, increasing the likelihood of customers repurchasing the organisation's product offerings, and its role in securing and maintaining customers for the organisation. Customer service management is carried out through the integration of internal functions and other members of the supply chain, with the benefits of customer service improvements being extended to other members of the supply chain, as well as benefiting the organisation and its customers (Bolumole et al., 2006:42).

A deliberate implementation and execution of the customer service management process can have substantial benefits on the organisation's economic value added (EVA) through increased revenue, lower expenses, reduced inventory levels, improved asset utilisation, and improved product availability. The process implements the PSAs in a manner which reduces the probability of unplanned situations occurring, and enables the organisation to proactively respond to unplanned situations that may arise. Operating as a supply chain, management can find ways to improve both the internal and external coordination that needs to take place as part of the customer service management process (Bolumole et al., 2006:58).

The strategic sub-processes and the associated activities that form part of the customer service process are illustrated in Figure 3.5.
Figure 3.5: The Strategic Customer Service Management Process
Source: Knemeyer et al. (2008:75)

The operational sub-processes and associated activities that form part of the customer service management process are depicted in Figure 3.6.
3.3.2.4 The Demand Management Process

The demand management process is concerned with balancing customers' requirements for goods with the supply capabilities of the organisation and the supply chain. This process includes forecasting demand and synchronising it with production, procurement, distribution (Croxton et al., 2001:18), increasing flexibility, reducing variability, (Croxton et al., 2006:59) and determining what customers will purchase and when, through the use of point-of-sale and key customer data (Stock & Lambert, 2001:69). Having a management process in place enables an organisation to be more proactive in anticipating demand, and to have the operational flexibility to be effective at meeting unanticipated demand. Reducing variability in demand allows for consistency in planning and reductions in cost, while increasing operational flexibility allows an organisation to be responsive to internal and external events that have a bearing on the organisation's ability to meet demand for goods and services arising from customers. While most customer-driven variability in demand is

<table>
<thead>
<tr>
<th>Operational Sub-Processes</th>
<th>Activities</th>
</tr>
</thead>
</table>
| O-1 Recognise Event       | •Identify event  
                          | •Determine nature of event |
| O-2 Evaluate Situation and Alternatives | •Coordinate with functions to determine alternative functions  
                                | •Decide how to respond to an event |
| O-3 Implement Solution    | •Determine implementation steps  
                          | •Coordinate with business process owners or function managers processing the request  
                          | •Respond to event |
| O-4 Monitor and Report    | •Monitor the evolution of the event  
                          | •Record event log  
                          | •Keep customer informed  
                          | •Measure performance |
unavoidable, demand management aims to eliminate management practices that increase variability, and to introduce policies and procedures that promote smooth demand patterns (Croxton, et al., 2006:59). The demand management process is also concerned with developing and executing contingency plans to allow demand to be met when operations or operational plans are interrupted (Croxton et al., 2001:18).

Demand management can have a material effect on the profitability of an organisation, its customers, and suppliers, by impacting on the availability of products on store shelves for consumers to purchase, reducing raw materials and finished goods inventories through more accurate forecasting and reduced variability, and a reduction in logistics costs and improved asset utilisation brought on by smoother operational execution. Improvements will be realised within the organisation and will extend to other members of the supply chain (Croxton, et al., 2006:60).

Demand management is an important component of successful supply chain management. A well thought-out implementation and execution of the process can have substantial benefits for the organisation’s EVA. It is not enough to forecast well and have a good operations planning system in place. Demand management requires that demand variability is reduced, operational flexibility is increased, and a contingency management system is implemented so that the organisation can react timeously to unplanned situations as they arise. Although it is possible to implement many parts of the demand management process within the organisation, the greatest opportunities exist when the process is integrated with the processes of suppliers and customers. It is through these integration efforts that the benefits of supply chain management will be achieved (Croxton, et al., 2006:76).

The demand management process has both strategic and operational elements. In the strategic process, the cross-functional team establishes the structure for managing the process, while the operational process is the actualisation of demand management. Implementation of the strategic process is a necessary step in integrating the organisation with other members of the supply chain, thereby enabling the day-to-day activities involved in demand management to be executed through the operational processes. A process team comprises managers from critical functions
including marketing, finance, production, purchasing, and logistics, leads both the strategic and operational processes, and may also include members from outside the organisation, from key customers or suppliers, and third-party service providers. The strategic sub-processes and the associated activities that form part of the demand management process are illustrated in Figure 3.7.
<table>
<thead>
<tr>
<th>Strategic Sub-Processes</th>
<th>Activities</th>
</tr>
</thead>
</table>
| S-1 Determine Demand Management Goals and Strategy | • Review company's strategies  
• Study supply chain network and bottlenecks  
• Determine goals and focus for the process |
| S-2 Determine Forecasting Procedures | • Determine level(s) of forecast  
• Determine sources of data  
• Analyse different approaches (Vendor Managed Inventory, CPFR, traditional)  
• Choose the most appropriate methods and plan forecasting process |
| S-3 Plan Information Flow | • Determine data requirements  
• Determine how forecast information will be shared  
• Consider how inputs and outputs can be used to shape business strategy |
| S-4 Determine Synchronisation Procedures | • Outline procedures for synchronisation  
• Determine long term planning requirements  
• Examine supplier/manufacturing capabilities  
• Determine allocation procedures |
| S-5 Develop Contingency Management System | • Develop list of potential interruptions to supply  
• Determine event response procedures for each possible event |
| S-6 Develop Framework of Metrics | • Link demand management performance to EVA  
• Determine appropriate metrics and set goals |

Figure 3.7: The Strategic Demand Management Process  
Source: Croxton et al. (2008:90)
The operational sub-processes and the associated activities that form part of the demand management process are illustrated in Figure 3.8.

<table>
<thead>
<tr>
<th>Operational Sub-Processes</th>
<th>Activities</th>
</tr>
</thead>
</table>
| **O-1 Collect Data/Information** | • Collect historical demand  
• Collect sales/marketing information  
• Collect customer information - CPFR/VMI |
| **O-2 Forecast** | • Analyse data  
• Develop forecasts  
• Track errors and provide feedback |
| **O-3 Synchronise** | • Identify and plan within capacity constraints  
• Determine confidence intervals for forecasts  
• Develop aggregate demand execution plan  
• Balance risk with financial constraints  
• Plan rough-cut capacity for new products |
| **O-4 Reduce Variability and Increase Flexibility** | • Identify root causes of variability  
• Work within the firm and supply chain to reduce demand variability  
• Determine how much flexibility is required  
• Identify opportunities to increase flexibility  
• Work within the firm and the supply chain to increase flexibility |
| **O-5 Measure Performance** | • Calculate process metrics  
• Link metrics to EVA |

Figure 3.8: The Operational Demand Management Process  
Source: Croxton et al. (2008:100)
3.3.2.5 The Order Fulfilment Process

A key part of effective supply chain management is to meet customer requirements in terms of order fulfilment. Effective order fulfilment requires integration of the organisation’s manufacturing, logistics, and marketing plans. The organisation should develop partnerships with key members of the supply chain to meet customer requirements, such as required delivery dates, and to reduce total delivered cost to customers (Croxton et al., 2001:20). The objective is to provide a seamless order fulfilment process (Stock & Lambert, 2001:70).

The order fulfilment process involves generating, filling, delivering, and servicing customer orders. In some cases, it is only through the order fulfilment process that the customer interacts with the organisation, thus determining the customer's experience in dealing with the organisation. In order to fulfil orders according to customers' requirements and to ensure a satisfactory experience in dealing with the organisation, management must design a network and a fulfilment process that enables the organisation to meet these requirements while minimising total delivered cost (Croxton, 2006:77). The order fulfilment process considers manufacturing, logistics, and marketing requirements to design the distribution network through which order fulfilment will take place (Croxton et al., 2001:20), and requires the integration of logistics, marketing, finance, purchasing, R&D, and production within the organisation, as well as coordination with key customers and suppliers (Croxton, 2006:77).

While the order fulfilment process is often viewed as transactional and part of the logistics function of the organisation, it is important that its strategic components, cross-functional nature, and its role in the supply chain are recognised. The process cannot be designed without input from other functional areas including marketing, finance, purchasing, and production, as well as support functions, such as IT. Therefore, it is important that the process team be cross-functional. Numerous examples of bad metrics driving misguided behaviour exist. The process team needs to examine the effects of order fulfilment on the financial performance of the organisation, and ensure that the metrics used are consistent with improving the financial performance of the entire supply chain. To achieve higher levels of
performance, the requirements of all functional teams must be met. It is possible to implement many parts of the order fulfilment process within the organisation. However, the real opportunities for performance improvements and efficiency are realised when the organisation integrates with key customers and suppliers that can assist in streamlining and improving the order fulfilment process. Whether through idea sharing or information sharing, the role of the other supply chain members takes the order fulfilment activities from a single-organisation process to a supply chain management process (Croxton, 2006:92).

The order fulfilment process has both strategic and operational elements, and is thus divided into two parts; the strategic process in which management establishes the structure for managing the process, and the operational process that represents the execution of the process once it has been established (Croxton, 2006:78). At the operational level, the order fulfilment process focuses on transactions, while at the strategic level, management focuses on making critical improvements to the process that influence the financial performance of the organisation, its customers, and its suppliers, by understanding the internal and external requirements, and ensuring that the system has adequate capabilities. This includes understanding the business strategy and the customer service requirements, and designing a supply chain network that meets customers’ requirements efficiently. Another part of the strategic process is establishing a responsive system for when demand exceeds supply and a portion of the total orders cannot be filled. Ensuring that this system still manages to meet at least the minimum needs of customers is critical to achieving good customer service, even under challenging conditions (Croxton, 2006:92).

An optimised logistics network minimises the total cost of delivering goods to customers, including procurement costs, and a streamlined order fulfilment process reduces the order-to-cash cycle time, which reduces working capital requirements and reduces the delivery lead-time, which allows for reduced inventory levels. Therefore, order fulfilment can affect the profitability of the organisation, as well as other members of the supply chain (Croxton, 2006:78).

The strategic sub-processes and the associated activities that form part of the order fulfilment process are depicted in Figure 3.9.
<table>
<thead>
<tr>
<th>Strategic Sub-Processes</th>
<th>Activities</th>
</tr>
</thead>
</table>
| **S-1 Review Marketing Strategy, Supply Chain Structure and Customer Service Goals** | • Review firm's strategies  
• Understand customer requirements  
• Determine capabilities of the supply chain  
• Determine the order fulfillment budget |
| **S-2 Define Requirements for Order Fulfillment**                  | • Review the order-to-cash cycle and supply capabilities  
• Define lead-time and customer service requirements for each customer segment  
• Define operational requirements  
• Evaluate core competencies |
| **S-3 Evaluate Logistics Network**                                  | • Determine if the current network can support the requirements within financial constraints  
• Determine which plants produce which products, warehouse, plant and supplier locations, transportation modes |
| **S-4 Define Plan for Order Fulfillment**                          | • Determine how to fill orders from each customer segment  
• Make decisions about payment terms, order sizes, and packing requirements  
• Determine allocations rules  
• Assess the role of technology |
| **S-5 Develop Framework of Metrics**                                | • Link order fulfillment performance to EVA  
• Determine appropriate metrics and set goals |

Figure 3.9: The Strategic Order Fulfilment Process  
Source: Croxton (2008:108)

The operational sub-processes and the associated activities that form part of the order fulfilment process are illustrated in Figure 3.10.
### 3.3.2.6 The Manufacturing Flow Management Process

Manufacturing flow management is the supply chain management process that includes all the activities necessary to obtain, implement, and manage manufacturing flexibility in the supply chain, and to move products through the manufacturing plants. Manufacturing flexibility reflects the ability to produce a variety of products in a timely manner.

- **Figure 3.10: The Operational Order Fulfilment Process**
  - Source: Croxton (2008:115)

<table>
<thead>
<tr>
<th>Operational Sub-Processes</th>
<th>Activities</th>
</tr>
</thead>
</table>
| **O-1 Generate and Communicate Order** | • Generate order  
• Transmit order |
| **O-2 Enter Order** | • Receive order  
• Enter order  
• Edit order |
| **O-3 Process Order** | • Check credit  
• Check inventory  
• Plan order flow and transportation |
| **O-4 Handle Documentation** | • Acknowledge order  
• Prepare bill of lading, picking instructions and packing slips  
• Generate invoice |
| **O-5 Fill Order** | • Pick product  
• Pack product  
• Stage for loading  
• Prepare load confirmation |
| **O-6 Deliver Order** | • Prepare shipping documents  
• Execute delivery  
• Transmit delivery confirmation  
• Audit and pay freight bill |
| **O-7 Perform Post Delivery Activities and Measure Performance** | • Receive and post payment  
• Record bad debt expense  
• Measure process performance |
manner at the lowest possible cost, in response to changes in market-demand for the products. In order to achieve flexibility in the manufacturing capacity of the supply chain, planning and execution of manufacturing activities must extend beyond the operations taking place within the factory and include the involvement of customers and suppliers (Goldsby & Garcia-Dastugue, 2006:93). Flexibility is important to most operations, and particularly when the manufacturer faces demand variation across a wide assortment of products, with less stable demand environments placing a premium on the flexible accommodation of variations in demand. The aim is to determine the appropriate degree of flexibility to build into the manufacturing system, whilst considering that increased flexibility is typically accompanied by higher cost or increased investment.

The manufacturing flow process deals with producing the organisation's products and establishing the manufacturing flexibility required to serve the organisation’s target markets. The process includes all the activities required for managing the product flow through the organisation’s manufacturing facilities, and for obtaining, implementing and managing flexibility in the volume of goods that can be produced in a certain time period. The objective of the manufacturing flow process is to determine the manufacturing infrastructure required to fulfil customers' requirements (Croxton et al., 2001:22) by matching production capability with demand (Stock & Lambert, 2001:70). However, the process involves more than production, as the efficiency of the product flow through the plants depends on the reliability of the inbound logistics processes as well as the suppliers' ability to deliver materials orders to the factory on time and complete, which requires the logistics and procurement functions to work closely with production. Similarly, the degree of manufacturing flexibility depends on the flexibility of suppliers in supplying materials and components used in the manufacture of the finished goods in the plant. There are a number of ways to increase flexibility, including reserving available capacity, and standardising components while maintaining an inventory of subcomponents. These tactics will require the involvement of suppliers. Ultimately, a number of factors both internal and external to the organisation affect the organisation's ability to achieve the desired degree of manufacturing flexibility (Goldsby & Garcia-Dastugue, 2006:94).
Manufacturing flow management, as with the other supply chain management processes, relies on external integration to accomplish its objectives. The process is relevant for the finished goods manufacturer, as well as downstream and upstream members of the supply chain, given the influence that external parties have on the process through the requirements of customers for product assortments, specific product attributes, quality, cost, and availability to meet demand, and the suppliers influence on the ability of the manufacturer to meet customer requirements (Goldsby & Garcia-Dastugue, 2006:96).

The fields of operations management, operations research, and industrial engineering are well-established in recognising new and better ways of converting raw materials and components within the confines of the plant. Supply chain management on the other hand, aims to improve manufacturing performance. This involvement is coordinated through the customer relationship management and supplier relationship management teams respectively by leveraging the capabilities of the production function. Capturing demand information and managing demand are critical to the manufacturing flow management process, as the ability of the demand management to anticipate demand with precision alleviates the need of the manufacturing system to be flexible. However, the trend in most industries is demand patterns characterised by frequent and dramatic change, which drives the need for greater flexibility, hence the need for manufacturing flow management (Goldsby & Garcia-Dastugue, 2006:114).

The manufacturing flow management process has both strategic and operational elements, with the strategic portion providing the structure for managing the process within the organisation and across key supply chain members, and the operational portion of the process representing the actualisation of manufacturing flow management (Goldsby & Garcia-Dastugue, 2006:96).

The strategic sub-processes and the associated activities that form part of manufacturing flow management are illustrated in Figure 3.11.
The operational sub-processes and the associated activities that form part of manufacturing flow management are depicted in Figure 3.12.
3.3.2.7. The Product Development and Commercialisation Process

The development of new products is critical to the continuing success of an organisation. The product development and commercialisation process is the supply chain management process that provides the structure for jointly developing and bringing new products to market with customers and suppliers in the shortest possible
time, and making them available in the market place as efficiently as possible (Croxton et al., 2001:26; Rogers et al., 2006:131). This process plays a key role in the development and commercialisation of products as it integrates customers and suppliers into the product development process by using relationships with customers to gather information regarding their requirements, market trends, and market intelligence, and combining it with suppliers expertise and knowledge of new technologies, materials, and designs in order to reduce time to market and develop products that have a higher rate of success in the market place (Croxton et al., 2001:26). Effective implementation of the process enables the coordination of an efficient flow of new products across the supply chain, and assists the various organisations in the supply chain with the establishment or expansion of manufacturing, logistics, marketing and other related activities to support the commercialisation of the product (Rogers et al., 2006:131).

The product development and commercialisation process requires effective planning and execution throughout the supply chain, and, if managed correctly, can provide a sustainable competitive advantage for all the organisations in the supply chain that are involved in the process. Reducing the new product development cycle time and moving those new products into the market efficiently is important for long-term corporate success. In many markets, 40% or more of revenues are derived from products introduced in the prior year. While the development of successful products is a multidisciplinary process, product development and commercialisation from a supply chain management perspective integrates both customers and suppliers into the process in order to reduce time to market, which is key to innovation, success, and profitability (Rogers et al., 2006:131). Involving suppliers at an early stage in the product development process provides suppliers with the opportunity to provide an input into tooling decisions and component design, which may lead to more efficient designs and lower cost materials being used. As they are involved at an early stage, suppliers are also given the opportunity to prepare their manufacturing processes in advance of product commercialisation, further reducing the time to market. As product life-cycles shorten, the right products must be developed and launched in ever shorter periods in order to be competitive and achieve differentiation in the marketplace (Croxton et al., 2001:26). The product development and commercialisation process requires the integration of customers and suppliers and
the alignment of their activities. Successful implementation requires metrics that measure the financial impact on the organisation and other members of the supply chain (Rogers et al., 2006:132).

Product development and commercialisation is a supply chain process that is particularly focused on transcending the boundaries of the organisation, in order to integrate the organisation's process of developing new products and services with key customers and suppliers. Effectively implementing product development and commercialisation within a supply chain context can reduce an organisation's costs, increase revenues, and positively influence EVA. By tapping into the knowledge and skills of other supply chain members, an organisation can expand its information resources and gain access to ideas for product development or increased development efficiency (Rogers et al., 2006:135).

Each of the eight supply chain processes defined by the GSCF contains strategic and operational elements. The strategic portion of the product development and commercialisation process establishes a structure for developing a product and moving it to market, thus providing a template for implementation within the organisation. The operational portion is the realisation of the process that has been established at the strategic level. Both the strategic and operational processes are led by cross-functional teams that include representatives from key customers and suppliers (Rogers et al., 2006:135).

The strategic sub-processes and the associated activities that form part of the product development and commercialisation process are illustrated in Figure 3.13.
Strategic Sub-Processes | Activities
---|---
S-1 Review Corporate, Marketing, Manufacturing and Sourcing Strategies | • Review key customer segment needs  
• Determine the role of new products in the firm’s strategy  
• Understand supply chain constraints and capabilities
S-2 Develop Idea Generation and Screening Processes | • Determine idea sources  
• Establish incentives for new product ideas  
• Develop formalised customer feedback programs
S-3 Establish Guidelines for Cross-Functional Product Development Team Membership | • Determine customer/supplier involvement  
• Determine functional involvement  
• Examine resource constraints
S-4 Identify Product Rollout Issues and Constraints | • Consider requirements for: market planning, salesforce training, promotion planning, inventory deployment, transportation planning
S-5 Establish New Product Project Guidelines | • Determine: time-to-market expectations, product profitability, drain on human resources, strategic fit  
• Publish budget, profitability, and timeline guidelines
S-6 Develop Framework of Metrics | • Link product development and commercialisation performance to EVA  
• Determine appropriate metrics and set goals

Figure 3.13: The Strategic Product Development and Commercialisation Process  
Source: Rogers et al. (2008:148)

The operational sub-processes and the associated activities that form part of the product development and commercialisation process are illustrated in Figure 3.14.
<table>
<thead>
<tr>
<th>Operational Sub-Processes</th>
<th>Activities</th>
</tr>
</thead>
</table>
| O-1 Define New Products and Assess Fit | • Generate and screen new product ideas  
• Perform market assessment  
• Consult with key customers  
• Assess fit with channels, manufacturing and logistics environment |
| O-2 Establish Cross-Functional Product Development Team | • Determine functional roles  
• Involve key suppliers and customers |
| O-3 Formalise New Product Development Project | • Determine: time to market, product profitability, human resource requirements, strategic fit |
| O-4 Design, Build and Test Prototypes | • Work with suppliers  
• Conduct value analysis  
• Source prototype materials  
• Manufacture prototypes  
• Test product |
| O-5 Evaluate Make/Buy Decision | • Assess supply capabilities  
• Send RFQs  
• Analyse RFQs |
| O-6 Determine Channels | • Determine market plan  
• Plan inventory deployment |
| O-7 Rollout Product | • Implement market plan  
• Implement sales force training  
• Implement promotion plan  
• Deploy inventory  
• Implement transportation plan  
• Plan flow  
• Source materials  
• Manufacture/assemble |
| O-8 Measure Performance | • Analyse process and identify opportunities for improvement  
• Calculate process metrics and link to EVA |

Figure 3.14: The Operational Product Development and Commercialisation Process  
Source: Rogers et al. (2008:154)
3.3.2.8 The Returns Management Process

Returns management is "the supply chain management process whereby activities associated with returns, reverse logistics, gatekeeping, and avoidance are managed within the organisation and across key members of the supply chain". The implementation of this process enables the management of the reverse product flow in the supply chain, and the identification of opportunities to reduce unwanted returns, and to control reusable assets such as pallets, reusable packaging, crates, tote boxes etc. (Rogers et al., 2006:147). Effective returns management is a critical part of supply chain management (Croxton et al., 2001:28) given the existence and volume of packaging material, defective products, warranty claims, product recalls and waste that is generated in the supply chain (Vogt et al., 2007:280). The management of returns is an important area of consideration in the supply chain, given volume of goods being returned. In the United States, retail customer returns for general merchandise are estimated to be approximately 6% of revenue (Rogers et al., 2006:147).

Returns management is a critical supply chain management process that requires planning and effective execution across all of the organisations in the supply chain. Effective implementation of returns management enables management to identify productivity improvement and returns reduction opportunities (Rogers et al., 2006:148). While returns management includes several features that make an individual organisation more effective and efficient, the process provides the most benefits when implemented across members of the supply chain. The returns management process can reduce costs, increase revenue, and increase customer satisfaction. Avoidance of unnecessary returns through improved policies and better understanding of the sources and reasons behind returns can reduce the number of return requests, which will reduce costs and increase satisfaction. Gatekeeping can reduce the cost of doing business by identifying as early as possible the products that should not be returned. Developing disposition guidelines and implementing them across the supply chain will reduce costs by increasing the speed in the reverse flow of goods, and assisting in the selection of the optimal destination of the returned product (Rogers et al., 2006:166).
Returns management is a process that requires interaction and cooperation among all members of the supply chain in order to implement effective avoidance and gatekeeping activities, which are important elements in the effective management of the flow of returned products and reusable containers and packaging. As part of implementing the process, management needs to measure the financial impact of returns on the organisation and on other members of the supply chain. Linking the performance of the process with the organisation's financial measures will assist in the appropriate identification of the benefits from returns management, which can be used internally to reward managers, and reward customers and suppliers in the supply chain that are contributing to the success of the process (Rogers et al., 2006:166).

There are many types of returns that need to be managed within the returns process, each of which poses unique challenges. Returns are grouped into five categories within the framework: consumer returns, marketing returns, asset returns, product recalls and environmental returns. When designing a returns management process, managers need to identify the types of returns which take place in the supply chain within the above categories, such as commercial returns of products in good condition, damaged and expired product returns, product recalls, reusable containers and packaging, and develop specific procedures that are appropriate for each type. The type of return may have a different impact within the organisation and on other organisations within the supply chain, and these impacts must be analysed. A return that affects a consumer could have a long lasting effect on the market's perception of the organisation, its brand, and its products. Furthermore, in markets and industries where sophisticated regulatory frameworks are in place, an effective returns management process is an essential aspect of an organisation's business model. For returns that do not have a direct effect on the consumer, the key considerations will be establishing efficient return flow procedures that are acceptable to the organisation's customers. Similarly, returns that are created as a result of product failure may require interfaces with the supplier relationship management and/or product development and commercialisation teams, while returns due to consumers' internal processes will not (Rogers et al., 2006:150).
While returns management is often neglected by organisations, this process can assist the organisation in developing a sustainable competitive advantage (Croxton et al., 2001:28) as it can differentiate the organisation from competitors and contribute towards the sustainability and environmental objectives of the organisation. Key measures in returns management are the time required to make returned goods available to customers, and reducing the amount of waste materials that must be handled in the supply chain (Stock & Lambert, 2001:71). Measuring the benefits from returns management may be used to justify investments for future improvements to the process. Returns management can be used strategically to increase switching costs and reduce risk for customers. Overall, the returns management process can increase customer satisfaction by avoiding returns, and in the case of unavoidable or desirable returns, by handling returns quickly and efficiently (Rogers et al., 2006:166).

Each of the eight supply chain management processes defined in The Global Supply Chain Management Forum framework contain strategic and operational elements. The strategic portion of returns management establishes a structure for implementation of the process within the organisation and across key members of the supply chain. The operational process is a realisation of the process that has been established at a strategic level. Both the strategic and operational processes are led by a management team comprising managers from several functions including marketing, finance, production, purchasing and logistics. In some cases, the team may include external members such as customers, suppliers, or representatives from third-party service companies. The process team is responsible for developing the procedures at the strategic level and ensuring that they are implemented. This team also has the day-to-day responsibility for managing the process at an operational level. While the employees outside of the team may carry out certain parts of the returns process, the team maintains oversight and managerial control (Rogers et al., 2006:152).

The strategic sub-processes and the associated activities that form part of the returns management process are illustrated by Figure 3.15.
The operational sub-processes and the associated activities that form part of the returns management process are illustrated by Figure 3.16.
### Operational Sub-Processes

<table>
<thead>
<tr>
<th>O-1 Receive Return Request</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Initiate customer return request</td>
<td></td>
</tr>
<tr>
<td>• Implement gatekeeping guidelines</td>
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<table>
<thead>
<tr>
<th>O-2 Determine Routing</th>
<th>Activities</th>
</tr>
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<tbody>
<tr>
<td>• Review routing guidelines</td>
<td></td>
</tr>
<tr>
<td>• Plan routing</td>
<td></td>
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<tr>
<td>• Generate return material authorisations</td>
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<table>
<thead>
<tr>
<th>O-3 Receive Returns</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Receive returned material</td>
<td></td>
</tr>
<tr>
<td>• Verify, inspect and process return (gatekeeping)</td>
<td></td>
</tr>
<tr>
<td>• Determine return reason</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>O-4 Select Disposition</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Apply disposition guidelines</td>
<td></td>
</tr>
<tr>
<td>• Transport product to final disposition</td>
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<table>
<thead>
<tr>
<th>O-5 Credit Customer/Supplier</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Coordinate credit authorisation across supply chain</td>
<td></td>
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<tr>
<td>• Negotiate settlement</td>
<td></td>
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<table>
<thead>
<tr>
<th>O-6 Analyse Returns and Measure Performance</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Analyse returns and identify opportunities for avoidance</td>
<td></td>
</tr>
<tr>
<td>• Calculate process metrics and link to EVA</td>
<td></td>
</tr>
<tr>
<td>• Set goals for performance improvement</td>
<td></td>
</tr>
</tbody>
</table>

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**Figure 3.16: The Operational Returns Management Process**

Source: Rogers et al. (2008:175)
3.4 Comparison of the GSCF and SCOR Frameworks

While both the GSCF and SCOR frameworks are process-based, they represent different approaches to supply chain management. The SCOR and GSCF frameworks prescribe the implementation of business processes, but the goals of each are different (Lambert et al., 2008:306).

Each framework has its strengths and weaknesses that must be acknowledged for managers to understand the value that each can bring to their organisations, and the potential issues that must be addressed in implementing each. Lambert et al. (2008) used the following criteria to compare the GSCF and SCOR frameworks: scope, strategic alignment, breadth of activities, cross-functional involvement, process and performance benchmarking, and value creation.

3.4.1 Scope

The scope of a supply chain management framework is indicated by the extent to which the framework facilitates the achievement of the strategic objectives of an organisation. For organisations to achieve their strategic objectives, they must integrate the activities performed by the different functional areas. Therefore, a framework can be evaluated by how it supports or enables the achievement of the corporate strategy, and by the breadth of the activities it includes (Lambert et al., 2005:34).

SCOR focuses on transactional efficiency and effectiveness for the delivery of products to customers both internally and in the supply chain (Lambert et al., 2005:34). While managers need to aim for transactional efficiency, cost minimisation across the supply chain cannot be achieved without managing key relationships. Failure to recognise the value of a relationship orientation will limit supply chain efficiency. SCOR is thus a useful tool for identifying areas of improvement to achieve quick pay-back opportunities that satisfy top management’s desire for cost reductions and asset efficiency. Identifying areas where fast gains can be achieved is possible, because the SCOR framework involves functions that are more easily integrated,
such as procurement, logistics, and operations. In many organisations, opportunities for transactional process improvements may be realised during the implementation on SCOR (Lambert et al., 2008:307).

The GSCF framework is strategic in nature, and focuses on increasing long-term shareholder value by measuring and aiming to increase an organisation's EVA, through the establishment and development of formal cross-functional relationships with key members of the supply chain (Lambert et al., 2008:307). The commercial environment that tends to favour the implementation of the GSCF framework is one in which the capability to identify, build and maintain relationships with other members of the supply chain is considered to be a source of competitive advantage. In many organisations, management has begun to recognise the importance of intangibles which inherently add value to the organisation's products and services, and that to achieve organisational objectives, interactivity, connectivity, and on-going relationships with customers and suppliers are required (Lambert et al., 2008:307).

Ernie Elliot, former vice president of Supply Chain at xpedx, an international paper company, summarised his experience working with both frameworks as follows: “The difference between the SCOR and GSCF approaches lies in the fact that SCOR addresses symptoms through tactics. The GSCF framework provides a strategic approach to address supply chain management processes incorporating the knowledge, expertise and objectives of all functions” (Lambert et al., 2008:307).

3.4.2 Strategic Alignment

In terms of strategic alignment, each of the GSCF processes is linked to the corporate strategy and the functional strategies that have the greatest impact, either directly or indirectly, on the achievement of the corporate strategy through the customer relationship and supplier relationship management processes. The link between the processes and the corporate and functional strategies is necessary to ensure alignment, and to make functional activities responsive to the market (Lambert et al., 2005:34).
SCOR processes are developed according to the operations strategy of an organisation. While the operations strategy should be developed according to the corporate strategy and be aligned with the other functional strategies, SCOR does not explicitly consider these other strategies (Lambert et al., 2005:34). The objective of SCOR is to prescribe the activities that are related to product flow through the description of the plan, source, make, deliver, and return processes and related best practices and metrics, as described in the framework (Supply Chain Council, 2010). The potential inconsistency between functional and corporate strategies, due to the lack of a formal mechanism for linking them in the framework, increases the probability that the organisation-wide alignment of resources will be sub-optimal (Lambert et al., 2008:308).

3.4.3 Breadth of Activities

The GSCF framework is broad in scope, as it includes activities such as product development, demand generation, relationship management, and returns avoidance. The framework provides specific practices for the establishment and maintenance of formal relationships with key customers and suppliers in the supply chain. The activities included in the eight processes include all the aspects involved in managing an organisation, which is also an indication of the importance of all of the functional areas being involved in the implementation of the processes in the framework (Lambert et al., 2008:308).

In contrast, the scope of the SCOR model is limited. As stated in the SCOR literature, “SCOR does not attempt to describe every business process or activity. Specifically, the Model does not address: sales and marketing (demand generation), product development, R&D, and some elements of post-delivery customer support” (Supply Chain Council, 2010). The activities that are included are those related to the forward and backward movement of the products, and the planning required to efficiently and effectively manage these flows (Lambert et al., 2008:308).
3.4.4 Cross-Functional Involvement

SCOR and GSCF are similar in that they both advocate cross-functional involvement and recognise that business processes will not replace corporate functions. However, the number of corporate functions included in each framework and the type of cross-functional involvement also differ (Lambert et al., 2008:309).

Because the GSCF framework affects all aspects of an organisation, it is critical that each process team includes representation from all the major organisational functions, including but not limited to, marketing, production, finance, procurement, and logistics. Team members provide their functional expertise and ensure that the decisions taken in the strategic sub-processes are the best ones for the organisation. In organisations with a strong 'functional silo' orientation, it is often difficult for management to establish cooperative cross-functional teams that can bring together the necessary functional expertise to successfully develop and implement innovative solutions for the supply chain. Top management has to commit to the vision and reward team activities to achieve the cross-functional involvement necessary for the GSCF framework to be implemented (Lambert et al., 2008:309).

In the case of SCOR, the crossfunctional involvement is pursued primarily within three functions: logistics, production, and purchasing. By focusing on a limited number of functions that are usually integrated within an organisational structure, the SCOR framework can be implemented relatively easier. The trade-off to the simplification of implementing the model through and within a limited number of areas is that the management of an organisation is attempting to manage the supply chain without input from marketing, finance, and R&D (Lambert et al., 2008:309). While the latest iteration of the SCOR model at the time of the study, SCOR 10.0, includes risk management, human resource descriptions, skills requirements, and extensive supply chain metrics that cover both effectiveness and efficiency criteria, it does not address or gather input from critical functions including marketing, finance, and R&D (Supply Chain Council, 2010). This limited functional involvement can yield suboptimal performance, and even result in failed initiatives (Lambert et al., 2008:309).
3.4.5 Process and Performance Benchmarking

The SCOR model allows for extensive benchmarking to take place as a result of the detailed processes and practices contained within the framework. Two types of benchmarking are considered in the literature, performance, and process benchmarking. Performance benchmarking relates to learning how competitors or organisations in comparable industries are performing on key operational metrics such as inventory turns or fill-rates, while process benchmarking, termed best practice analysis in the SCOR model, is concerned with providing the specific details enabling the duplication of best practices (Lambert et al., 2008:309). The SCC, the organisation that leads the development of the SCOR model, provides a source of data and information compiled by its members, which is in a format that allows for performance benchmarking to take place. The best practice analysis allows for benchmarking to take place and includes tools that can be used in order to increase the performance of the organisation's supply chain operations, when used in conjunction with the data provided by the SCC (Lambert et al., 2008:309).

To perform process benchmarking using GSCF, management must rely on the assessment tools provided in the framework to compile data that can be compared with measures and data that are commonly compiled within organisations, such as EVA. GSCF does not provide the same level of detail of processes and best practices as found in the SCOR model, as the sub-processes and activities found within the GSCF framework require the formulation of organisation and supply chain specific strategies and cross-functional involvement to determine their final composition. This approach does not facilitate benchmarking to the extent of the SCOR model, neither is there a central repository of comparable data that can be used for the purposes of benchmarking. The GSCF framework contains a detailed section on assessment tools that are designed to enable the evaluation of an organisation's current best practices in terms of the supply chain processes contained in the framework, and to identify opportunities for improvement (Lambert et al., 2008:312). However, the organisation will have to rely on improving on its own measured performance, as opposed to benchmarking extensively through the use of the GSCF framework.
3.4.6 Value Creation

Value can be created in four ways: by increasing revenue, reducing operating costs, reducing working capital, and increasing asset efficiency. The two frameworks use different approaches when measuring how the efforts of supply chain management can be used to create value (Lambert et al., 2008:312).

In the GSCF framework, operational measures are linked to the EVA that the organisation creates, and to profitability reports for key customers and suppliers, and segments of customers and suppliers. Central to the successful implementation of the GSCF framework is the identification of the financial implications of decisions and actions taken by the organisation's internal functions, and those of its customers and suppliers. This approach enables the development of profitability reports that provide information about the contribution that each key customer and supplier in the supply chain makes to the organisation, as well as the contribution that the organisation makes to its key customers and suppliers. The GSCF framework is designed to identify the financial implications of decisions and actions taken in the supply chain by closely managing relationships with key suppliers and customers, and measuring cost reduction and asset utilisation (Lambert et al., 2008:312).

As the focus of the SCOR model is operational efficiency and effectiveness, the drivers of value creation are focused on cost reductions and asset utilisation. This operational focus simplifies the measurement of the benefits derived by the application of the model. It is easier to calculate how much cost has been saved by a particular program within a specific process than to estimate how a broader management approach has had been beneficial, such as how a segment of customers have responded to a service improvement, a new marketing effort, or a new product, and the impact that the particular program such as GSCF had on those initiatives. In addition, cost reductions will yield large savings when inefficiencies are present in the supply chain, however, when efficiency levels are high within existing supply chain configurations, incremental improvements will be smaller. While increasing the effectiveness of the organisation's supply chain operations may have an indirect effect on revenue generation through improved customer service, the SCOR model does not directly link this performance to integrated processes or
profitability reports and broad measures such as EVA. Thus, organisations with lower levels of efficiency may find larger and immediate benefits from the implementation of SCOR, while those that have achieved high levels of internal efficiency will find more value focusing on managing relationships outside the organisation, as prescribed in the GSCF framework (Lambert et al., 2008:313).

3.5 Strengths and Weaknesses of the SCOR and GSCF Frameworks

Each framework has its strengths and weaknesses, and outlining them further enables the relevance and suitability of the respective frameworks as the basis of an organisation's supply chain management efforts to be determined.

The GSCF framework is very broad in scope, since all business functions are involved and a broader set of activities is included than the SCOR framework. The breadth of the framework is a strength, because it increases the opportunities for supply chain management to create value. In addition, the GSCF framework provides a mechanism for considering revenue generation, rather than focusing primarily on cost-reductions. However, the breadth of the framework provides some implementation challenges. The management of an organisation may still view supply chain management as a function that has grown out of logistics or procurement, and as such may find it difficult to accept the encompassing scope of supply chain management as is indicated in the framework. The breadth of the framework also makes it difficult to implement on a limited or small-scale basis because all of the organisational functions are involved, and linkages and interaction exists among the processes found in the framework. If the management of an organisation approaches the implementation of the framework by focusing on individual processes in isolation, sub-optimisation may occur because the other processes are not in place, and integration between the activities found in the processes cannot be fully developed. It may also be difficult to manage the processes contained in the framework across organisations if key customers and suppliers are opposed to a process orientation, and/or are not committed to providing the resources required for cross-functional teams (Lambert et al., 2005:38).
While the full potential of the value that can be created by the implementation of the processes cannot be achieved without including customers and suppliers in the implementation, it is possible to improve the performance of the organisation by implementing a limited range of activities and cross functional integration internally before implementing the full framework (Lambert et al., 2005:38).

The breadth of the GSCF framework can also be measured by the extent of cross-functional involvement in the management of the supply chain. As the framework covers all aspects of the business, it is critical that all business functions are involved, including marketing, finance, and R&D, in addition to the functions typically involved in functioning of the supply chain, such as operations and logistics. Effective inter-company connectedness requires successful intra-company integration in order to align organisation-wide resources with the corporate strategy and adherence to customers' requirements. This cross-functional involvement requires a significant level of management commitment and a change in the measurement and compensation system for the implementation of the framework to be successful. While it is widely recognised that 'functional silos' are problematic for organisations and lead to sub-optimisation, establishing working cross-functional teams can be difficult to accomplish as a result of functional executives viewing the implementation of cross-functional teams to manage processes as an erosion of their power (Lambert et al., 2005:38).

The SCOR framework focuses on activities in the purchasing, logistics, and manufacturing functional areas. This increases the probability that the implementation of SCOR within an organisation would be successful, since in many organisations those functional areas are likely to be integrated within the corporate structure and will often report to an individual manager. However, the trade-off is that the organisation is attempting to manage the supply chain without critical input from marketing, finance, and R&D. This limited functional involvement may result in lower levels of performance and failed initiatives as a result of a lack of information sharing, decision-making involvement, inter-functional integration, and organisation-wide understanding and acceptance of the supply chain initiative being undertaken (Lambert et al., 2005:38).
If an organisation is pursuing a market orientation, the GSCF framework is better positioned to ensure all of its resources are aligned to enable the collection and communication of customer requirements and market intelligence and allow for appropriate responses to be formulated. This capability is based on the breadth of the scope of the framework, in terms of activities, functional involvement, the integration of processes with customers, specific activities orientated to formally collecting and disseminating customer requirements, and its use of corporate strategy as a strategic driver. In order for management to achieve a market orientation, it must focus on customer requirements, and focus its efforts on meeting those requirements, particularly for key customers and customer segments. To achieve these goals, a broad set of organisational activities must be coordinated across all of the relevant functional areas. Ultimately, the corporate strategy should drive supply chain activities, as the supply chain activities enable the organisation to meet customer requirements. These are characteristics which are inherently part of the GSCF framework that enable the organisation to effectively respond to the needs of the market (Lambert et al., 2005:39).

SCOR’s lack of explicit connections between functional and corporate strategies has the potential to lead to the organisation-wide misalignment of resources. Management pursuing the implementation of SCOR with an objective of having the framework providing the broadest impact, should focus on positioning SCOR within the overall corporate strategy in order to align resources and objectives, and prioritise implementation initiatives that result from the use of the framework. However, since the framework does not outline how the alignment with the corporate strategy is to be implemented, it is left to the management of an organisation to decide how this alignment will take place. On the other hand, the history of the implementation of Collaborative Planning, Forecasting and Replenishment (CPFR) shows that the same management technique, such as SCOR, implemented variously as a functional solution or a strategic tool may produce different results (Lambert et al., 2005:39).

The benchmarking tools contained in the SCOR framework provide value for its users by allowing organisations to benchmark their performance against that of their competitors or organisations in comparable industries on a number of key operational metrics, such as inventory turns or order fill-rates, while process benchmarking,
referred to as best-practice analysis, is concerned with applying best practices within processes and activities. To provide assistance with performance benchmarking, the SCC, the organisation that leads the development of SCOR, provides a source of data and information compiled by its members. The list of best practices offered by the SCC that are included in the framework allow for best practice analysis to take place, in line with the focus of SCOR on improving transactional efficiency and effectiveness in the supply chain, such as available-to-promise, backhaul trading exchange, continuous improvement, activity-based costing, and supplier certification programmes among others (Lambert et al., 2005:39; Supply Chain Council, 2010).

SCOR is a useful tool for identifying areas of potential improvement, which allows an organisation to achieve cost reductions, increased asset utilisation, and greater operational effectiveness within a short time period. Identifying these opportunities is possible because the SCOR framework involves a narrower focus by functions that are more easily integrated, and because the focus is on process effectiveness, cost reduction and asset utilisation, as opposed to broader measures of supply chain effectiveness and EVA. For many organisations, opportunities exist to make transactional process improvements that may be achieved via SCOR’s implementation (Lambert et al., 2005:40).

The GSCF framework is more strategic, as it focuses on increasing long-term shareholder value through closer inter-organisational relationships with key members of the supply chain. The commercial environment that tends to favour the implementation of the GSCF framework is that in which the capability to identify, build, and maintain relationships in the supply chain among organisations is considered to be a competitive advantage. In many organisations, management has begun to realise the importance of intangibles in the marketing of products, and that to succeed, integration, collaboration, and on-going relationships in the supply chain are required, which enable the organisation to differentiate itself in a particular industry (Lambert et al., 2005:40).
3.6 Conclusion

In this chapter, the two supply chain management frameworks with the widest industry acceptance and the largest amount of content and detail which allowed for their description and analysis were described and compared. The two frameworks that met these criteria were developed by the GSCF and the SCC. Both of the frameworks that were analysed acknowledge that the supply chain is a network of independent organisations, the scope of which includes original suppliers to end customers, and both are based on the implementation of cross-functional business processes. However, the approach to the implementation of business processes within the organisation and with customers and suppliers in the supply chain prescribed by SCOR and GSCF differ, and they represent distinct ways of organising and executing the supply chain management efforts of an organisation (Lambert et al., 2005:41).

The GSCF framework incorporates all of the organisational functions in each of the eight supply chain management processes through a cross-functional team approach, as described in the framework. The framework starts with analysing and understanding the corporate strategy of the organisation and the functional strategy pertaining to a specific process, such as the marketing, procurement, or manufacturing strategy, and connects the operational and supply chain aspects of the organisation to those strategies. The key processes for linking the organisation with other organisations in the supply chain are customer relationship management and supplier relationship management, which are identified as key processes in the GSCF framework. The focus on these processes indicates the relationship orientation of the framework. In the GSCF framework, process metrics are related to EVA, which is created through the broad interaction of activities within an organisation (Lambert et al., 2005:41).

The SCOR framework integrates aspects of purchasing, operations, and logistics in its five supply chain management processes. SCOR does not include a broader range of functions such as marketing, finance or R&D, which may make implementation more straightforward, but limit the scope of the framework. SCOR focuses on transactional efficiency and effectiveness, and the establishment of a
common terminology, metrics, and defined processes rather than the establishment of relationships with customers and suppliers in the supply chain. However, SCOR does include benchmarking data that can be used to improve operational performance (Lambert et al., 2005:41).

While the GSCF and SCOR frameworks both focus on the implementation of cross-functional processes in the supply chain, the GSCF framework is more inclusive, since all business functions are involved and a broader set of activities is included. In addition, the GSCF framework provides a mechanism for considering revenue generation, rather than just focusing on cost reductions (Lambert et al., 2008:313).

The GSCF framework was identified as being more strategic than the SCOR framework with the focus on increasing long-term shareholder value, which is achieved by developing closer cross-functional relationships in the supply chain. The GSCF framework is broad in scope, as it increases the opportunities for supply chain management to create value by having an impact in a greater number of functional and inter-organisational areas. It provides the basis for greater cross-functional integration since the framework's processes include all the major functional areas of the organisation, and is better positioned to co-ordinate and enable the dissemination of market intelligence and customer requirements, and enable suitable responses to these, given the breadth of activities, functional involvement, and its use of corporate strategy as a driver (Lambert et al., 2005:38).

The SCOR framework has an operational focus, with performance attributes related to the efficiency and effectiveness with which goods are procured, transformed, and distributed in the supply chain, while at the same time creating the basis for the common understanding of standardised tasks and processes between customers and suppliers in the supply chain. The detailed description of performance metrics, processes, best practices, and skills definition provides a framework for management to organise their organisation's operations in a manner that recognises the interaction and interdependency of processes, both within the organisation and between organisations in the supply chain, in order to achieve maximum efficiency and effectiveness in transactional exchanges. The SCOR framework can thus be said to focus on achieving operational excellence by providing a model for organising the
operations of the organisation within the context of the broader supply chain, which are based on the accumulated experiences and input of the various member organisations of the SCC.

In the GSCF framework process metrics are related to EVA (Lambert et. al., 2005:41). Economic value is created when net operating profit, after taxes, exceeds the cost of capital employed in an organisation. The value of an organisation can be increased by increasing revenue, reducing operating costs, reducing working capital, and increasing capital efficiency (Stock & Lambert, 2001:677). As a result, the GSCF framework focuses on creating value in a number of different areas and not on one particular area such as operational efficiency or common terminology in the supply chain, as is the case with the SCOR framework (Lambert, et al., 2005:37).

The GSCF framework provides a model on how to integrate the logistics, operational, financial, marketing and sales, and R&D functions of the organisation, in order to achieve efficiency and effectiveness in the flow of goods and information in the supply chain. Most importantly, by establishing collaborative arrangements and joint task teams, the framework creates focus on generating value by managing the goods and information flow across traditional functional areas, and between organisations by leveraging the collective expertise, learning, and knowledge of the different organisational functions and key customers and suppliers in the supply chain. The integration of processes in the supply chain allow high level financial benefits to be reaped, benefits that go above and beyond those that would be possible by an organisation working in isolation.

Given this description and comparison of the GSCF and SCOR frameworks, namely that the SCOR framework focuses on creating operational excellence within the context of the supply chain, and the GSCF framework provides a model for generating significant benefits by strategically managing inter-organisational collaborative processes in the supply chain, there may be a benefit in organisations utilising both frameworks simultaneously. The SCOR framework could be utilised to provide best practice operational processes with built in performance measures, best practices, skills requirements, and process descriptions, with the opportunity to benchmark performance based on data provided by the SCC, in order to achieve
excellence in operational execution by maximising efficiency and effectiveness in the
movement and transformation of goods in the supply chain. The GSCF framework
could be utilised to establish the inter-organisational processes, provide the basis for
collaboration and integration in the supply chain, and manage the supply chain in a
manner that allows an organisation to achieve its strategic corporate objectives and
maximise EVA.

However, the GSCF framework is ultimately the supply chain management
framework best suited for analysing the supply chain management practices of an
organisation as per the primary objective of this study, by virtue of its scope, explicit
prescription of collaboration and integration, description of inter-organisational
processes, leveraging of supply chain wide learning and knowledge, the achievement
of corporate objectives, and creation of EVA as its primary aims.

Therefore, the GSCF framework will be used and applied to a leading confectionery
manufacturer, with the aim of conducting an in-depth analysis and benchmarking its
supply chain management practices.
CHAPTER 4

THE SOUTH AFRICAN CONFECTIONERY INDUSTRY

The purpose of this chapter is to describe the characteristics of the South African confectionery industry in order to provide the context within which the study is conducted. Specific industry-related and manufacturer-specific statistics will be discussed to provide further context. This chapter will also provide detailed information regarding the operating and competitive conditions that are prevalent in the industry, as these relate directly to the study objective of enabling a competitive advantage to be established through the implementation of supply chain management. The characteristics of the suppliers and customers of the manufacturers in the industry will be described, as the dynamics of these relationships play an important role within the scope of supply chain management.

The annual Datamonitor/Marketline industry reports have been used as the basis of the research on the industry contained in this chapter, as they represented the only complete and detailed published information on the South African confectionery industry that the researcher could find. These reports are published by Datamonitor, and more recently Marketline, in the form of uncommissioned, annual reports on the industry. Datamonitor and Marketline are both owned by the publishing and conference company Informa. Informa publishes academic and commercial information in the form of books, journals, databases, news and research (http://www.informa.com/What-we-do/). The researcher's own knowledge and direct observation of the industry further inform the analysis and description of the industry.

4.1 Industry Characteristics

4.1.1 Market Definition

The confectionery market consists of chocolate, gum, cereal bars, and sugar confectionery products (hereafter referred to as products). The confectionery
industry in South Africa (hereafter referred to as the industry) for the purposes of the study includes all the South African-based manufacturers that produce finished confectionery products, as categorised above, and market those products in South Africa (Datamonitor, 2010a:7).

4.1.2 Industry Statistics

The value of confectionery products sold in the South African market totalled ZAR 9.709 billion in 2011, (valued according to retail selling price) and grew at a rate of 3.7% on the previous year (Marketline, 2012:8). The volume of product sold in the market totalled 125.7 million kilograms, and grew at a rate of 2.4% from the previous year (Marketline, 2012:9).

4.1.3 Product Category Market Segmentation

As has been stated, the product categories that exist in the industry are chocolate, sugar confectionery, cereal bars, and gum. Chocolate product sales form the largest segment in the industry, accounting for 44% of the overall revenues in the market. The other product categories, as a share of market revenue, are as follows: sugar confectionery 38.9%, cereal bars 8.8%, and gum 8.3% (Marketline, 2012:10).

4.1.4 Producer Market Share

The largest producers in the industry by value, accounting for 62.6% of the revenues in the South African market, with associated market share are Kraft Foods 36.1%, Nestlé 13.5%, Tiger Brands 13.0%, and Kellogg Company 3.3%. SME manufacturers, agents, and distributors marketing imported products control the balance of the market share, accounting for 34.1% (Marketline, 2012:13).
4.1.5 Market Distribution

On the distribution side of the industry, independent retailers and supermarkets/hypermarkets account for the largest percentage of market share by value, with a combined 72.4% share. The respective market shares of the various distribution channels are as follows: independent retailers 37.8%, supermarkets/hypermarkets 36.4%, convenience stores 11.7%, specialist retailers 4.4%, other 9.6% (Marketline, 2012:13).

4.2 The Confectionery Supply Chain in South Africa

Large volumes of physical raw materials are utilised in the production of confectionery products, and large volumes of confectionery products are produced and require distribution to the market. For distribution to take place, the storage, movement, and handling of goods are required throughout the supply chain. This necessitates the use of storage facilities and a transportation infrastructure, the management of goods and materials flows within manufacturing and storage facilities, and the management of goods flows between organisations in the supply chain.

A large number of key raw materials, such as cocoa products, sugar, glucose, and chemical products and additives, among others, require importation from sources of supply that are located outside South Africa (Datamonitor, 2009:16).

As confectionery manufacturers are the focus of the study, they will be taken as the focal organisations in the supply chain.

The South African confectionery industry supply chain is structured as follows:
At the first level and upstream from the confectionery manufacturers are the primary producers that cultivate or produce the raw materials that are used in the manufacture of confectionery products. The primary producers produce agricultural products such as sugar, cocoa beans, and their derivatives – cocoa butter, cocoa liquor, or cocoa powder, and nuts. These primary producers are predominately located in Cote d'Ivoire, Ghana, Indonesia, and Brazil (Datamonitor, 2009:16). Primary producers also produce chemical products such as glucose, citric acid, colouring, flavouring, whey powder, and caramel, which are used in the manufacture of confectionery products. Included at this level of the supply chain are the producers of paper pulp and plastics, which are used in the packaging of the final confectionery products.

At the second level, upstream from the confectionery manufacturers, are the distributors of the raw materials that are used in the manufacture of the products. These include traders who import raw materials, distributors that import and distribute wholesale volumes of chemical raw materials, and distributors of locally produced raw materials. Raw materials used in the manufacture of commodity products are bought on commodity markets, and confectionery companies have little control over supplier prices (Datamonitor, 2009:16).
At the third level of the supply chain are the manufacturers and distributors of the products. The locally based manufacturers are Kraft Foods, Nestlé, and Tiger Brands, which are the three largest manufacturers in the South African market, and SMEs (Datamonitor, 2009:12). The three largest manufacturers focus predominantly on the manufacture of chocolate products, with SMEs and distributors focusing on the marketing of sugar confectionery products. Distributors import and market products with established brands, as well as lower priced products from countries such as Brazil, Colombia, Malaysia, China, and Turkey.

The fourth level, downstream from the manufacturers in the supply chain, comprises wholesale stores that break-bulk and provide assortment to resellers, and distributors that are supplied directly by manufacturers and distribute products to resellers. Included in this level are national supermarket chains and hypermarkets that are directly supplied by the manufacturers.

At the fifth level are independent retailers that provide assortment and sell confectionery products directly to consumers. Retail stores specialising in the sale of confectionery products sell whole packs of product to resellers, such as petrol station forecourts and convenience stores, vending machine operators, as well as school tuck shops and hawkers/street vendors conducting informal trade. These channels are also supplied by wholesale stores (Datamonitor, 2009:29).

4.3 The Structure of the South African Confectionery Industry

The Marketline report states that in 2011, the majority of the share of the confectionery market is split among Kraft Foods, Nestlé, Tiger Brands, Kellogg Company and others. The market share collectively controlled by these manufacturers is 62.6%.
The market share of the respective manufacturers is as follows:

<table>
<thead>
<tr>
<th>South African confectionery market share: % share, by value, 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kraft Foods, Inc.</td>
</tr>
<tr>
<td>Nestlé S.A.</td>
</tr>
<tr>
<td>Tiger Brands Limited</td>
</tr>
<tr>
<td>Kellogg Company</td>
</tr>
<tr>
<td>Others</td>
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<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

Table 4.1: South African confectionery producer market share in 2011
Source: Marketline (2012:12)

4.3.1 Kraft Foods, Inc.

In February 2010, Kraft Foods acquired Cadbury plc., a global manufacturer of confectionery products. In South Africa, the company operates through its subsidiary Kraft Foods South Africa (Pty) Ltd (Datamonitor, 2010a:22).

Kraft Foods is one of the world's largest food manufacturing companies. It manufactures and markets packaged food products. The company's products include snacks, beverages, cheese, convenience meals, and various packaged grocery products. Kraft has operations in more than 70 countries, with 159 manufacturing and processing facilities worldwide, and sells its products in approximately 160 countries across the globe. The company employs 97 000 personnel and its headquarters are in Northfield, Illinois, USA.

4.3.2 Nestlé S.A.

Nestlé, the holding company of the Nestlé Group, is engaged in the business of manufacturing and marketing branded food and beverages. Nestlé operates in
Europe, the Americas, Asia, Oceania, and Africa. Nestlé operates through a wholly owned subsidiary in the South African market (Datamonitor, 2010a:26). Nestlé operates through eight divisions that are organised along product groups. These include: powdered and liquid beverages; water; milk products and ice cream; nutrition; prepared dishes and cooking aids (frozen products, soups, bouillons, sauces and culinary preparations, pasta and sauces, noodles, delicatessen products and cold meat); confectionery; pet care; and pharmaceutical products (Datamonitor, 2010a:26).

Nestlé’s procurement activities are conducted at three levels: global, regional, and local. Nestlé procures materials broadly in line with the manufacturing and marketing strategy for products within the countries and regions in which it operates. A majority of Nestlé’s purchases are from the regional markets, given the focus on the production of food products, while fresh agricultural products are sourced from the local markets (Datamonitor, 2010a:26).

4.3.3 Tiger Brands Limited

Tiger Brands is a food and healthcare company that produces and sells food products, consumer healthcare products, pharmaceutical products, fishing products, and other similar consumer products in Africa and the Americas. It employs about 8,900 personnel and its headquarters are in Bryanston, South Africa (Datamonitor, 2010a:31).

The company has four reporting divisions: domestic foods, home and personal care (HPC), international operations and exports and fishing.

The domestic foods division is a leading manufacturer, distributor, and marketer of major food brands. The HPC division is engaged in the manufacture, distribution, and marketing of personal care, baby care, and home care brands. The fishing division involves deep-sea fishing, fresh fish and frozen fish processing, and marketing. It also handles cold storage operations (Datamonitor, 2010a:31).
Tiger Brands’ confectionery products are manufactured and marketed by its Beacon Sweets and Chocolates subsidiary.

4.4 Forces Driving Competition in the Confectionery Industry in South Africa

The key buyers in the market are retailers, and key suppliers are cocoa farmers and other raw material producers. The market has a vast range of different products, differentiated both by their inherent characteristics and by investments in branding and marketing. The vast range of brands available, as well as the variances which exist between products regarding quality and price, means that the power of buyers in the market to dictate trade terms is prevented from becoming disproportionately strong in relation to manufacturers (Datamonitor, 2009:13).

The raw materials used in the manufacture of confectionery products, such as sugar, glucose, and cocoa products are bought on international commodity markets and as a result, manufacturers have little control over the price of those materials. However, price volatility can be controlled, and relatively favourable prevailing prices can be exploited by maintaining inventories and engaging in practices such as hedging. Furthermore, confectionery products are vulnerable to the threat of substitutes, such as savoury snacks and fresh fruits, due to low switching costs and consumption patterns in different geographies (Datamonitor, 2009:14).

The industry can be analysed according to Porter’s Five Forces analysis: buyer power, supplier power, new entrants, the threat of substitutes, and the degree of rivalry between confectionery manufacturers (Datamonitor, 2009:13).

4.4.1 Buyer Power

The food retail industry in South Africa is concentrated, with supermarket chains controlling a significant share of the market. As a result, supermarket chains are able to negotiate from a strong position on trade and price terms with confectionery
manufacturers. However, confectionery manufacturers can introduce a degree of product differentiation, which allows a number of their products to serve unique segments of the consumer market, such as sugar-free products that are targeted at diabetes patients. Along with the inherent differences, such as taste, ingredients, and product features etc., between products, manufacturers invest in advertising to build brand identities (Datamonitor, 2009:15).

Retailers need to respond to consumer demand, and the presence of product differentiation and brand loyalty generated by the marketing activities of the confectionery manufacturers leads to a weakening of the retailers' buying power in the market. However, retailers offer a wide assortment of foods, which increases buyer power. Confectionery manufacturers and retailers generally operate within very different businesses, with little likelihood of vertical supply chain integration. Overall the buyer power is considered to be moderate (Datamonitor, 2009:15).

The drivers of buyer power in the South African confectionery market are the low cost of switching to different confectionery suppliers, relatively undifferentiated product, the tendency of retailers to switch between suppliers, price sensitivity, financial power, and buyer independence, which is the strongest driver of buyer power (Datamonitor, 2009:15).

4.4.2 Supplier Power

The key inputs for confectionery manufacturers are raw materials such as sugar and cocoa beans and their derivatives (cocoa butter, cocoa liquor, or cocoa powder). Suppliers to the confectionery manufacturers are cocoa farmers and producers of other raw materials including sugar, glucose, whey powder, caramel, and colourants and flavourants. Cocoa products are differentiated to some extent, and are sold in different grades. Most of the cocoa-based raw material is sourced from countries such as Cote d'Ivoire, Ghana, Indonesia, and Brazil, among others (Datamonitor, 2009:16).
Furthermore, supply from other producers from the Far East, West Africa, and South American equatorial regions, and existing inventories within South Africa provide an adequate supply buffer. Manufacturers may also choose to adopt fair trade procurement policies, which ensure that cocoa farmers receive a fair price for their products, depending on manufacturers’ ethical policies (Datamonitor, 2009:16).

Raw materials are bought on commodity markets, and confectionery manufacturers have little control over the cost of raw materials. Instead the purchasing of futures contracts on international commodity markets and the stockpiling of inventories by the manufacturers reduces the impact of price fluctuations on the cost of raw materials. Overall, the power of suppliers is considered to be moderate (Datamonitor, 2009:16).

The drivers of supplier power in the South African confectionery industry are supplier size, oligopoly threat, switching costs, supplier independence, the lack of substitutable inputs, and the importance of the quality and cost of key inputs (Datamonitor, 2009:16).

4.4.3 New Entrants into the Confectionery Industry

In order to establish manufacturing operations within the South African confectionery industry, relatively large amounts of capital expenditure are required to establish manufacturing facilities, as most confectionery products are mass-marketed and must be manufactured in significant volumes to be profitable. However, it is also possible for new entrants to enter the market on a small scale by manufacturing high value products on a limited scale through a craft process (Datamonitor, 2009:17).

In addition to smaller craft-based producers entering the market and competing within specialised product categories, there is also the threat of entry posed by private labels that are marketed by supermarket chains that use their existing brand and marketing and logistics infrastructure to provide similar and cheaper alternatives to confectionery manufactures’ brands. However, these products are only stocked in the retailers own stores, and lack the brand recognition of established brands marketed
by the confectionery manufacturers. The strength of existing brands engenders
loyalty from consumers, which makes it difficult for new manufacturers seeking to
enter the market to convince the retail chains and independent retailers to add new
products to their existing assortment of goods (Datamonitor, 2009:17).

New entrants also need to consider the challenges involved in establishing supply
chain infrastructure required to produce and distribute the confectionery products
within South Africa. Overall, there is a moderate likelihood of new entrants
(Datamonitor, 2009:17).

The factors influencing the likelihood of new entrants in the confectionery market in
South Africa are the low cost of retailers switching supplier, relatively undifferentiated
products, the relative unimportance of scale of operations, low fixed costs, little
regulation, the acquiescence of the incumbent manufacturers, accessibility to
suppliers and raw materials, the small amount of intellectual property that is required
to produce confectionery products, and the growth rate of the market (Datamonitor,
2009:17).

4.4.4 Substitutes

Confectionery products are typically purchased by consumers as snack food. The
substitutes for confectionery products are therefore similar snack foods such as
savoury snacks, biscuits, ice-cream, dried fruit, and fresh fruit (Datamonitor,
2009:18).

For retailers, the substitutes have some disadvantages in terms of inventory
management: snacks such as potato chips and maize puffs require more shelf space
per item than do confectionery products, such as chocolate bars. Fresh fruit is
perishable and typically requires expensive temperature controlled displays and
storage areas to avoid wastage (Datamonitor, 2009:18).

The increasing publicity focused on the health hazards that are linked to poor dietary
lifestyles associated with the consumption of confectionery products may influence
consumers’ decision-making preferences, leading them to purchase more health-conscious alternatives, such as fruit. For most food retailers, the switching costs of consumers making health conscious purchasing decisions are negligible, as they will usually sell both confectionery products and the healthier substitutes. Furthermore, some forms of confectionery are purchased by consumers as luxury or gift items, rather than as snack foods. In these cases the substitutes are more varied, and may include gift items of similar value. Overall the threat of substitutes is deemed to be moderate (Datamonitor, 2009:18).

The factors influencing the threat of substitutes in the South African confectionery market are the low cost of switching for consumers, health beneficial alternatives (such as fruit), and cheaper alternatives (such as savoury snacks) (Datamonitor, 2009:18).

4.4.5 Rivalry

The South African confectionery market is concentrated, with the top three manufacturers, namely Kraft Foods, Nestlé, and Tiger Brands, controlling 62.6% of the total market by value. The remaining 37.4% of the market is controlled by SME manufacturers, and agents and distributors marketing imported brands (Marketline, 2012:12). While the top manufacturers control a large portion of the market, a number of SME manufacturers and distributors are able to compete with the top manufacturers within certain product categories, such as sugar confectionery, and in geographical areas where consumers have lower spending power, and standards of living, purchasing behaviour, and needs differ from those which exist in urban areas (Datamonitor, 2009:19).

The threat from supermarkets’ private labels and brands marketed by SME manufacturers offering cheaper alternatives, where the focus is drawn away from branding, has become a greater competitive threat during the economic downturn of 2008-2010, as consumers have become more price-conscious (Datamonitor, 2009:19).
By differentiating products through inherent characteristics, investment in well-known brands and a national distribution network, the top manufacturers are able to maintain their market share relative to SME manufacturers and distributors of foreign products. The competitive rivalry is greater among the three large manufacturers, given the similarity of their customers and products, as well as their use of automated, high volume manufacturing where capacity increases are easy to implement, and fixed costs are high. Overall, there is a moderate degree of rivalry in the market (Datamonitor, 2009:19).

The drivers of rivalry in the confectionery market are: the number of manufacturers and distributors, the low cost of switching between suppliers for retailers and consumers, undifferentiated products, ease of expansion, difficulty of exiting the market because of large capital investments, the lack of diversity in product offerings, the similarity of the manufacturers, storage costs which encourage manufacturers to move product to retailers, and competitor size (Datamonitor, 2009:19).

4.5 Contingency Factors for the Implementation of Supply Chain Management in the South African Confectionery Industry

Kotzab & Otto (2004) identified a number of contingency factors for managing a set of sequentially, inter-dependent order-linked factors, which a supply chain comprising a number of organisations with common goods and information flows represents. They are power and size of the company, relevance of speed and perishability of a product, relative importance of logistics costs, length of the chain, tightness of coupling between echelons, proximity to the final customer, degree of environmental uncertainty, and chances of creating a strategic group. The above contingency factors will be discussed, with specific reference to the conditions prevalent in the South African confectionery industry.
4.5.1 Power and Size of the Company

Achieving collaborative behaviour is central to supply chain management, as it forms the basis of integration in the supply chain and the joint management of goods flows and information sharing between organisations. Power is a precondition for inducing any increases in cooperation from channel partners, as it is unlikely that a relatively small organisation with little marketing channel power will be effective in implementing a supply chain management program (Kotzab & Otto, 2004:344).

The large confectionery manufacturers in the industry, namely Nestlé, Beacon Sweets, and Cadbury, are part of larger organisations that manufacture and market a wide range of food products in addition to confectionery products.

The Nestlé confectionery division forms part of Nestlé South Africa, which is a subsidiary of Nestlé S.A. based in Switzerland. In addition to the confectionery products Nestlé also markets the following products: coffee, chocolate-based and malted drinks, bottled water, fruit juices, breakfast cereals, infant food products, ice cream, yoghurt, desserts, noodles, nutritionally enriched foods and drinks, pet care products, and pharmaceutical products under a wide range of brand names (Datamonitor, 2011:23).

Beacon Sweets and Chocolates is part of Tiger Brands Limited's domestic foods division. Tiger Brands markets the following products in addition to confectionery products: groceries, snacks, grains, beverages, processed meats, canned fish products, marine foods, recipes, baking, edible oils, baby care products, personal care products, and home care products under a wide variety of brand names (Datamonitor, 2010a:12).

Cadbury plc. was acquired by Kraft Foods in February 2010, with the local operations of Cadbury becoming part of Kraft Foods South Africa (Pty) Ltd (Datamonitor, 2010b:22; Merced & Nicholson, 2010). Kraft Foods markets the following products in addition to confectionery: coffee, powdered beverages, packaged juice drinks, cookies, crackers, salted snacks, natural cheese, processed cheese, creamed cheese, dressings, condiments, desserts, processed meats, packaged dinners, and lunch combinations under a wide variety of brand names (Datamonitor, 2010b:18).
As a result of the wide range of products and established brands marketed by the large manufacturers, their power and size in the supply chain would allow them to induce cooperation from downstream members of the supply chain, particularly with independent retailers. The power of the manufacturers to induce cooperation from the supermarket and hypermarket chains is somewhat reduced, as a result of the supermarket chains’ inherent power in the supply chain, and their proximity to final consumers. However, this power is offset by the wide range of products that the manufacturers produce, the scale of their operations, and the brand equity that their products have with consumers as a result of widespread marketing activities.

4.5.2 Relevance of Speed and Perishability of the Product

With the shortening of product life–cycles, and the focus on reducing investment in inventory holdings, the order cycle lead-time has become a key measure within the supply chain environment, particularly for technology, fashion, and perishable goods supply chains (Kotzab & Otto, 2004:344).

Within the confectionery industry, confectionery products are food products that are sensitive to heat, moisture, and excessive handling. The products have a shelf-life of several months and are mostly produced locally, thereby avoiding a three to four week period of ocean transit time. The products do not have a short product life-cycle, with established brands and ingredients remaining consistent. Periodic introductions of new products take place; these are typically extensions of existing brands. However, this occurs as a result of broadening the product offerings by the manufacturers, and not as a result of recipes becoming obsolete. As a result, the perishability of the product, while it may affect the physical properties of the product if handled incorrectly, would not be a significant contingency factor for driving the management of the confectionery supply chain.
4.5.3 Relative Importance of Logistics Costs

If economic activities are divided into two broad categories of activities and linkages as proposed by Porter (1985), supply chain management has a particular focus on linkages, as is evidenced by the central role of integration. The relative influence on linkage management on the profitability of an organisation, or the margin it can earn from its value chain activities, differs between industries. Therefore, supply chain management will be viewed as important in those industries with a relatively high percentage of linkage or logistics costs, such as retailing (Kotzab & Otto, 2004:344).

In the confectionery industry, logistics costs would be relatively high as a result of the global nature of the production of the key ingredients that constitute the recipes for the products, namely cocoa, sugar, glucose, chemical additives, flavourants, and colourants. The sourcing and importation of these materials from geographically dispersed locations would incur significant logistics costs. The physical nature of the product, which is mass produced and requires storage and transportation to retail outlets, and requires semi-controlled environments to prevent deterioration, and the volume of product being manufactured and marketed, 119.5 million kilograms in 2009 (Datamonitor, 2010a:2), would also result in logistics costs forming a significant component of the overall costs for manufacturers in the distribution of the products. This results in the logistics costs assuming relative importance, and can be viewed as a driver of supply chain management in the industry, as they represent a significant opportunity to achieve efficiencies and cost reduction.

4.5.4 Length of the Chain

If the value chain for a particular product consists of only one or a few activities, as would be the case in consulting or engineering services, supply chain management would be less relevant than value chains that are long and include a large number of participants (Kotzab & Otto, 2004:344).

The South African confectionery industry includes a large number of participants. The primary raw materials used in the production of confectionery products, including
cocoa, glucose, sugar, and chemical additives, are sourced from international commodity markets and require importation into South Africa. This would imply primary producers, regional markets and consolidation areas, commodity traders, sea- and air-freight forwarders, carriers, and customs clearing agents. In the case of foreign manufactured finished goods, the sourcing of raw materials takes place, manufacturing occurs, and the finished products are imported into South Africa by distributors or locally appointed agents. Raw materials are imported into the country, either by the manufacturers themselves or by local distributors who supply the manufacturers. Manufacturers sell the products onto wholesalers or retail chains. In the case of wholesalers, the products may also be bought by independent retailers or street vendors, who then sell the products on to the consumers.

The South African confectionery industry supply chain is thus long and complex. The length, number of participants, international nature of raw materials, finished goods markets, the physical nature and volume of the product, and disintegrated distribution to independent retailers makes the application of supply chain management in the confectionery industry particularly relevant.

4.5.5 Tightness of Coupling between the Echelons

Supply chain management principles can be used to design and maintain a supply chain. However, these principles will not be useful if the nodes in the supply chain are relatively fixed or permanent. This is particularly relevant in industries where there is little opportunity for rearranging the relationships between nodes and different tiers in the supply chain, as a result of long-term fixed investment in facilities or sources of supply, based on the location of primary raw materials that do not allow changes in the relationship to be made beyond the initial configuring of the system. On the other hand, in supply chains where the sources of supply, manufacturing locations, and the location of market participants and customers are numerous and widespread, dynamic and ever-changing, the coupling between the echelons will be loose, and the utility derived from the application of supply chain management principles will be high (Kotzab & Otto, 2004:344).
4.5.6 Proximity to Final Customer

The position of the focal organisation in the supply chain will determine the extent to which supply chain management principles are adopted, given the increase in demands placed on the supply chain as the product reaches the finished goods stage and its proximity to final distributors and customers (Kotzab & Otto, 2004:344).

In the case of the confectionery manufacturers, they produce final products that are supplied to retail chains and independent retailers, who represent the final customer of the products before they are purchased by consumers. The challenges of distributing finished products to disparate independent retailers and adhering to the procedures and requirements of national retail chains, places considerable demands on the confectionery manufacturers. Thus, there is a greater likelihood that supply chain management principles will be adopted, given the demands that must be met in the supply chain.

4.5.7 Degree of Environmental Uncertainty

Inter-organisational integration and collaboration can be seen as mechanisms to reduce uncertainty, through the sharing of information that allows for more accurate forecasts and knowledge of the plans of other organisations in the supply chain, including key customers and suppliers. Therefore, in a highly uncertain environment, supply chain management acts as a mechanism for reducing uncertainty, and is desirable for members of the supply chain as it can reduce uncertainty of supply, goods demand volume, diversity, and volatility (Kotzab & Otto, 2004:344).

In the confectionery industry, demand is driven by the purchasing decisions of individual consumers. The choices of individual consumers are affected by a wide range of macro-economic, personal preference, and lifestyle choice factors. Individual consumers are also disparate, and their purchases are not necessarily planned or consistent. Given the nature of the product, being essentially FMCG, consumers do not communicate the nature or timing of their future purchases to retailers. These combined factors contribute to an uncertain demand environment in
the supply chain. The application of supply chain management in the confectionery industry can thus act as a mechanism for reducing uncertainty, through the sharing of information and creating visibility of demand, as it is recorded by the retailers. Given the reliance on forecasts on the part of manufacturers, in the absence of specific and certain demand in the market, the access to information and visibility of downstream activity in the supply chain can act as a powerful mechanism for reducing uncertainty in future demand volumes and diversity, and reduce the volatility of supply in the supply chain.

4.5.8 Probability of Creating a Strategic Group

Implementing supply chain management in practise requires a substantial amount of collaboration among the organisations in the supply chain, which requires a common strategic orientation and a strategic grouping of organisations. Johnson (1999) described a set of criteria to evaluate the possibility of creating a strategic grouping in the supply chain, being a mutual dependence between the organisations, the duration of the relationship between the organisations, expectations of continuity of the relationships, the flexibility of the organisations regarding strategies and activities, and the level of uncertainty in the environment prevalent within a market or an industry (Kotzab & Otto, 2004:344).

In the confectionery industry, a mutual dependence exists between the manufacturers and the independent retailers in particular, as a result of the market share that the independent retailers control, and the brand strength and recognition of the dominant manufacturers' products. As many of the independent retailers predominantly sell confectionery and snack products, the manufacturers' products constitute a large part of the goods that they stock and merchandise. In the case of the national retail chains, the degree of mutual dependence is less, as a result of the wide assortment of products that they stock and merchandise. However, the consumer demand that the manufacturers' brands and marketing efforts create in the market, compels the retail chains to stock the manufacturers' products, thus creating a degree of mutual dependence. In general, the manufacturers depend on the retailers to distribute, merchandise, and provide assortment to individual consumers.
The structure of the confectionery industry has remained relatively unchanged, as with those of the FMCG industry in general, and the relationship between buyers and suppliers is an on-going one, which creates the basis for forming strategic arrangements. The members of the confectionery supply chain are relatively flexible, in that distribution networks and arrangements can be adapted through the use of third-party logistics (3PL) service providers, and IT infrastructure. Systems can be developed and utilised to share information and create visibility, and merchandising and supply arrangements can be changed to suit new operating structures. The uncertainty of the environment that exists with regard to demand, volumes, new products, and the variability of supply and demand, creates the basis for the development of a strategic grouping.

4.6 Conclusion

The South African confectionery industry is a competitive industry with dynamic consumer-led demand and two predominant channels of distribution: independent retailers and supermarket chains. The challenges that the industry forces bring about constantly require South African manufacturers to find ways of maintaining market share and ensuring they remain competitive in the face of relatively cheap imported products, and new entrants to the market who are motivated by the relative ease of entry.

The nature of the confectionery products, being FMCGs, requires logistics and distribution systems that can handle, store and transport large volumes of physical goods, both on the upstream part of the supply chain, in the form of raw materials that require importation, and on the downstream part of the supply chain, in the form of finished confectionery products. The management of these goods flows and the decisions concerning the positioning of inventories must be made.

The contingency factors identified by Kotzab and Otto (2004), as analysed in the specific context of the confectionery industry, indicate that the prevailing conditions within the industry are favourable for the integration of inter-organisational processes and information flows. This provides the basis for the implementation of supply chain
management, as described in the GSCF framework, through the integration of the eight supply chain management processes.

Supply chain management presents a significant opportunity for the confectionery manufacturers to respond to the competition prevalent in the market, and to find optimal configurations for the supply chain in handling and transporting raw materials and physical goods. The sharing of information between retailers and the manufacturers also presents an opportunity to react to changes in demand at the store level, which will allow the manufactures to manage demand and ensure that manufacturing operations are producing to demand.
CHAPTER 5

RESEARCH DESIGN AND METHODOLOGY

The purpose of this chapter is to outline and describe the research design and methodology of the study. The research approach and the research instrument to be used to conduct the analysis of the respondent organisation's supply chain practices will also be discussed.

5.1 Research Design

The study aims to identify and critically analyse the state of supply chain management practices in a leading manufacturer in the South African confectionery industry. Given the extent of inter-organisational rivalry in the confectionery industry, the entry of emerging market competitors into traditionally stable and secure markets, and the slow economic growth in many economies, the need for manufacturers within the South African confectionery industry to be competitive has become particularly pertinent. Through the literature review, the study thus aims to illustrate the role of supply chain management in creating competitive advantage for organisations. The study then aims to identify, analyse, evaluate, and compare the supply chain management frameworks that exist, which can guide the implementation of supply chain management in practice. The study then aims to utilise the framework identified as best suited to identifying supply chain management best practices to identify and critically analyse the state of supply chain management within a leading manufacturer within the South African confectionery industry, and provide a case study of the findings.
5.1.1 Objectives of the Study

Primary objective:

- to apply an international supply chain management best practice framework, in order to identify and critically analyse the state of supply chain management practices in a leading manufacturer in the South African confectionery industry.

Secondary objectives:

- to illustrate the role of supply chain management in creating competitive advantage for organisations;

- to identify, in the context of the study, an appropriate best practice supply chain management framework that can be applied to the study of the supply chain management practices of a leading South African confectionery manufacturer; and

- to provide a detailed description and analysis of the structure, market characteristics, and competitive conditions prevalent in the South African confectionery industry.

5.1.2 Research Theory

As discussed in Chapter 1 and Chapter 4, the South African confectionery industry experiences a moderate to high level of competition, as a result of inter-organisational rivalry driven by similarity in products and end customers, low switching costs for customers, undifferentiated products, ease of expansion, similarity of the manufacturers, storage costs which encourage manufacturers to move product to retailers, and competitor size, as well as the competition created by imported products produced by low-cost competitors in foreign emerging markets.
According to the GSCF definition of supply chain management, the integration of key business processes across the supply chain represents the implementation and operationalisation of supply chain management in practice. As such, the existence of an integrated business process based approach as described in the GSCF framework (Lambert et al., 2008) are direct indicators of the extent to which supply chain management is operational in practice.

As has been discussed in Chapter 3, the broad nature of supply chain management and its influence over key functional areas, the role it plays in value creation, the opportunity to leverage inter-organisational collaboration and integration and the resultant advantages which it generates, positions supply chain management to be a critical enabler of competitive advantage, both for individual organisations, as well as groups of integrated organisations in the supply chain.

Therefore, the nature of, and the extent to which the business processes described in the GSCF framework are found to be in operation in a leading South African confectionery manufacturer, will indicate the current state of supply chain management within that manufacturer. It will also provide limited comprehension of the state of supply chain management in the South African confectionery industry, and provide insight into the areas in which advancements can be made in the supply chain environment, which can result in South African confectionery manufacturers increasing their competitiveness.

### 5.1.3 Conceptualisation

A number of concepts are referred to in the design of the research. This section serves to define these concepts for the purposes of the study.

**5.1.3.1 Supply Chain Management**

For the purpose of the survey, the operative definition of supply chain management as described in Chapter 2 is the definition proposed by the GSCF:
“The integration of key business processes from end user through original suppliers that provides products, services and information that add value for customers and other stakeholders” (Lambert et al., 1998:1).

5.1.3.2 Competitive Advantage

As discussed in Chapter 2, competitive advantage is a situation in which an organisation creates superior value for its customers through offering lower prices than competitors are, or providing products with unique benefits that more than offset a higher price. Additionally, competitive advantage is created by creating resource advantages, dynamic capabilities, and relational capabilities, which enables an organisation to exceed the performance of their competitors, and ultimately, achieve above average profitability within its industry.

5.1.4 Research Approach

The case study method was chosen to conduct the study, which is described and motivated in the following sections.

5.1.4.1 Case Study Methodology

According to Yin (2003:13), case study research is defined as “an empirical enquiry that investigates a contemporary phenomenon within its real life context, especially when the boundaries between the phenomenon and context are not clearly evident”. He further states that “The case study enquiry copes with the technically distinctive situation in which there will be more variables of interest than data points, and as one result, relies on multiple sources of evidence, with data needing to converge in a triangular fashion, and as another result, benefits from the prior development of theoretical propositions to guide data collection and analysis”.

The case study methodology, as a research strategy, comprises a comprehensive approach, including the logic of the design of the research, how data is collected, and
specific approaches to the analysis of the data that has been collected (Yin, 2003:14).

The case study approach is based on the decision to approach a research project in a specific way that is not limited by prescribed methods, as is the case with quantitative research methods. Many of the features which are an inherent part of the case study approach are found in survey and experimental research, and are therefore not necessarily unique to this strategy (Denscombe, 1998:30). However, when all the features of case study research are brought together, they form a broad approach to social research, with an underlying rationale for the direction and planning of an investigation that differentiates it from the rationale for survey research or experimental research (Denscombe, 1998:30).

The features that distinguish case study research from survey or experimental research are as follows:

- **Spotlight on one instance**: The defining characteristic of case study research is its focus on just one instance of the phenomenon or subject that is being investigated. The central concept of a case study is to focus on individual instances of a social activity that is taking place, rather than a broad range of activities or events. Therefore, the case study approach is the opposite of a study that aims to cover as broad a range of social phenomena as possible. The focus on a single case allows for specific insights that may have broader implications to be gained that would not have otherwise been identified if many instances of the phenomena been researched in less detail (Denscombe, 1998:30).

- **In-depth study**: The case study approach allows the researcher to gain unique and valuable insights into the topic of interest, as a result of focusing the research effort on only one or a few instances. This provides a researcher the opportunity to pursue a far more detailed investigation into the phenomena being researched and discover insights that may not become apparent through a more superficial research approach (Denscombe, 1998:30).
- Focus on relationships and processes: Relationships and processes within social settings tend to be inter-connected and interrelated. To understand one element, it is necessary to understand many others, and crucially, how the various parts are linked. The case study approach allows a greater opportunity than survey research to go into sufficient detail to analyse and describe the complexities of the subject being researched. The case study approach allows for a case to be comprehensively investigated, and thus allow for an understanding of how the different elements of a specific subject or phenomena interact with one another. Case studies therefore follow a holistic approach, rather than focusing on a number of isolated factors. Case studies emphasise the detailed workings of relationships and social processes, rather than the outcomes of these processes. While outcomes and results remain relevant, the value of case study research is in explaining why certain outcomes occur (Denscombe, 1998:31).

- Natural setting: The case that forms the basis of the investigation is usually something that already exists, and is not a situation that is artificially created specifically for the purposes of the research. It does not involve the imposition of controls on variables so that the impact of specific elements can be measured. The case is thus a naturally occurring phenomenon that exists prior to the research project, and that continues to exist once the research is completed (Denscombe, 1998:31).

- Multiple sources and multiple methods: The case study approach allows the researcher to use a variety of sources, types of data, and research methods as part of the investigation. Observations of events within the case study setting can be combined with the collection of information from a survey, interviews, and published material, or any other methods that are deemed as being appropriate for investigating the relationships and processes that are inherent to the subject or phenomena being investigated (Denscombe, 1998:31).
Denscombe (1998:32) further explains that case study research is a matter of research strategy, not research methods. As such, case study research allows for a number of research methods to be employed in the conduct of the research.

Within this study, a number of research methods have been utilised to conduct the research; observations on the functioning of the industry in the form of visits and discussions with retail and distribution outlets in the industry, research of available published information on the industry, and then, the utilisation of a best practice framework assessment tool to comprehensively determine the current state of supply chain management in a major confectionery manufacturer.

Therefore, the case study method will be used to achieve the objectives of the study, as it allows for holistic and meaningful characteristics of an individual organisation to be identified and understood within a real-life context through the observation of complex social phenomena within the context of contemporary events.

5.1.4.2 Qualitative Evaluation

The research instrument used to conduct the primary research in the study is the GSCF assessment tool which is contained in the publication *Supply Chain Management: Processes, Partnership, Performance* (Lambert et al., 2008). An extract from the assessment tool is contained in the Annexure. It will be used to identify, describe, and analyse the functioning of the respondents supply chain management activities through a qualitative approach. As described by Babbie and Mouton (2008:53), the qualitative paradigm as a research approach that takes its departure point as the insider perspective on social action, with the goal of describing and understanding human action, as opposed to the explanation and prediction of human behaviour. The emphasis of qualitative research is on methods of analysis and observation that are closely associated with the research subject, with the aim of developing an in-depth description and understanding of events. Qualitative research follows an inductive approach, resulting in the generation of new hypotheses and theories, and therefore is exploratory in nature.
5.1.5 Applicability of the Findings

A common criticism levelled against case study research is that the findings of the research cannot be generalised to a broader population, given the lack of statistical sampling in the selection of respondents, as well as the focus on a few cases or instances within a larger population (Denscombe, 1998:36; Yin, 2003:10).

The extent to which findings from a case study can be generalised to others in the broader population depends on the extent to which the subjects of the case study have characteristics that are common to others in the population, and the extent to which the environment and context in which they exist are common. Ultimately, the extent to which the subject of the case study is similar to others of its type within the broader group or population will determine the ability to generalise the findings of the case study. Although each case is unique in some aspects, it is also a single example of a broader class of subjects.

As described in 5.1.4.1, the aim of case study research is to provide an in depth description and understanding of events and phenomena as they exist within their natural environment. As such, the aim of the research is not to provide a finding that is a generalisation that applies to all the individual organisations within the population, but rather, the aim is to provide a detailed description of the functioning of one organisation that can provide other organisations with an insight on the state and functioning of supply chain management within the respondent organisation, and potentially, how supply chain management can implemented in practice within the South African confectionery industry. The applicability of the findings of the research is based on the high level of correlation in the characteristics of manufacturers within the South African confectionery industry, as well as the environment in which they operate.

5.1.6 The Research Population

The group that is the subject of the study is the confectionery manufacturers that have manufacturing facilities and operations within the Republic of South Africa.
Confectionery manufacturers are those manufacturers who produce chocolate, sugar confectionery, cereal bars, and gum products. The South African confectionery market is concentrated, with the top three manufacturers, namely Kraft Foods, Nestlé, and Tiger Brands controlling 62.6% of the total market by value. The three named manufacturers also have a critical mass of operations, with combined revenue of ZAR 6.078 billion in annual revenue in the confectionery market. The Kellogg Company has a 3.3% share of the market (Marketline, 2012:12).

The remaining 34.1% market share of the industry is controlled by SMEs that are numerous, fragmented, and geographically widespread, and do not have large-scale and critical mass of operations, and agents and distributors that market imported products.

5.1.7 Sampling Methodology

The three large manufacturers are similar in their operations and organisational characteristics. They are large, multinational food and FMCG manufacturers, as Beacon Sweets and Chocolates is part of Tiger Brands Ltd., and Cadbury is part of Kraft Foods. Confectionery is part of the product range of Nestlé S.A.

Cadbury, Nestlé, and Beacon Sweets and Chocolates have large operations with organisational structures that allow for strategic relationships to be formed with national retailers and supermarket chains, due to the importance of the retailers and supermarkets as customers, and the product and brand awareness of the manufacturers products in the consumer market that lead the retailers and supermarket chains to stock the products. The volume of confectionery products being sold through independent retailers and supermarkets/hypermarkets (74.2% in 2011) provides a strong driver for high-level interaction between the manufacturers, retailers, and supermarket chains.

The criteria for the selection of a respondent to the study are therefore as follows: size of the organisation, ability to implement strategic business processes, ability to integrate with national supermarket chains and key retailers, and the willingness to
participate in the study and provide the access to their staff and information to conduct the GSCF assessment tool. Therefore, the sampling method is a purposive sample based on the accessibility of information.

The organisation chosen to be the subject of the investigation and critical analysis of the GSCF assessment tool is one of these organisations. However, the identity of the organisation will be kept anonymous. The reason for maintaining the anonymity of the organisation is based on the intrusiveness of the assessment tool into the practices of the organisation, and the detailed findings of the assessment that will be presented, which may prejudice the organisation in the market, particularly in relation to customers and suppliers. The level of competition prevalent in the industry also creates the need for anonymity, so as not to prejudice the organisation through the exposure of its practices within a specific context.

5.1.8 Characteristics of the Respondent Organisation

The respondent organisation is a public multinational organisation that manufactures FMCG food products. It has a global headquarters based outside South Africa. The organisation has an established local subsidiary within the South African market, which performs the full range of organisation functions locally, such as sales and marketing, development of products and packaging sizes for the local market, supply chain management, logistics, finance, legal compliance, procurement, and manufacturing. The local subsidiary applies the policies and procedures established by the organisation’s headquarters, but it also has a great deal of autonomy to develop and implement practices within the local market.

Its customers include all the major retail chains, such as Shoprite-Checkers, Pick n Pay, Spar, Woolworths, retailers such as Massmart, and independent retailers and distributors. It markets well-known and established brands.

The local subsidiary has a well-developed supply chain function, which is structured according to functional areas that are headed by a senior manager, and all report to the Supply Chain Director. The areas that form part of the supply chain function are
as follows: Customer Relationship Management, Customer Service, Logistics and Order Fulfilment, Supply and Demand Planning, Procurement, and Reverse Logistics.

The individual respondents to the GSCF assessment tool were the heads of the functional areas that are responsible for managing and developing practices and meeting the organisational objectives that pertain to their respective areas.

5.1.9 Research Instrument Design

The research instrument that was utilised to identify and critically analyse the state of supply chain management of the respondent organisation was taken directly from the assessment tool found in the Appendices A-H of the book *Supply Chain Management: Processes, Partnerships, Performance Third Edition*, edited by Lambert (2008), an extract of which is contained in the Annexure. The book describes in detail the GSCF’s framework for supply chain management, and the business processes and sub-processes, which together constitute the framework.

The assessment tool is designed to identify opportunities in the business processes that each organisation manages, as described in the framework. The questions found in the framework highlight the important aspects of the strategic and operational sub-processes within each business process, and are described in the book as a tool that management can use to identify process strengths and weaknesses, and then drive focus on the efforts of management in those areas where improvement efforts will derive the most benefits.

The assessment tool ultimately indicates the extent to which the business processes found in the framework are in operation within the organisations being assessed. As the GSCF framework definition of supply chain management is predicated on the existence of integrated business processes, the results of the questions in the assessment tools will indicate the current state of the business process as defined in the framework, and by the definition, the state of supply chain management within the respondent organisation.
The GSCF framework assessment tool is based on the self-assessment approach, which has been popularised by quality awards such as the Deming Prize and Malcolm Baldrige National Quality Award in the United States. Self-assessment is defined as a comprehensive, systematic, and regular review of an organisation’s activities and results compared to a model of business excellence. When implementing a framework such as the GSCF framework, self-assessment allows management to identify the organisation’s capabilities and areas where potential improvements can be made (Lambert et al., 2008:314).

The assessment tool was designed to provide the management of an organisation with information pertaining to the state of their supply chain management practices as described in the framework, in addition to performing the following functions (Lambert et al., 2008:314):

- measuring and targeting improvements related to GSCF framework implementation;
- highlighting best practices with respect to the management of successful relationships and implementation of the supply chain management processes;
- providing strategic direction for implementing the GSCF framework;
- making inter-divisional comparisons for each business process;
- facilitating the integration of supply chain management principles into other business practices; and
- fostering learning of the GSCF framework within the organisation.

The GSCF framework assessment tool is comprised of a number of questions that cover the critical aspects of each business process as found in the GSCF framework.

Each question in the assessment tool comprises a score assigned to the question being posed, based on a five-point scale, the importance of the issue being raised in the question for the organisation, an open-ended justification of the score, and importance assigned to each question. The survey also allows for the respondents to indicate that they do not know the answer to a question.
The score assigned to each item is structured as follows:

1: You agree with the statement written in column 1.
2: You believe the organisation is somewhere between the statements columns 1 and 3.
3: You agree with the statement written in column 3.
4: You believe the organisation is somewhere between the statements in columns 3 and 5.
5: You agree with the statement written in column 5.

The scale includes descriptions for scores 1, 3, and 5. Intermediate columns are included to accommodate ratings that fall between the scale points. In cases where the respondent is not sure how to score the item, the 'Don't Know' answer is recorded.

The importance of an item is assessed on a three-point scale:

- Critical: Item is essential for the success of the process within the organisation.
- Important: Item is important but not essential for the success of the process within the organisation.
- Minor Importance: Item is of minor importance for the success of the process within the organisation.

Respondents are then requested to justify their score and the importance rating assigned to the item being assessed, which requires the respondents to provide a qualitative explanation.

The focus of the assessment will be on the strategic sub-processes of the GSCF framework, given the strategic nature of the objectives of the study. Determining the existence of strategic processes in practice is based on the relevance and ability of an organisation to establish strategic business processes with their key customers and partners in the supply chain. The implementation of operational sub-processes
would also occur within the framework established by the decisions made in the implementation of the strategic sub-processes.

5.2 Research Process

The respondent organisation was contacted, and the purpose and objectives of the study were explained to the Customer Supply Chain Manager within the supply chain function of the organisation. After the initial meeting had taken place, the Customer Supply Chain Manager referred the researcher to other respondents for the respective supply chain management processes based on the discussion of the supply chain management processes as they are described in the framework. At the organisation, the assessment tool was applied through the conduct of a series of face-to-face interviews with the functional head whose area was closest aligned to each supply chain management process identified in the framework. Each supply chain management process was defined and described, and the strategic sub-processes were explained before the assessment with the respective respondents took place. Key terms within the framework, and the context of those terms, were also explained. The structure and design of the assessment tool were explained in terms of the statement that most resembles the organisation's current practice, the importance ascribed by the respondent to the activity described, and a justification in the form of a specific explanation and examples of the organisation's current practices to support the answer provided. The researcher explained the statements in the assessment tool to ensure that the questions and possible answers were understood. The researcher ensured that the answers that the respondents provided were valid and accurate by requesting a justification for each response, and cross-referencing responses from previous questions to test for consistency. The researcher's involvement ensured that adequate consideration of the questions took place before responses were provided.

All of the responses were recorded on an exact copy of the assessment tool drawn up by the researcher in an electronic document. An extract of the assessment tool can be found in the Annexure.
5.2.1 Analysis and Presentation of the Findings

Once the assessment tool findings had been carried out for each of the strategic sub-processes within the eight supply chain management processes, the researcher critically analysed the findings of the assessment. The researcher then described the findings in detail, by indicating the responses to the organisation’s practices, the importance ascribed by the respondent to the respective activities, the justifications for the responses provided, and indicated where a respondent considered an activity to be important or critically important, yet the activity in question was not being carried out according to the best practice according to the framework. General observations that were noted during the research process were also recorded. The findings of the assessment process are the subject of Chapter 6: Case Study Findings.

5.3 Conclusion

The research objective of the study is to utilise a best practice supply chain management framework to identify and critically analyse the state of supply chain management within a major South African confectionery manufacturer and to provide a case study of the findings. As per the findings in the preceding chapters, the GSCF framework was identified as the supply chain management framework most suited to the conduct of the study by virtue of its scope, explicit prescription of collaboration and integration, description of inter-organisational processes, leveraging of supply chain wide learning and knowledge, the achievement of corporate objectives, and creation of EVA as its primary aims.

The case study method was chosen as the research approach to achieve the objectives of the study, as it allows for holistic and meaningful characteristics of an individual organisation to be identified and understood within a real-life context through the observation of complex social phenomena within the context of contemporary events.
The findings of the case study have some general applicability due to the high level of correlation in the characteristics of the major manufacturers within the South African confectionery industry, as well as the environment in which they operate. More importantly, the findings of the case study provide an example for other South African confectionery manufacturers to implement supply chain management in practice. The tool used to conduct the research is the GSCF framework assessment tool, which is structured to identify the current practices of the organisation in relation to those contained in the framework.

The findings of the assessment and the observations of the researcher are the subject of Chapter 6: Case Study Findings.
CHAPTER 6

CASE STUDY FINDINGS

The purpose of this chapter is to present the findings of the assessment done on the respondent confectionery manufacturing organisation (hereafter referred to as the organisation), as per the research design and methodology as discussed in Chapter 5.

6.1 Assessment Approach

As discussed in Chapter 5, the GSCF assessment tool was utilised in a number of face-to-face interviews at the respondent organisation's premises. The approach followed was to explain the purpose of the study to a senior manager in the supply chain function of the organisation's South African subsidiary, who then guided the researcher in selecting respondents for the various processes stipulated in the assessment tool. Responses for each process in the assessment tool were provided by a functional head, with the content of each process broadly corresponding to the role and responsibility of the functional head. Where other departments' activities formed part of the scope of the assessment tool, responses could be provided by the respective functional heads, as the respondent organisation groups all the activities described in the GSCF framework into its supply chain department. The exception to this was new product development and commercialisation, which is carried out by a separate department, with input from the supply chain function. The responses for the product development and commercialisation process were provided by a representative from that separate department who was responsible for the renovation and maintenance of confectionery products.

The statements describing each activity within the assessment tool were posed to the respective respondents, with the statement best describing the current state of that activity being indicated. The respondents were then asked to provide a justification for each response provided, as well as their view on the importance of each activity.
The respondents to the assessment tool were functional heads of departments, reporting to the Supply Chain Director of the organisation, as indicated below.

<table>
<thead>
<tr>
<th>GSCF Supply Chain Management Process</th>
<th>Title of Respondent Interviewed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer Relationship Management Process</td>
<td>Customer Supply Chain Manager</td>
</tr>
<tr>
<td>Supplier Relationship Management Process</td>
<td>Head of Procurement: Southern Africa</td>
</tr>
<tr>
<td>Demand Management Process</td>
<td>Head of Demand and Supply Planning</td>
</tr>
<tr>
<td>Order Fulfilment Process</td>
<td>Regional Distribution Centre Manager</td>
</tr>
<tr>
<td>Manufacturing Flow Management Process</td>
<td>Head of Demand and Supply Planning</td>
</tr>
<tr>
<td>Product Development and Commercialisation Process</td>
<td>Innovation and Renovation Manager for Chocolate Business Unit</td>
</tr>
<tr>
<td>Returns Management Process</td>
<td>Claims, Returns and Refusals Manager</td>
</tr>
</tbody>
</table>

Table 6.1: Respondent titles per supply chain management process

As discussed in Chapter 5, the GSCF assessment tool is divided into a series of statements pertaining to the activities within the sub-processes of each supply chain process. The respondents to the assessment indicated answers on a scale of one to five for each question, in line with the current state of the activity within the organisation. The respondent's view of the importance of the activity was noted, as well as a worded justification of the view taken of the current state of the activity within each sub-process.
The definition of each specific GSCF supply chain process, and the strategic subprocesses, and key terms within the framework were explained to each respondent to ensure their understanding prior to the discussion of the assessment tool. Discussion and questioning took place between the researcher and the respective respondents to ascertain the validity and accuracy of the responses provided, and to ensure that the activities within the assessment tool were fully understood. The responses that were provided apply to the organisation's practices across all its product lines and business units, and not only to its confectionery business unit.

6.2 Assessment Findings

The following sections will cover the details of the assessment findings. The findings will be presented for each process separately, as per the structure of the assessment tool contained in the Annexure. The findings on the organisation's practices as described by the respondents in relation to each activity found within each respective process and sub-process of the framework will be presented per section. Within each section, the importance ascribed by the respondents to each activity will then be indicated, as per the importance scale within the framework. Discrepancies were identified between the state of supply chain management process activities and the importance ascribed to them by the respondents. These discrepancies were noted where a score of three or below was achieved for an activity, but the respondent indicated that the activity as being important or critically important. These discrepancies will be highlighted. The average score achieved per strategic sub-process will also be indicated. This is calculated as an average of the scores achieved for all the activities of which a sub-process is comprised. The scores were all out of a maximum rating of 5, with 5 denoting best practice. A table summarising the average scores per sub-process can be found under section 6.3.

Each supply chain management process found in the GSCF framework was discussed in detail in Chapter 3. The S-1, S-2, S-3 etc. numbering convention is taken from the assessment tool, and is maintained in order to allow the findings per sub-process to be linked back to discussion of each process.
6.2.1 Customer Relationship Management Process

S-1 Review Corporate and Marketing Strategy

The organisation has both a corporate and marketing strategy, and the influence of both on the customer relationship management process has been examined. The importance of having a corporate strategy and understanding its influence on the customer relationship management process were viewed as being critical, with the strategy aiming to ensure the organisation is a preferred supplier and to engage customers with clear and open communication. Having a marketing strategy and understanding its influence on the customer relationship management process was viewed as being important, with the interrelatedness of the two ensuring that the influence of the marketing strategy on the customer relationship management process was examined.

Understanding how the corporate strategy influences the customer relationship management process was considered to be critically important. Understanding how the marketing strategy influences the Customer Relationship Management process was considered to be important. The average score achieved for the activities forming part of this sub-process was 4.

S-2 Identify Criteria for Segmenting Customers

Key criteria for segmenting customers within business segments were identified, with critical importance being placed on this activity. The criteria used to segment customers are profitability, volume of goods purchased, and buying behaviour.

Identifying criteria for segmenting customers was considered to be important by the respondents. The score achieved for this sub-process was 5.
S-3 Provide Guidelines for the Degree of Customisation in Product and Service Agreements

Business relationships with customers are documented through formal PSAs, with terms of trade, pricing, delivery arrangements, returns policies, period of validity, and volumes contained therein. Formal investigations are done of the revenue/cost implications of the various customisation alternatives in the customer PSAs. Customer teams are provided with formal documentation detailing the nature, degree, and boundaries of customisation allowed in customer PSAs. The respondent viewed all of the activities pertaining to providing guidelines for the degree of customisation in PSAs as critical.

All of the activities within the Provide Guidelines for the Degree of Customisation in PSAs sub-process were considered to be critically important. The average score achieved for the activities forming part of this sub-process was 5.

S-4 Develop a Framework of Metrics

Formal customer relationship management metrics exist, which are related to financial performance, being profitability and growth. Having these metrics in place is viewed as being important. Formal performance goals exist relating to customer relationship management. Targets for profitability and growth are set for specific customers and customer segments. All performance measurement data that is compiled is discussed internally and with customers on a regular basis. The organisation has the ability to measure customer profitability on a revenue-minus-avoidable costs basis, as actual costs are measured and calculated. The organisation has the ability to measure its impact on customer profitability, as customers provide profitability reports and share relevant financial information.

There are groups of functions whose metrics are aligned, but there are some conflicts between the groups that hinder the performance of the customer relationship management process. Metrics are aligned with financial metrics, including working capital and stock cover. Personnel throughout the organisation, as well as key suppliers and customers understand how their decisions and actions affect the
customer relationship management process, however understanding can be improved. Formal meetings and reports are used to create understanding.

Having formal performance goals, the capability to measure customer profitability, the capability to measure the organisation's impact on customer profitability, achieving alignment with other metrics used throughout the organisation, and personnel throughout the organisation, as well as key customers and suppliers understanding how their decisions and actions affect the customer relationship management process were viewed as being critically important. However, there were groups of functions whose metrics are aligned, but there are some conflicts between the groups. The average score achieved for the activities forming part of this sub-process was 4.3.

**S-5 Develop Guidelines for Sharing Process Improvement Benefits with Customers**

Formal guidelines and documentation are in place that dictate how benefits from process improvements will be shared with customers. This is viewed as being critically important. The score achieved for this sub-process was 5.

**6.2.2 Supplier Relationship Management Process**

**S-1 Review Corporate, Marketing, Manufacturing, and Sourcing Strategies**

The organisation has a corporate strategy and how it influences the supplier relationship management process has been examined. The corporate strategy contains a vision of procurement that influences how procurement takes place. The organisation has a manufacturing strategy, but how the manufacturing strategy influences the supplier relationship management process has not been examined. A sourcing strategy exists, and its influence on the supplier relationship management process has been examined. The organisation has a marketing strategy, and its influence on the supplier relationship management process has been examined. The new product pipeline and the role of procurement in ensuring supply are understood.
The marketing strategy is visible to procurement, and the process of developing suppliers is informed by the marketing strategy.

All of the activities that form part of the Review Corporate, Marketing, Manufacturing and Sourcing Strategies sub-process were viewed as being critically important, with the exception of examining the influence of the manufacturing strategy on the supplier relationship management process, which was viewed as being important. The influence of the manufacturing strategy on the supplier relationship management strategy, however, had not been examined. The average score achieved for the activities forming part of this sub-process was 4.5.

S-2 Identify Criteria for Segmenting Suppliers

The key criteria for segmenting suppliers within business segments have been identified. The criteria used are the size of the supplier, the importance of the supplier to the organisation, and the number of suppliers available for a particular material.

Identifying criteria for segmenting suppliers was considered important. The score achieved for this sub-process was 5.

S-3 Provide Guidelines for the Degree of Customisation in the Product and Service Agreement

Product and service offerings are customised with some suppliers, but these agreements are not formally documented. There are no predetermined customisation alternatives for supplier PSAs. Supplier teams are provided with informal boundaries for the degree of customisation allowed in PSAs, and customisation of the agreements with suppliers are allowed within these formal boundaries.

Documenting business relationships with suppliers through formal PSAs, and having customisation alternatives for supplier PSAs, were considered to be of minor importance. Providing supplier teams with formal boundaries for the degree of customisation allowed in supplier PSAs was considered to be important, however, supplier teams were only provided with informal boundaries for the degree of
customisation. The average score achieved for the activities forming part of this sub-process was 2.

S-4 Develop a Framework of Metrics

Supplier relationship management metrics are linked to financial performance. Overall procurement profitability is measured, but it is not linked to EVA. There are formal performance goals relating to supplier relationship management that are communicated internally. The organisation does not have profitability divided by total cost reports by supplier. The organisation does not know what impact it has on a supplier's profitability outside of open book costing exercises. There are groups of functions whose metrics are aligned, but there are some conflicts within the groups.

Demand management and procurement are aligned, but working capital metrics and associated JIT delivery of material placing pressure on suppliers is seen as being an issue. The volatility of the environment and demand gives rise to conflict.

Personnel throughout the organisation, and key suppliers and customers, understand how their decisions and actions affect the supplier relationship management process. However, actions that are taken by certain customers have a counterproductive impact, as they deviate from agreed order quantities and delivery parameters, which then alters the planning of manufacturing, and thus procurement requirements.

Having profitability reports by supplier, and knowing what impact the organisation has on a supplier's profitability were considered important by the respondent, however, the organisation does not know what impact it has on the profitability of suppliers. Neither does it have the capability to measure a supplier's contribution to the organisation's profitability. Having formal performance goals relating to supplier relationship management, aligning supplier relationship management metrics with other metrics used throughout the organisation, and personnel throughout the organisation as well as key suppliers and customers understanding how their decisions and actions affect the supplier relationship management process, were considered to be critically important. However, the organisation does not communicate formal performance goals to suppliers, and it does not understand how
supplier relationship management metrics affect the organisation's EVA. There are groups of functions whose metrics are aligned, but there are some conflicts between the groups. The average score achieved for the activities forming part of this sub-process was 2.5.

**S-5 Develop Guidelines for Sharing Process Improvement Benefits with Suppliers**

How benefits for process improvements will be shared with suppliers is determined on a project-by-project basis, with no formal guidelines in place. This activity is considered to be important. However, the formal guidelines for how benefits from process improvements will be shared with suppliers are not used. The score achieved for this sub-process was 3.

**6.2.3 Customer Service Management Process**

**S-1 Develop Customer Service Strategy**

The customer service strategy is well communicated and executed throughout the organisation. The strategy forms part of the organisation's operations review, and is based on providing service to customers, consumers, and creating competitive advantage. The customer service strategy is posted on the organisation's intranet, visual displays, monitors installed at various company sites and offices, factories, and DCs.

The organisation has a clear understanding of customer service management staffing needs. There is a Customer Service Manpower Plan, which is used to plan staffing needs, and is based on an analysis of call volumes. Staffing actions are taken based on the Customer Service Manpower Plan. There is a clear understanding of the customer service deliverables required to fulfil PSAs for all accounts and segments of accounts. There are specific personnel posted to different major accounts, which are Makro, Shoprite, and Pick n Pay, as well as different segments, which are Wholesale, Medical, and Balance of Trade.
Different customer service measures are known for different customers and segments, and the process for each is known and documented in Standard Operating Procedures (SOPs). The organisation has formally defined triggers and signals of customer service issues with cross-functional input, and these are proactively updated. Exception reports are set up for specific criteria, including duplicated order lines, pricing misalignments, lack of vehicle capacity for distribution purposes, customer creditworthiness, notification of events that could affect delivery, and procedures for dealing with potential issues. Integration with, and input from other functions is seen as critical for defining triggers and signals of customer service issues.

All activities within the Develop Customer Service Strategy are seen as being critically important. The average score achieved for activities forming part of this sub-process was 5.

**S-2 Develop Response Procedures**

Consistent response procedures for customer service enquiries have been developed, and all customer service representatives have been trained to systematically follow them systematically. Specific procedures are in place, with nine or ten criteria for each scenario. Tools are used to log all customer enquiries, with procedures specifying consistency of data input, and lead-time within which enquiries must be closed. Refresher training is provided to customer service representatives every six months. Customer service enquiries are formally analysed to identify events that require a consistent response. The analysis is done on a monthly basis in the organisation's operations review, where different criteria for enquiries, the enquiry reason codes, and 'Not Applicable' generic reason code is analysed in order to identify new types of customer enquiries. There is a good understanding of the coordination required in the supply chain that is required to respond to various customer service events. Internally, a Key Performance Indicator (KPI) cascading exercise is conducted among various departments to support the customer service management goals and ensure coordination. Joint business planning with customers creates external coordination in the supply chain. A clear understanding exists of the external coordination that is required to respond to customer service events.
Information is available on contact people at customers for the resolution of queries, fact sheets, information, and the format of information that can be communicated to customers, how responses take place, and decisions required by customers in various customer service situations are understood and documented in SOP documents. Response procedures for a comprehensive set of customer service events are proactively determined, with each major customer and customer segment having its own response procedures. These procedures are developed proactively and adjusted as and when required.

All of the activities within the Develop Response Procedures sub-process were considered to be of critical importance. The average score achieved for the activities forming part of this sub-process was 4.6.

**S-3 Develop Infrastructure for Implementing Response Procedures**

Customer service event data is collected internally, but it is not proactively obtained from suppliers or customers. The order fill-rate, which is the key customer service measure in the organisation, is measured internally. Input from customers is derived from customer facing departments, but not collected directly from customers.

Mechanisms are in place for identifying and responding to some customer service events, prior to the customer being impacted. On the order fill-rate measure, issues are proactively identified and responded to through the monitoring of the order taking report and the service order fill analysis. Procedures for identifying issues proactively are in place, and a number of customer service personnel are based at the organisation's DCs to respond to issues before customers are impacted. Information systems are used appropriately to aid the information flow related to customer service management. The customer service process is a systems-based operation, with a Customer Service Management tool built into the organisation's enterprise resource planning (ERP) information system, which creates visibility on the status of processes, service failures, open undelivered orders, orders on exception, orders billed, and orders with missing information. The organisation has documented procedures that ensure consistent responses for each known or projected customer service issue. Procedures are documented as SOPs, with 23 such SOPs in place.
All of the activities in the Develop Infrastructure for Implementing Response Procedures sub-process were considered to be of critical importance. However, the organisation does not collect customer service event data from customers and suppliers. The average score achieved for the activities forming part of this sub-process was 4.25

**S-4 Develop a Framework of Metrics**

Formal customer service management metrics are in place that are related to financial performance, and include cost to service, revenue achieved through order fill-rate, claims, returns, and refusals. Formal performance goals relating to customer service management are in place and are communicated internally, but not to customers. Weekly and monthly reviews of one-page scorecards of specific metrics and goals take place, which includes order fill-rate, claims, returns and refusals, pallet efficiency, and forecast efficiency. Customer service management metrics are aligned with other metrics used throughout the organisation, although some KPIs may conflict. The order fill-rate measure is shared by multiple functions, and this creates alignment. Personnel in the organisation have a limited understanding of how their decisions and actions affect the customer service management process. The view of the respondent is that work is required in this area, as the level of understanding that is required is not consistent throughout the organisation. The master data used to make decisions is not the same throughout the organisation. Examples of limited understanding include the discontinuing of specific stock keeping units (SKUs), listing of case prices vs. shrink prices, and differences in pricing, which lead to customer complaints.

All of the activities within the Develop Framework of Metrics sub-process were considered to be critically important by the respondent, with the exception of having formal performance goals relating to customer service management that are communicated throughout the organisation and to customers, which was considered to only be important. However, performance goals are not communicated to customers, and personnel throughout the organisation. Key customers and suppliers also do not understand how their decisions and actions affect the customer service
management process. The average score achieved for activities forming part of this sub-process was 3.25.

6.2.4 Demand Management Process

S-1 Determine Demand Management Goals and Strategy

An understanding exists of the organisation's corporate strategy and how it affects the strategy for demand management. Bottlenecks have been identified within the supply chain, with the procurement and customer relationship management functions providing visibility. Visibility is also provided from the manufacturing facilities. Overall goals and priorities for the demand management process have been set with cross-functional involvement, and the involvement of customers. This process is facilitated through the customer relationship management function.

All of the activities within the Determine Demand Management Goals and Strategy sub-process were considered to be of critical importance. The average score achieved for activities forming part of this sub-process was 4.33.

S-2 Determine Forecasting Procedures

Forecasts are coordinated within the organisation so that different functional areas' planning is based on the same numbers and assumptions. Formal agreement and approval is sought from all relevant functions and departments, and the process is highly visible within the organisation. Data is collected from several sources and is used to develop forecasts, with the value of each source of data being analysed and evaluated.

Demand planning accuracy and statistical bias are analysed to the SKU level, trends are analysed, and the impact of promotions are evaluated against established baseline volumes. The appropriateness of Collaborative Planning, Forecasting, and Replenishment (CPFR) has been analysed to a certain extent, but not Vendor Managed Inventory (VMI). Forecasting methods are based on product segmentation,
with SKUs being categorised according to four patterns of demand. The choice of forecasting methods is evaluated regularly, with heuristics being run to give an indication of the most appropriate forecasting methods for specific product codes.

All of the activities within the Determine Forecasting Procedures sub-process were considered to be important by the respondent, with the exception of forecasts being coordinated within the organisation so that the different functional areas' planning is based on the same numbers and assumptions, which was considered to be of critical importance. However, the appropriateness of VMI and CPFR have not been analysed and they have not been implemented to their fullest potential. The average score achieved for activities forming part of this sub-process was 4.

S-3 Plan Information Flow

A system has been designed for collecting input data from internal and external sources for forecasts. It has been evaluated, both internally and externally to the organisation, which functions, departments, customers, and suppliers require forecast information, and the organisation has developed a system to share this information effectively. An 18-month forecast is available down to the MRP level on the organisation's ERP system, and is shared with key suppliers. Forecast information’s influence on business strategy is understood, and relevant information is shared with key decision-makers within the organisation. Information is shared within business units, and specific meetings at board level are held to discuss forecast information.

All of the activities within the Plan Information Flow sub-process were considered to be of critical importance. The average score achieved for activities forming part of this sub-process was 4.66.

S-4 Determine Synchronisation Procedures

Consistent synchronisation procedures are in place that involve cross-functional input and execution, with suppliers and customers being recipients of the output. There is a weekly planning cycle for each SKU for a rolling 18-month period, with weekly and
monthly meetings held to review potential 'out of stock' situations and the forward projection. The organisation has stock allocation policies based on customer segmentation, and stockpiling policies based on profitability; policies are adhered to. Allocation is based on customer agreements, with a standard policy for stock piling, and an organisational policy on execution of allocation and stockpiling. There is a clear understanding of capacity and flexibility available within the organisation, but not necessarily elsewhere in the supply chain. The same synchronisation procedures are used for all products.

The presence of consistent synchronisation procedures and a clear understanding of the capacity and flexibility available at key points in the supply chain were viewed as being critically important. However, the organisation does not have an understanding of the capacity and flexibility available at key points in the supply chain. The existence of allocation policies based on customer segmentation, and stockpiling policies based on profitability, and adhering to those policies was viewed as being important, while formally differentiating synchronisation procedures for different products was viewed as being of minor importance. The average score achieved for activities forming part of this sub-process was 3.

S-5 Develop Contingency Management System

An adhoc cross-functional team is established to deal with unforeseen events that cause an imbalance between supply and demand. There are a number of events that are proactively predetermined, but unforeseen events are usually dealt with on an adhoc basis. These events are in the process of being formally defined.

Developing a contingency management system is seen as being of critical importance, however, a cross-functional team is not used to proactively consider potential events that might cause an imbalance between supply and demand, and an effective contingency management system for dealing with them is not in place. The score achieved for this sub-process was 2.
S-6 Develop a Framework of Metrics

Formal metrics focused on demand management are in place, which are related to financial performance. Measures include stock cover in days and value, forecast accuracy and bias, freshness and aging of product, working capital, receivables and payables, and growth. Formal performance goals relating to demand management are communicated internally, but not with customers or suppliers.

There are groups of functions whose metrics are aligned, but there are some conflicts between the groups. The misalignment between certain departments is viewed as being healthy by the head of demand and supply planning, as it allows people's assumptions and decisions to be challenged. Personnel throughout the organisation, as well as key customers and suppliers understand how their decisions and actions affect the demand management process.

The existence of formal metrics and goals for demand management were viewed as being critically important, however, those performance goals are not communicated to suppliers. Aligning demand management metrics with other metrics used throughout the organisation, and personnel and key suppliers and customers understanding how their decisions and actions affect demand management, were viewed as being important by the respondent. The average score achieved for the activities forming part of this sub-process was 3.5.

6.2.5 Order Fulfilment Process

S-1 Review Corporate and Marketing Strategy

The organisation's marketing strategy is communicated throughout the organisation. It is communicated at board level between the functional heads and business unit managers, which is then communicated within each of the functions and business units. A formal customer service strategy is in place, but it is not well communicated throughout the organisation. It is communicated to the supply chain function and the commercial and sales departments, but not with other functions. A single set of
customer service goals exist by segment, which are well communicated throughout the organisation. Core competencies within order fulfilment have not been identified, nor evaluated. They are in the process of being identified, with a skills matrix being developed. The organisation has an order fulfilment budget, and it is adhered to. The budget is reviewed on a monthly and quarterly basis, and changes are discussed at these reviews. Overspending on the budget is not an option, and it is strictly adhered to.

Communicating the customer service strategy throughout the organisation and customer service goals, by segment, throughout the organisation, were viewed as being important. However, the strategy is not well communicated throughout the organisation.

Communicating the marketing strategy, identifying and leveraging core competencies within order fulfilment, and having an order fulfilment budget and adhering to it were seen as being critically important. However, core competencies are not being leveraged within order fulfilment. The average score achieved for the activities forming part of this sub-process was 3.8.

S-2 Define Requirements for Order Fulfilment

The organisation works directly with customers to understand and agree to their order fulfilment requirements. In certain cases, the requirements have been understood and have been acted upon. The organisation meets with customers at senior management level, as well as with management on the same level at lower levels. A consolidated order fulfilment scorecard is reviewed with key customers once a month.

This sub-process was viewed as being critically important. The score achieved for this sub-process was 4.
S-3 Evaluate Logistics Network

Models are utilised on a periodic basis, once every three years, to evaluate/optimise the structure of the logistics network. The period in which the logistics network is evaluated is based on the fixed nature of the locations of the organisation’s manufacturing facilities and DCs.

Evaluating the logistics network was viewed as being important. The score achieved for this sub-process was 4.

S-4 Define Plan for Order Fulfilment

Order fulfilment terms and policies are differentiated for each customer segment based on class of trade, and contribution towards the organisation, strategies in place for growth of the segment, revenue contribution, and short-term growth, but not on future contribution. Classes of trade are wholesale, independent, and retail chains. Rules have been established for how the product is allocated between customers/customer segments, which are established with cross-functional input.

Allocation and stock reservation rules are in place, which are informed by a customer or segment’s historical sales contribution, planned promotions, forecasting tools, and customer/segment market share of a particular product. The rules are developed and reviewed with input from the customer service, marketing, demand and supply planning, and sales functions. The organisation has assessed and is utilising technology appropriately to support order fulfilment activities. A well-established management system is in place. The suitability of the system has been assessed historically. All DCs are managed through a warehouse management system (WMS), all factories and business processes are managed through an ERP system. The systems fully support order fulfilment.

Technology is prescribed by global organisational policy, but best practices and the appropriateness of existing technologies, and how to streamline the organisation's processes are assessed internally. Due to a lack of ordering rules, demand variability is experienced. No ordering rules are in place, with no minimum order sizes.
Payment term rules have been established, but not with the aim of minimising demand variability.

All of the activities within the Define Plan for Order Fulfilment sub-process were viewed as being important, but the organisation has not established ordering rules to minimise demand variability. The exception was establishing rules for how product is allocated between customers and customer segments, which was viewed as being critically important. The average score achieved for the activities forming part of this sub-process was 3.75.

S-5 Develop a Framework of Metrics

Formal metrics focused on order fulfilment are in place, and how they affect the organisation's EVA is understood. At the end of each calendar year, meetings take place to agree on metrics, based on the strategy of the business for the coming year. The metrics are reviewed on a weekly, monthly, and quarterly basis. Metrics are based on order fill-rate, product availability, cost of order fulfilment, inventory management (minimisation of finished goods, raw materials, and packaging), accounts payable, and management of working capital utilised by the order fulfilment process. The formal performance goals relating to order fulfilment are communicated throughout the organisation and to suppliers. Case fill-rate, working capital utilisation, cost of distribution, and supplier specific goals are communicated to suppliers. There are groups of functions whose metrics are aligned with order fulfilment, but there are some conflicts within the groups. The metrics are aligned with some functions, but they do not carry weight with other functions, and in some cases the metrics conflict. Case fill-rate is aligned between sales, supply chain, and manufacturing. The credit and returns, and refusals metrics are shared by the sales and supply chain functions, and the master schedule attainment metric is shared between supply chain and manufacturing functions. Conflicts exist in production efficiency and the size of production runs. Personnel throughout the organisation understand how their decisions and actions affect the order fulfilment process, but not how they affect key customers and suppliers.
All of the activities within the Develop a Framework of Metrics sub-process were considered to be of critical importance by the respondent, including ensuring that order fulfilment metrics are aligned with others used in the organisation, but there is a degree of misalignment in the metrics used in the organisation. The exceptions are individuals within the organisation and key customers and suppliers understanding how their decisions and actions affect the order fulfilment process, which was viewed as being important. However, key customers do not understand how their decisions and actions affect the order fulfilment process. The average score achieved for the activities forming part of this sub-process was 3.75.

6.2.6 Manufacturing Flow Management Process

S-1 Review Manufacturing, Sourcing, Marketing, and Logistics Strategies

The organisation has a manufacturing strategy, and it has examined how this strategy influences the manufacturing flow management process, with forward demand and the different time horizons considered. There is a sourcing strategy, but its influence on the manufacturing flow management process has not been examined. The organisation has a marketing strategy, but its influence on the manufacturing flow management process has not been examined.

A logistics strategy is in place, and how it influences the manufacturing flow management process has been examined. The interaction between the two is well-developed and understood. There is differentiation within product groups, with different logistical and manufacturing flow approaches applied. A formal process for evaluating the expertise that will be needed to use future technologies, or fulfil future market needs, is in place. Expertise requirements are formally determined and training is conducted. There is a formal process for assessing future changes in laws and regulations that could affect manufacturing practices. This process takes place at a corporate level at the organisation's headquarters, but there are also informal linkages with local authorities and regulatory bodies.
All of the activities within the Review Manufacturing, Sourcing, Marketing, and Logistics Strategies sub-process were considered to be of critical importance, but the organisation has not examined how the sourcing strategy and marketing strategy influences the manufacturing flow management process. The exception is examining the influence of the sourcing strategy on the manufacturing flow management process activity, which was considered to be important. The average score achieved for the activities forming part of this sub-process was 4.16.

**S-2 Determine Degree of Manufacturing Flexibility**

The organisation cannot offer different degrees of manufacturing flexibility to different customers. Manufacturing flexibility is not differentiated by product. Manufacturing flexibility requirements are determined by a cross-functional team. Manufacturing flexibility is viewed as important, as it allows the organisation to meet customer demand, manage working capital, and ensure freshness of product, thus reducing internal storage costs and the expiry of product. Quality policies and controls are standardised, and are offered to all customers with limited customer segmentation, but are not jointly developed with key customers. Differentiation in quality policies is predominately concerned with managing different expiry date requirements for different customers.

Capacity growth is formally planned, but not formally planned for flexibility requirements in the future. Make/buy decisions are based on multiple criteria and have a long-term focus. The criteria considered include social, product lead-time, and batch sizes, and the time horizon considered in make/buy decisions is longer than a year.

The ability to offer different degrees of manufacturing flexibility to different customers was considered to be of minor importance. Making make/buy decisions based on multiple criteria, with a long-term focus was considered to be important. Determining manufacturing requirements with a cross-functional team, having standardised quality policies and controls for segments of customers, and formally planning for capacity growth and flexibility requirements were considered to be of critical importance,
although the organisation does not formally plan flexibility requirements. The average score achieved for the activities forming part of this sub-process was 3.4.

**S-3 Determine Push-Pull Boundaries**

Push-pull boundaries are not evaluated systematically, and the concept is not exercised within the South African market. Postponement opportunities are not systematically evaluated. However, postponement could be used for packing a product into different packaging configurations as demand materialises.

Evaluating postponement opportunities was considered to be important, and evaluating push-pull boundaries was considered to be of critical importance, although these evaluations are not being done. The average score achieved for the activities forming part of this sub-process was 1.

**S-4 Identify Manufacturing Constraints and Determine Capabilities**

Manufacturing capabilities are documented and communicated internally, but not with key customers and suppliers. Decision-making regarding stock levels is centralised, but adjustments can be made on local information. A process exists for determining minimum and maximum stock levels centrally, and is agreed to by commercial departments, and regional sales departments. Formal disposal/disposition guidelines are in place, which are known and adhered to company-wide. Guidelines have been established and communicated so that customer service representatives know which customer requests can be fulfilled without further evaluation. The customer service representative will know what the allocation is for a particular customer or customer–segment, based on the formal guidelines that have been established. This is viewed as critical. Mechanisms have been developed that communicate real-time information about manufacturing capabilities. This information is available via the organisation’s ERP system and issued manufacturing reports.

All of the activities within the Identify Manufacturing Constraints and Determine Capabilities sub-process were considered to be of critical importance by the respondent, with the exception of documenting and communicating manufacturing
capabilities, which was viewed as being important. The average score achieved for the activities forming part of this sub-process was 4.8.

**S-5 Develop Framework of Metrics**

Formal manufacturing flow metrics are in place, but they are not linked to financial performance. One of the metrics is a 'Days between production weighted KPI'. There are no formal performance goals for manufacturing flow management, as it is not a practice that will be in place in the organisation in the near future. There are groups of functions whose metrics are aligned with manufacturing flow management, but there are some conflicts within the groups. Logistics and manufacturing flow are aligned, but there are some conflicts with the commercial department. Personnel throughout the organisation, as well as key customers and suppliers, understand how their decisions and actions affect the manufacturing flow management process, but customers' decisions and actions run contrary to this understanding.

All of the activities within the Develop a Framework of Metrics sub-process were considered to be important by the respondent, but manufacturing flow metrics are not linked to financial performance and EVA, and there are conflicts in metrics used in the organisation that hampers the performance of the manufacturing flow management process. The exception was having formal performance goals relating to manufacturing flow management that are communicated throughout the organisation and suppliers activity, which was viewed as being critically important. However, there are no formal performance goals, and by implication, they cannot be communicated throughout the organisation and to suppliers. The average score achieved for the activities forming part of this sub-process was 2.5.

**6.2.7 Product Development and Commercialisation Process**

**S-1 Review Corporate, Marketing, Manufacturing, and Sourcing Strategies**

The influence of the corporate strategy on the product development and commercialisation process was examined. Part of the organisation's strategy is to
produce healthy food products, which reduces the influence of the strategy as a result of the relatively unhealthy nature of confectionery products. The organisation has a manufacturing strategy, and its influence on the product development and commercialisation process has been examined. The manufacturing strategy is linked to capital expenditure and long-term planning and budgeting for manufacturing capacity. Alignment is required between what can be manufactured, and what products are being developed.

The organisation has a sourcing strategy, but how it influences the product development and commercialisation process has not been examined. A sourcing strategy is in place for existing products, but not necessarily for new products. New product requirements drive the sourcing strategy, which is important for quick turnaround of new product development and manufacture. The influence of the marketing strategy on the product development and commercialisation process has been fully examined.

There is a clear marketing strategy, and part of the strategy defines the segments where the focus for new product development will be, key areas of the market to target, promotional support, and the development of brands that are being supported in the strategy. The view of the respondent is that without planned support from other areas of the organisation, new products will not be successful. The organisation regularly meets with key customer segments to review their product needs. The sales team jointly reviews needs with major customers. It is an informal process, which is not customer-specific, but ultimately applies to the market for a particular product. There is an extensive, cross-functional understanding of the supply chain constraints and capabilities as they relate to product development activities. Two staff members from the procurement function are seconded to the product development department to attend new product reviews, in order to provide the procurement function with visibility on plans. The procurement function provides support for raw material and packaging, point of sale promotion, media, and in-store infrastructure that is required for new products.

Their involvement is seen as being key. Involvement from other departments includes marketing, R&D, manufacturing, and the product category and channel manager who
coordinates the process and is the direct link with the sales and supply function of the organisation.

Examining the influence of the corporate strategy on product, the development and commercialisation process was viewed as being of minor importance. Examining the influence of the manufacturing and sourcing strategies, and meeting regularly with key customers to review their product needs were considered to be important, but the influence of the sourcing strategy on the product development and commercialisation process has not been examined. Examining the influence of the marketing strategy on the product development and commercialisation process, and having an extensive cross-functional understanding of the supply chain constraints and capabilities as they relate to product development activities were considered to be critically important activities. The average score achieved for the activities forming part of this sub-process was 4.

S-2 Develop Idea Generation and Screening Processes

Formal customer feedback serves as input into the product development and commercialisation process. When idea-generation takes place, a large multifunctional team including sales, procurement, manufacturing, new product development, Nielsen market research staff, raw materials suppliers, and media partners is established. The sales and product development functions will bring formal customer feedback to the idea generation process. The organisation does not offer incentives for new product ideas, as it is not the organisation's policy to do so. Several sources are used for developing new product ideas, but there is room for improvement. Sources include consumer research, market research and industry reports, global studies, Nielsen market research, trade surveys, sales personnel, informal customer feedback, suppliers, and internal functions. There is an explicit methodology for developing new product ideas. This is in place to ensure that new product development is aligned to the organisation's strategy. A documented procedure is in place for new product development, from the initial broad scope of the process, to the specific detail and final new product concept. Discretion is allowed in certain aspects that can be changed according to the type of product being developed. The choice of sources of new product ideas is not re-evaluated.
Offering incentives for new product ideas, and re-evaluating the choice of new product ideas were considered to be of minor importance. Formally considering customer feedback, using several sources of new product ideas, and having an explicit methodology for developing new product ideas were considered to be important, although the organisation does not formally evaluate the value of all potential sources of new product ideas. The average score achieved for the activities forming part of this sub-process was 2.8.

S-3 Establish Guidelines for Cross-Functional Product Development Team Membership

Guidelines do not exist for suppliers and/or customers involvement in the product development and commercialisation processes. Customers are not directly involved in the product development process, as a conflict of interest may occur between customers, and customers want exclusive supply for the products to which they have contributed ideas. There are informal guidelines for evaluating the relative strengths, weaknesses, and roles of internal personnel in order to determine their involvement in the product development and commercialisation process. The roles of involved personnel are defined according to their department and job function, and their strengths and weaknesses are generally considered in the process. The organisation does not have guidelines for evaluating human resource constraints in order to determine employee involvement in the product development and commercialisation process. Involvement in the process is considered to be part of personnel's job functions. However, it does represent a constraint for the process.

Having formal guidelines for customers and suppliers involvement in the product development and commercialisation process was viewed as being of minor importance. Having formal guidelines for evaluating the relative strengths and weaknesses of internal personnel in order to determine their involvement in the process, and for having formal guidelines for evaluating human resource constraints in order to evaluate employee involvement in the process were viewed as being important activities, although there are no formal guidelines for evaluating relative strengths and weaknesses of internal personnel, and there are no guidelines for
evaluating human resource constraints. The average score achieved for the activities forming part of this sub-process was 1.6.

S-4 Identify Product Roll-Out Issues and Constraints

Consistent procedures that involve cross-functional input to identify product roll-out issues and constraints are in place, but the procedures do not involve input from appropriate customers and suppliers. Potential problems associated with market and promotion planning for product roll-outs is formally considered. Having an understanding of potential problems is seen as a dependency of product roll-out and promotion. Meetings are held where potential issues are formally considered.

Potential problems associated with sales-force training for product roll-outs are formally considered. Specific meetings are held where a new product's effect on the sales organisation is considered, and the new product is launched to the sales team. Potential problems associated with transportation planning for product roll-outs are formally considered. Formal transportation trials take place to assess if the product can be transported before the final packaging configuration is determined. This is handled by the logistics and manufacturing functions. Potential problems associated with inventory deployment for product roll-outs is formally considered, which is determined by the new product development department.

Having consistent procedures that involve cross-functional input to identify product roll-out issues and constraints was considered to be of minor importance. Formally considering potential problems associated with sales force training and transportation planning were considered to be important. Formally considering problems associated with market and promotion planning, and inventory deployment for product roll-outs was considered to be of critical importance. The average score achieved for the activities forming part of this sub-process was 4.2.

S-5 Establish New Product Guidelines

The organisation has formal guidelines for establishing time-to-market expectations for the product development and commercialisation process. This is performed
formally in the organisation, and is part of the new product development process. Approval is sought for the time-to-market lead-time, and it is related to budgets and strategy. There are formal guidelines for establishing profitability targets for the product development and commercialisation process. If a certain level of profitability is not achieved, the product will not be launched. There are specific targets and guidelines, including financial targets, as well as aggregate profitability that must be achieved. Formal procedures are in place for assessing the strategic fit of new products. This is incorporated into the new product development process, and is completed at an early stage.

All of the activities within the Establish New Product Guidelines sub-process were considered to be important by the respondent. The average score achieved for the activities forming part of this sub-process was 4.5.

**S-6 Develop Framework of Metrics**

The organisation has formal metrics focused on product development and commercialisation, and it is understood how they affect the organisation's financial performance. Metrics include growth, net sales, profitability, market share, and distribution, and utilisation of capacity in the organisation's factories. Formal performance goals relating to product development and commercialisation are communicated internally. Complete visibility of targets and metrics is openly communicated to the entire organisation. Product development and commercialisation metrics are aligned with other metrics used throughout the organisation. All functions are aligned around financial targets. Personnel and key suppliers understand how their decisions and actions affect the product development and commercialisation process.

The existence of formal metrics and performance goals relating to product development and commercialisation and their communication throughout the organisation and to suppliers were considered to be important, although the performance goals are not communicated to suppliers. Aligning product development and commercialisation metrics with other metrics used throughout the organisation, and personnel and key customers and suppliers understanding how their decisions
and actions affect the product development and commercialisation process were considered to be of critical importance. The average score achieved for the activities forming part of this sub-process was 4.

6.2.8 Returns Management Process

S-1 Determine Returns Management Goals and Strategy

Cross-functional input is used to frame the role of returns management within corporate strategy, in terms of customer service and market cannibalisation. There is a specific policy on returns, and returns management measures form part of the corporate KPIs. Bad goods and non-saleable product ratios are measured. Input from other departments is used, such as sales, health and safety, compliance, and quality.

The best alternatives to recapture value and recover assets from returns are evaluated with cross-functional input. A salvage process is in place, with specific customers identified for the sale of salvaged products and related pricing, as well as organisations to which salvaged products are donated. Cross-functional input includes corporate affairs, the business unit to which the salvaged product pertains, the distribution centre, compliance, and quality functions. An SOP is in place to determine how value is recovered; this is reviewed periodically. The organisation regularly evaluates potential environmental and legal requirements and assesses its level of preparedness. Cross-border returns processes, customs related issues and the costs involved, destroyed goods policies, and certificates of goods destruction are considered.

A reverse logistics service provider assists with returns, and sorts products by batch and expiry dates. Recycling is performed, and contents of goods destined for disposal are carried out by a registered waste management company, with records of this being kept for auditing purposes. Local quality assurance and the market quality assurance manager at head office level monitor the regulatory and legal environment on a monthly basis. An SOP is in place to govern the process and reflect changes in regulations. When determining goals and strategy for returns management, internal
constraints and capabilities are considered, and to a certain extent, those constraints and capabilities of suppliers and customers are also considered. There is a separate returns management policy with Shoprite, with returns taking place from DCs, with upliftment from the store level carried out by Shoprite vehicles.

All of the activities within the Determine Returns Management Goals and Strategy sub-process were considered to be of critical importance. The average score achieved for the activities forming part of this sub-process was 4.5.

S-2 Develop Avoidance, Gatekeeping and Disposition Guidelines

Different types of returns have been identified with cross-functional input. The different types of returns identified are customer damages, market recalls, expired stock, close to expired stock, and unsold products. There is input from sales, finance, the business units, and the DC. The organisation has formal procedures for identifying and reviewing avoidance opportunities with cross-functional input. Formal documented procedures for identifying avoidance opportunities are in place. Merchandisers in stores provide notification, and opportunities for avoidance are identified with the sales representatives. Input is provided by the respective business units, transportation, and the DC.

Refund policies as well as gatekeeping policies have been developed. There is a credit note management SOP and a drivers’ call centre where returns queries are logged, and a formal approval process is followed for returns. An exception report is used to manage returns, checks are in place between the different points in the process, with sign-offs and release to the next step in the process. Authorisation limits and escalations are in place for different financial ranges of returns, which is audited. Disposition guidelines are developed from the input of a cross-functional team, and are coordinated with customers and suppliers. These guidelines are documented and in place, with service providers carrying out dispositions according to the guidelines. Quality Assurance at head office sets the guidelines with input from audit, finance, distribution, customer service, and sales functions.
All of the activities within the Develop Avoidance, Gatekeeping and Disposition Guidelines sub-process were considered to be of critical importance by the respondent. The average score achieved for the activities forming part of this sub-process was 4.5.

**S-3 Develop Returns Network and Flow Options**

The organisation has designed a reverse logistics network that attempts to minimise its logistics costs. A separate dedicated service provider is used for upliftments of returned product, with a separate fleet from forward distribution and dedicated space within the DCs. In addition to designing the reverse logistics network to reduce cost, it was also designed to ensure that proper controls of returned product are in place. The organisation has analysed transportation modes and methodologies, specifically for the types of returns that have been identified. Dedicated transportation and a different methodology to forward distribution is utilised as a result. Plans for dealing with product recalls are developed by a cross-functional team and everyone knows what their role is in the event of a recall. There is a formal process and plans for product recalls, with different functions and teams involved and the roles of the various functions understood. The management of product recalls is seen as a critical issue in the organisation, because of the potential reputational damage that can take place if recalls are not managed correctly.

Designing a reverse logistics network to minimise the supply chain's costs was seen as important. Analysing transportation modes and methodologies and having plans for dealing with product recalls were seen as being critically important. The average score achieved for the activities forming part of this sub-process was 4.

**S-4 Develop Credit Rules**

The method of valuing the returned product is standardised and developed internally. Conflict exists with customers over the valuation of returns. Procedures and guidelines are in place for how product is valued, with specific related measures. Customers and suppliers understand the credit authorisation process, which is detailed in the respective customer agreements and trading. However, customers
respond differently to the agreements and ignore the procedures. Standard credit policies were developed internally. The future intention is to develop credit policies with customers.

The respondent indicated that standardising the way returned product is valued with input from key customers and suppliers is considered to be important, but the way returned product is valued is developed internally. It was considered to be critically important that customers and suppliers understand the credit authorisation procedures, and for credit policies to be standardised with the input from key customers and suppliers. However, the organisation does not take key customers' and suppliers' input into account when developing credit policies. The average score achieved for the activities forming part of this sub-process was 3.66.

S-5 Determine Secondary Markets

Secondary markets are evaluated regularly and the effect they can have on sales cannibalisation and brand image are considered. Contracts are in place to guide behaviour. A customer business manager is responsible for secondary markets, which is seen as a sales channel. The evaluation takes place on an annual basis. Rules have been developed about using secondary markets and they are well communicated throughout the organisation, as well as to customers. Remanufacturing/refurbishing strategies are developed with limited functional input. A strategy for refurbishing has been considered, such as repackaging and applying new labels to product. The development of refurbishing strategies is no longer being pursued, because the costs of refurbishing are considered to be high. Input was sought from quality assurance, the respective business units, and logistics.

Evaluating secondary markets regularly, and developing rules about using secondary markets and communicating those rules were considered to be critically important, while developing remanufacturing and refurbishing strategies with the input of multiple functions including purchasing, marketing, logistics and operations was viewed as being important, the strategies are developed with only limited input. The average score achieved for the activities forming part of this sub-process was 4.3.
Develop a Framework of Metrics

Formal returns management metrics that are related to financial performance are in place. Bad goods, claims, returns, refusals, dispute management, process completion deadlines, and time-frames for certain actions are measured. The organisation has formal performance goals relating to returns management that are communicated throughout the organisation and to suppliers. Goals include keeping returns below 1.7% of total invoice value, bad goods below 0.5% of invoice value, and 60 days for the resolution of all returned goods processes. Returns management metrics are aligned with other metrics used throughout the organisation. The metrics are fully aligned with the distribution, logistics, customer service, finance, quality assurance, and sales functions, but less so with the respective business units. Personnel within certain functions within the organisation understand how their decisions and actions affect the returns management process, however certain functions and customers do not understand suppliers.

All the activities within the Develop a Framework of Metrics sub-process were considered to be of critical importance, with the exception of having formal performance goals relating to returns management and communicating them, which was viewed as being important. However, personnel throughout the organisation and key suppliers and customers have a limited understanding of how their decisions and actions affect the returns management process. The average score achieved for the activities forming part of this sub-process was 3.5.

6.3 Summary of the Scores Achieved per Strategic Sub-Process and Strategic Supply Chain Management Process

As the statements of the existing situation for each activity within the assessment tool are consistently rated on a scale, ordered from 1 being complete or minimal adherence to the framework, to 5 being full adherence and implementation of the framework, it is possible to calculate an average that provides an indication of the status of each process and sub-process in relation to the best practices identified in the framework. Based on the findings of the survey, average scores achieved for
each supply chain management process and its strategic sub-processes by the respondent organisation can be calculated by averaging the scores achieved for each activity, of which a sub-process is comprised. The overall average score per process can also be calculated to provide an indication of where the organisation currently stands in its implementation of supply chain management, as defined by the GSCF framework. It is not possible to reflect on absolute or sum total scores, as each supply chain management process has a different number of sub-process and activities. Where a sub-process comprised of only one activity, the score achieved for that activity constitutes the score for the sub-process. As the framework does not differentiate the importance of certain processes over others, and that all the processes collectively constitute supply chain management in practice, it is assumed that they carried equal weight.

The below table summarises the average scores achieved per strategic sub-process.

<table>
<thead>
<tr>
<th>Strategic Sub-Process</th>
<th>Average score achieved per strategic sub-process out of 5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Customer Relationship Management Process</strong></td>
<td></td>
</tr>
<tr>
<td>S-1. Review Corporate and Marketing Strategy</td>
<td>4.00</td>
</tr>
<tr>
<td>S-2. Identifying Criteria for Segmenting Customers</td>
<td>5.00</td>
</tr>
<tr>
<td>S-3. Provide Guidelines for the Degree of Customisation in the Product and Service Level Agreement</td>
<td>5.00</td>
</tr>
<tr>
<td>S-4. Develop a Framework of Metrics</td>
<td>4.30</td>
</tr>
<tr>
<td>S-5. Develop Guidelines for Sharing Process Improvement Benefits with Customers</td>
<td>5.00</td>
</tr>
<tr>
<td><strong>Supplier Relationship Management Process</strong></td>
<td></td>
</tr>
<tr>
<td>S-1. Review Corporate, Marketing, Manufacturing and Sourcing Strategies</td>
<td>4.50</td>
</tr>
<tr>
<td>S-2. Identify Criteria for Segmenting Suppliers</td>
<td>5.00</td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>S-3. Provide Guidelines for the Degree of Customisation in the Product and Service Agreement</td>
<td>2.00</td>
</tr>
<tr>
<td>S-4. Develop a Framework of Metrics</td>
<td>2.50</td>
</tr>
<tr>
<td>S-5. Develop Guidelines for Sharing Process Improvement Benefits with Suppliers</td>
<td>3.00</td>
</tr>
</tbody>
</table>

**Customer Service Management Process**

<table>
<thead>
<tr>
<th>S-1. Develop Customer Service Strategy</th>
<th>5.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>S-2. Develop Response Procedures</td>
<td>4.60</td>
</tr>
<tr>
<td>S-3. Develop Infrastructure for Implementing Response Procedures</td>
<td>4.25</td>
</tr>
<tr>
<td>S-4. Develop a Framework of Metrics</td>
<td>3.25</td>
</tr>
</tbody>
</table>

**Demand Management Process**

<table>
<thead>
<tr>
<th>S-1. Determine Demand Management Goals and Strategy</th>
<th>4.33</th>
</tr>
</thead>
<tbody>
<tr>
<td>S-2. Determine Forecasting Procedures</td>
<td>4.00</td>
</tr>
<tr>
<td>S-3. Plan Information Flow</td>
<td>4.66</td>
</tr>
<tr>
<td>S-4. Determine Synchronisation Procedures</td>
<td>3.00</td>
</tr>
<tr>
<td>S-5. Develop Contingency Management System</td>
<td>2.00</td>
</tr>
<tr>
<td>S-6. Develop a Framework of Metrics</td>
<td>3.50</td>
</tr>
<tr>
<td>Order Fulfilment Process</td>
<td></td>
</tr>
<tr>
<td>-----------------------------------------</td>
<td></td>
</tr>
<tr>
<td>S-1. Review Corporate and Marketing Strategy</td>
<td>3.80</td>
</tr>
<tr>
<td>S-2. Define Requirements for Order Fulfilment</td>
<td>4.00</td>
</tr>
<tr>
<td>S-3. Evaluate Logistics Network</td>
<td>4.00</td>
</tr>
<tr>
<td>S-4. Define Plan for Order Fulfilment</td>
<td>3.75</td>
</tr>
<tr>
<td>S-5. Develop a Framework of Metrics</td>
<td>3.75</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Manufacturing Flow Management Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>S-1. Review Manufacturing, Sourcing, Marketing, and Logistics Strategies</td>
</tr>
<tr>
<td>S-2. Determine Degree of Manufacturing Flexibility</td>
</tr>
<tr>
<td>S-3. Determine Push-Pull Boundaries</td>
</tr>
<tr>
<td>S-4. Identify Manufacturing Constraints and Determine Capabilities</td>
</tr>
<tr>
<td>S-5. Develop Framework of Metrics</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Product Development and Commercialisation Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>S-1. Review Corporate, Marketing, Manufacturing and Sourcing Strategies</td>
</tr>
<tr>
<td>S-2. Develop Idea Generation and Screening Processes</td>
</tr>
<tr>
<td>S-3. Establish Guidelines for Cross-Functional Product Development Team Membership</td>
</tr>
<tr>
<td>S-4. Identify Product Roll-Out Issues and Constraints</td>
</tr>
<tr>
<td>S-6. Develop Framework of Metrics</td>
</tr>
<tr>
<td>Returns Management Process</td>
</tr>
<tr>
<td>----------------------------------------------------------------</td>
</tr>
<tr>
<td>S-1. Determine Returns Management Goals and Strategy</td>
</tr>
<tr>
<td>S-2. Develop Avoidance, Gatekeeping and Disposition Guidelines</td>
</tr>
<tr>
<td>S-3. Develop Returns Network and Flow Options</td>
</tr>
<tr>
<td>S-4. Develop Credit Rules</td>
</tr>
<tr>
<td>S-5. Determine Secondary Markets</td>
</tr>
<tr>
<td>S-6. Develop Framework of Metrics</td>
</tr>
</tbody>
</table>

Table 6.2: Average score achieved per strategic sub-process in the assessment tool analysis of the respondent organisation's supply chain management practices.
The table below summarises the average score achieved per strategic supply chain management process.

<table>
<thead>
<tr>
<th>Process</th>
<th>Average Score (out of 5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer Relationship Management</td>
<td>4.5</td>
</tr>
<tr>
<td>Supplier Relationship Management</td>
<td>3.1</td>
</tr>
<tr>
<td>Customer Service Management</td>
<td>4.3</td>
</tr>
<tr>
<td>Demand Management</td>
<td>3.8</td>
</tr>
<tr>
<td>Order Fulfilment</td>
<td>3.8</td>
</tr>
<tr>
<td>Manufacturing Flow Management</td>
<td>3.5</td>
</tr>
<tr>
<td>Product Development and Commercialisation</td>
<td>3.6</td>
</tr>
<tr>
<td>Returns Management</td>
<td>4.1</td>
</tr>
<tr>
<td><strong>Average overall score</strong></td>
<td><strong>3.8</strong></td>
</tr>
</tbody>
</table>

Table 6.3: Average score achieved per process in the assessment tool analysis of the respondent organisation's strategic supply chain management practices.

### 6.4 General Findings and Observations

After a detailed analysis of the findings of the assessment tool survey and an accumulation of the observations made during the survey process, it is possible to discuss a number of general findings and to reflect on these as they pertain to the implementation of the GSCF framework in practice.
6.4.1 Extensively Developed Customer Relationship and Customer Service Management Processes

The customer facing processes are well developed within the organisation, with the two highest average scores being those for the customer relationship management (4.5) and customer service management (4.3) processes. There is an extensive amount of formal communication and coordination with key customers, with the clear identification and segmentation of key customers and customer segments, and formally documented procedures for the parameters for the negotiation of agreements with customers. Business relationships are also formally documented in the form of product and service agreements, and the sharing of improvements from re-engineering and reconfiguration projects and initiatives. The formal discussion and agreement of PSAs between similarly senior individuals of the respective organisations, with cross-functional assistance and input, is the primary integrating mechanism. The extent of business that takes place between the respective organisations serves as the basis for collaboration. On-going reviews of joint metrics and performance on the targets ascribed to in the PSAs indicate that there is commitment between the respective organisations to achieving the objectives of set out in the PSAs. The on-going discussion and changes to PSAs indicates that the respective organisations are achieving tangible benefits from formal collaboration, which provides the motivation for further collaboration.

The customer service management process is highly developed in its function of supporting and coordinating the order fulfilment process, managing communication from customers and the appropriate responses to those, as well as providing information to customers, and facilitating the management of returns of product and refusals of deliveries by customers. The operation of the customer service management process is based on the operation of a call-centre with extensive procedures, training, and metrics, supported by a well-developed ERP application. The awareness of the function of the customer service management process within the organisation is high, and it is seen as the focal point for responding to customer queries, and achieving the headline KPI of 98% order fill-rate for all customer orders. Customer service staff being based at logistics facilities nationally, and the customer
service metrics being displayed on monitors in real time in offices and facilities nationally is an indication of this.

6.4.2 Cross-Functional Approach to the Management of Processes

It is apparent that there is extensive internal cross-functional involvement in the management of the supply chain management processes. While each of the processes is effectively owned by a particular function within the supply chain function, there is a high level of involvement, buy-in and awareness of the activities, metrics, goals, and functioning of each process. There is also extensive involvement from other functions within the organisation, such as sales, legal and regulatory compliance, manufacturing, finance, and the business units that manage different product lines. Collaboration is driven by common objectives, such as order fill-rate and overall profitability. Regular cross-functional meetings and reviews, and documented roles and responsibilities for specific activities drive integration.

However, the same level of integration and collaboration is not prevalent with customers and suppliers in activities outside of the customer relationship and supplier relationship management and product development and commercialisation processes. The indication is that certain processes are considered to be the concern of internal functions to determine and formulate, while others are naturally externally focused, and by their nature involve integration with customers and suppliers in the supply chain.

6.4.3 Business Strategies are Established and Well Known

The organisation has well developed business strategies for each functional area that are well-developed and well-communicated throughout the organisation. There is a cascade approach in the implementation of the strategies, with plans and objectives being established for each division, business unit, department and work team level. This creates a high degree of awareness and understanding within the organisation regarding various related strategies and the objectives to be achieved, as well as an
awareness of the steps to be taken by each department to achieve the strategies over the various time-periods for the execution of different strategies.

The emphasis on action towards achieving specific strategies, which is achieved through the initial discussion and acceptance of strategies on a senior management level and cascading meetings to communicate the strategies, as well as the subsequent regular review meetings to track progress towards achieving organisational strategies, drives action and achievement of stated objectives.

It is within this framework that supply chain management strategies have achieved wide acceptance and support within the organisation. Whilst in many other organisations, the supply chain function is seen as a support function, or a shared services execution focused operation, the respondent organisation has developed a supply chain function that is seen as a broad range of processes and functions, which are key to the achievement of the objectives of the organisation in the marketplace and the functioning of the organisation.

6.4.4 Conflicts Exist Among Metrics Throughout the Organisation

Conflicts were reported among metrics used within processes and groups of functions, as well as among metrics used by specific functions. The respondents to the survey indicated that these conflicts were a normal part of the functioning of the organisation, and while they presented challenges to meeting their objectives, they did not represent a fundamental problem within the organisation.

Conflict will exist among metrics where the objectives of certain functions are naturally opposed, such as inventory availability and working capital requirements, manufacturing economies and planning flexibility, volume buying of inputs to production and storage facility costs, order cycle time and logistics costs, etc. These conflicts will exist, particularly because of uncertainties with regard to consumer demand and market conditions, and the resulting variability in the operations of the organisation, which is required to respond to these varying conditions. Common goals and metrics assist in reducing conflict, such as the 98% order fill-rate, joint
forecasting, planning, the establishment of joint metrics with large key customers, thorough analysis of economic and existing market conditions by the supply and demand planning function, and the establishment of long-term plans to align supply and demand across manufacturing, marketing, and the supply chain function.

6.4.5 Customers Do Not Understand How Their Decisions and Actions Impact on Supply Chain Processes, While Suppliers Do

Where the question was posed in the survey regarding the understanding customers and suppliers have of how their decisions and actions impact on certain supply chain processes, the response consistently provided was that customers understand, yet they act in a manner that negatively affects the performance of supply chain management processes.

This may be indicative of the lack of supply chain management maturity within the South African industry, as well as the power that national retail chains hold within the supply chain, enabling them to subvert established processes and agreements, or making requests that fall outside of prior planning and arrangement when it is in their interest to do so. On the other hand, suppliers understand their influence on supply chain processes, and their actions normally avoid negatively affecting the supply chain processes in which they have a role to play. The role of suppliers supplying goods and raw materials for use in production may play a role in this, as manufacturing typically involves MRP and production scheduling, which enables suppliers to have a certain amount of visibility regarding the volume and types of materials that will be procured by the organisation over a period of time, and to ensure they are able to supply the materials as required. A further driver of this understanding is the organisation's assessment of the suppliers' ability to supply the organisation with sufficient quantities of material, and suppliers' capability in being flexible in supplying additional quantities of materials as required. These attributes are particularly pertinent differentiators for the suppliers to the organisation, as they supply commodity products such as sugar, glucose, dairy, flavourants, colourants, and cocoa, among others, which by definition are relatively undifferentiated products.
6.4.6 Process Related Procedures are Well Documented

The organisation makes extensive use of documented standard operating procedures (SOPs). Each functional area and its related activities had SOP documentation indicating the policies of the organisation, the steps to be followed to carry out tasks, as well as guidelines regarding the options that could be used in a particular activity. The procedures also covered compliance rules and regulations, which are especially applicable for a food manufacturing company. These kinds of documents were well understood and frequently referred to by different functional heads during the course of the survey process. On-going discussion and revision of the SOP documents takes place, as improvements to the processes are made, or additional options are identified. Employees are also formally trained on the contents of the document, which ultimately leads to standardisation and consistency in the execution of supply chain management activities. The SOPs also cascade from high level strategic functions down to the operational level, ranging from the guidelines in negotiating how the benefits in process improvements will be shared with customers and which aspects of the trade terms can be negotiated, and the limits that apply on a percentage basis, to how calls should be attended to at the customer service call centre, and the metrics that apply to that operation.

Importantly, once the initial decisions on a strategic and tactical level were taken these documented procedures provide the basis for the implementation, as well as continuous improvement of supply chain management process activities within the organisation on a day-to-day basis.

6.4.7 Extensive Use of Metrics and Performance Goals

The organisation makes extensive use of process and financial metrics, and sets performance goals in the management of its supply chain activities and processes. The metrics to be used at each level of the organisation are set out by the corporate headquarters, and a comprehensive process of analysis and discussion takes place at the top management level with the directors of the various divisions and business units establishing the goals that need to be achieved in the respective areas, in order
for the organisation to achieve the financial objectives that have been set by the corporate headquarters for the financial year in terms of revenue, profitability, and growth. At this stage, it has also been established which goals and metrics are joint metrics that require the involvement of multiple divisions or departments in order to be achieved, and the necessary coordination is established. A cascading process of establishing goals at each level with the divisions and departments is then followed. This process of breaking down the goals into more specific goals per department and division and aligning them to each other enables the achievement of the goals and objectives set at the top level.

Ultimately, the establishment and use of a framework of metrics and associated goals are central to the drive to implement and realise the benefits of the process activities as described in the GSCF framework. The goals provide direction and motivation to teams and individuals within the organisation, which is central to the achievement of the organisation's objectives.

6.4.8 Supplier Relationship Management Process Not Fully Developed

The organisation has not developed its supplier relationship management process to the extent described in the framework. A number of key activities are not being carried out, such as the drawing up of PSAs, profitability reports for suppliers, and formal procedures concerning areas such as sharing of process improvements with suppliers and customisation alternatives for supplier PSAs. The organisation's procurement manager was aware of the shortfalls in the process, and believed many of the activities not being carried out to be of importance. However, the skill required to carry out these activities exists within the organisation as they are being carried out with customers through the customer relationship management process.

The difference in the maturity between the supplier relationship and customer relationship management processes can be partly explained by the emphasis within the organisation on revenue-generating sales and marketing activities, whereby the processes and activities involving interaction with customers are prioritised and developed. Typically within organisations, the procurement function is viewed as a
cost centre and as an input into the manufacturing process, with supplier relationships being adversarial and characterised by negotiations regarding the cost of materials. This approach is especially prevalent in the confectionery industry where the main inputs to production are raw materials with low levels of inherent technology such as sugar, glucose, cocoa, and food additives. This would thus drive a transactional approach to be taken with suppliers, with the capacity of suppliers being assessed, and the capability of suppliers to provide materials commensurate to the standards required for the manufacturing of food products.

6.4.9 Overall Performance

The organisation has a high level of overall performance. This performance includes the organisation’s capacity to supply large volumes of product to a growing market, the maintenance of relationships with the largest national retail chains and wholesale retailers, financial performance, reputation for food quality and safety, the strength of its brands in the market, high levels of customer service and logistical execution performance, and innovation in new product development.

Ultimately, this can be attributed largely to the development and implementation of supply chain management processes and the extensive use of procedures, methodologies, metrics, and performance goals that drive the achievement of the organisation's objectives.

6.4 Presentation of the Findings to the Respondents

After the findings of the survey were analysed and documented, a presentation of the survey was made to the respondents at the organisation's offices. The presentation covered the definition of supply chain management as defined in the study, the background to the GSCF, additional information on the GSCF’s assessment tool, the specific respondents per supply chain management process, general findings and comments, and the average score per process. The activities that presented an opportunity for improvement (based on activities that were scored as a 3 or below on
the assessment tool) were highlighted and discussed, with the importance ascribed to the respondent also indicated. The presentation ended with a number of observations and general indications where improvements can be made to the organisation’s supply chain management activities. A discussion of the findings then took place, where the respondents indicated that the findings were valid, and of interest and value. A senior member of the supply chain function further indicated that the findings of the survey would be used as the basis of an action plan to investigate the potential areas for improvement.

6.5 Conclusion

Within this chapter, the findings of the application of the GSCF assessment tool within the respondent organisation were discussed and presented. The major finding from the application of the research instrument+ is that the majority of the practices found within the GSCF framework are being applied by a major, competitive FMCG manufacturer within the South African confectionery industry, which includes integration with customers and suppliers. This provides the basis for the conclusion that the GSCF framework can be applied within the context of the South African industry, developing market environment, and that South African retailers are willing to collaborate and integrate within the confectionery and FMCG supply chain.

The findings further indicate that the GSCF framework is a useful and structured way of gathering information and analysing an organisation's supply chain activities, by providing a set framework of processes and sub-processes that are broken down into specific activities, with an associated assessment tool for conducting the investigation. The findings of an investigation conducted using the GSCF assessment tool allow an organisation to identify opportunities for improvement in the way they structure and manage their supply chain activities and integrate with customers and suppliers.

Ultimately, the case study provides a detailed view and analysis of the supply chain management practices employed by an organisation with a strong market share position within the industry in which it operates. One can deduce that these practices
contribute towards the organisation's success, given the broad and vital role that supply chain management fulfils within the organisation. Given that the practices that have been analysed and benchmarked apply to the organisation's entire range of products and business units, it provides other manufacturing organisations within the South African confectionery and FMCG industries with an example of supply chain management practices that they can implement to improve their competitiveness and market position, as detailed in the GSCF framework.
CHAPTER 7

CONCLUSION

7.1 Introduction

In this study, the South African confectionery industry was identified and described as experiencing high levels of competition among local companies and foreign competitors, and the various factors that were analysed according to Michael Porter's Five Forces model: buyer power, supplier power, new entrants into the industry, substitutes, and rivalry.

In the introduction to the study, Michael Porter’s research on competitive strategy and competitive advantage indicated that an organisation can achieve a high level of organisational performance and profitability, relative to its competitors, by pursuing a differentiation, cost leadership, or focus strategy. In addition, an organisation should carry out its value chain activities in a manner that maximises the value that it creates for its end customers, allowing a greater margin to be earned.

However, substantial research results support the notion that although an organisation may organise and manage its internal value chain activities optimally, there is still a limit to the level of value add and performance it can achieve given the impact of supply chain performance on organisational performance. Supply chain performance is influenced by the manner in which the supply chain is managed. In order to realise the benefit of well-managed value chain activities and to establish a competitive advantage, an organisation must actively manage its supply chain in order to achieve superior performance to its competitors.

Given the role played by supply chain performance on organisational performance, the study proposed analysing the current state of supply chain management practices within a large manufacturer within the industry, and providing a case study of the findings. A framework for analysing supply chain management practice within the industry that could be applied to the chosen organisation, was required.
This led to the objectives of the study:

Primary objective:

- to apply an international supply chain management best practice framework, in order to identify and critically analyse the state of supply chain management practices in a leading manufacturer in the South African confectionery industry.

Secondary objectives:

- to illustrate the role of supply chain management in creating competitive advantage for organisations;

- to identify, in the context of the study, an appropriate best practice supply chain management framework that can be applied to the study of the supply chain management practices of a leading South African confectionery manufacturer; and

- to provide a detailed description and analysis of the structure, market characteristics, and competitive conditions prevalent in the South African confectionery industry.

The objectives were achieved through a study of the literature pertaining to the concepts of supply chain management and competitive advantage, and an analysis and comparison of the documented supply chain management frameworks. An industry report and first-hand knowledge of the industry by the researcher formed the basis of the findings on the South African confectionery industry. The researcher’s primary research into the major manufacturer in the form of face-to-face interviews through the use of the selected supply chain management framework as an analysis tool, led to the achievement of the findings of the primary objective.

The following sections summarise the findings of the research.
7.2 Supply Chain Management and Competitive Advantage

The aim of Chapter 2 was to illustrate the role of supply chain management in creating competitive advantage for organisations. In order for this objective to be achieved, a discussion on the development of the concept of supply chain management was required, as well as a definition of supply chain management that would be used as the basis for the study. This was particularly necessary, given the different definitions and interpretations of the concept of supply chain management, both within the literature and in practice. Given its broad nature, the concept of competitive advantage also required discussion. The effect of supply chain management on the development of competitive advantage was then studied through the existing literature on the concept.

The concept and practice of supply chain management developed over time, and followed an evolutionary process that started with the question of how to manage and handle physical goods in the production process. Initially, physical goods were managed through a disparate set of functions, such as procurement, manufacturing inventory, warehousing, materials handling, communication and information, reverse logistics, packaging, finished goods inventory, order processing, transportation, and customer service. Over time these merged into materials management and physical distribution, and ultimately logistics management emerged as an over-arching function through which all of the activities could be managed and coordinated.

The benefits and utility that were generated by logistics management for an organisation led to the realisation that further optimisation could be achieved by extending the logic of coordination to customers and suppliers that the organisation transacted with. This led to integration and collaboration among organisations in the supply chain. At the same time, the lowering of trade barriers and the emergence of developing country competitors with lower cost bases required organisations to become more competitive, and supply chain management emerged as an important area where organisations could drive their competitiveness.

A large number of definitions have been published over time, both in the academic literature and by professional associations concerned with operations, logistics, and
supply chain management. Of all the definitions, this study identified two definitions which, when read together, provide the basis for the definition of supply chain management in the study:

“The management of a network of relationships within an organisation and between interdependent organisations and business units consisting of material suppliers, purchasing, production facilities, logistics, marketing, and related systems that facilitate the forward and reverse flow of materials, services, finances and information from the original producer to final customer with the benefits of adding value, maximising profitability though efficiencies, and achieving customer satisfaction.” (Stock & Boyer, 2009:706) and;

“The integration of key business processes from end user through original suppliers that provides products, services and information that add value for customers and other stakeholders.” (Lambert et al., 1998:1).

These definitions reflect a number of aspects that are fundamental to the understanding of supply chain management. These are the relationships among independent organisations and functions, the involvement of functions outside the scope of logistics management, the flow of finances and information in addition to finished goods, a broad scope encompassing the entire supply chain, the rationale for supply chain management, and the manner in which supply chain management takes place in practice, namely the integration of business processes across multiple organisations in the supply chain.

Competitive advantage was defined as an organisation developing a sustainable advantage over its competitors through strategic and deliberate actions through which its capabilities are leveraged, and value creation is maximised for its customers, which allows it to earn profits that are above the industry average. There are three complementary areas in which competitive advantage can be achieved: relative positions in industry and market power, organisation level resources and capabilities, and resources and capabilities distinctive to a specific relationship.

The broad nature of supply chain management and its influence on all these areas through its management of logistics, marketing, finance, operations and inter-
organisational collaboration indicates that supply chain management has a major role to play in the development of competitive advantage. A large body of evidence was provided, which indicates that supply chain management has a positive and substantial impact on organisational capability, logistics, marketing, and supply chain performance.

Therefore, supply chain management is a critical source of competitive advantage, given its influence over internal functions and inter-organisational processes, relational advantages created through integration and collaboration in the supply chain, the enablement of competitive strategy and positioning within industries, and ultimately its positive impact on overall business and supply chain performance.

7.3 Evaluation and Analysis of the Process-Oriented Supply Chain Management Frameworks

In Chapter 3, the existing process-oriented supply chain management frameworks were identified and analysed, with the aim of selecting the most appropriate framework for the study of supply chain management practices of a major South African confectionery manufacturer.

The concepts of business process management and the process approach to supply chain management were described as the background to the evaluation of supply chain management frameworks. A business process was defined as a structured set of activities with specified business outcomes, and as a structured set of one or more linked procedures or activities that collectively realise a business objective by transforming a set of inputs into a specific set of outputs. The rationale for following a process approach to supply chain management is to make transactions and activities and associated informational, financial, and goods flows more efficient and effective, and to structure inter-organisational relationships in the supply chain.

The implementation of supply chain management was identified as taking place through the integration of major business functions and business processes within and across organisations in the supply chain. The process paradigm implies focusing
on the processes that organisations perform, rather than on functional units, divisions, or the departments that they are divided into. Organisations that had a process orientation were found to experience reduced conflict, greater levels of functional integration, and improved business performance.

The process maturity concept indicates the stages that organisations experience in the extent to which they adopt a process orientation. An understanding of the current state of process orientation within an organisation or supply chain is required in order to develop further the maturity of the business processes. The stages were identified as:

- ad hoc and unstructured processes;
- defined and documented supply chain management processes, but with activities and organisational structure remaining functionally oriented;
- linked processes with cooperation between organisational departments, suppliers and customers;
- integrated processes, where an organisation and its customers and suppliers cooperate on the process level; and
- extended processes, where competition and the development of competitive advantage are based on activities and processes that are jointly managed across the supply chain.

A number of factors were identified that impact on the ability of an organisation to develop its processes and to realise the increases in supply chain performance as a result of adopting a business process orientation. These contingency factors must be considered, because often organisations cannot structure their processes in isolation, but rather the prevailing environmental and industry circumstances will determine how an organisation operates:

- the market in which the organisation is operating;
- technology;
- the size of the organisation relative to its main suppliers, customers, and competitors;
resources;
the expectations of the stakeholders of the organisation; and
the history of the organisation.

The contingency factors that are specifically related to managing inter-organisational processes and the implementation of supply chain management were identified as follows:

- the power and size of the company;
- the relevance of speed and perishability of the product;
- the relative importance of logistics costs;
- the length of the chain;
- the tightness of coupling between the echelons;
- the proximity to final customer;
- the degree of environmental uncertainty; and
- the probability of creating a strategic group.

A review of the literature on the evaluation of process-orientated supply chain management frameworks was conducted. Two of the frameworks, namely the framework developed by the GSCF and the SCC’s SCOR model were analysed, as they included business processes that could be used by the management of an organisation to achieve cross-functional integration, and were described in sufficient detail in the literature to enable the implementation of the framework. Additionally, both GSCF and SCOR were the only frameworks that are supported by major corporations.

The SCOR model is defined as a standardised process model of a supply chain that provides a standardised description of the processes found in a supply chain, which enables the analysis, comparison, and evaluation of supply chains between different companies and different industries. According to the SCC, the SCOR model was published to describe the supply chain at multiple levels of detail, identify best practices, and define associated KPIs for each process, and to provide a basis for consensus on terminology, processes, and expectations among trading partners.
The SCOR model was described as having three primary applications: to evaluate and compare supply chains’ performance potential, to analyse and optimise integrated supply chains, and to determine suitable places for the assignment of software functionality within the supply chain. The logic behind the SCOR model is premised on the supply chain and logistics network being described using five fundamental processes: plan, source, make, deliver, return.

The GSCF defines supply chain management as “the integration of key business processes from end user through original suppliers that provides products, services, and information that add value for customers and other stakeholders” (Lambert, et al., 1998:1). Implementation is carried out through three primary elements and key decision areas: the supply chain network structure, the supply chain business processes, and the management components. The supply chain network structure consists of the member organisations to which key processes will be linked. The supply chain management components determine what level of integration and management should be applied for each process link. The decision associated with the supply chain business processes involves which processes should be linked with each of the key supply chain members identified as forming part of the supply chain network.

The GSCF identified eight key processes that constitute the core of supply chain management: customer relationship management, customer service management, demand management, order fulfilment, manufacturing flow management, supplier relationship management, product development and commercialisation, and returns management. Customer relationship management and supplier relationship management are the critical links in the supply chain to an organisation’s customers and suppliers, with the other six processes being co-ordinated through them.

The respective frameworks were described in detail, and compared according to their scope, strategic alignment, breadth of activities, cross-functional involvement, process and performance benchmarking, and value creation. The relative strengths and weaknesses of the frameworks were also described.

Given the evaluation and comparison of the GSCF and SCOR frameworks, it was found that the SCOR framework focuses on creating operational excellence within the context of the supply chain, and the GSCF framework providing a model for
generating significant benefits through strategically managing inter-organisational collaborative processes in the supply chain. It was further found that there might be a benefit in organisations utilising both frameworks simultaneously, as they are complementary in nature.

Ultimately, the GSCF framework was identified as the supply chain management framework to be used to study the practices of the chosen South African confectionery manufacturer, by virtue of its scope, explicit prescription of collaboration and integration, description of inter-organisational processes, leveraging of supply chain wide learning and knowledge, and the achievement of corporate objectives and creation of EVA as its primary aims.

7.4 The South African Confectionery Industry

In Chapter 4, a detailed description and analysis of the structure, market characteristics, and competitive conditions prevalent in the South African confectionery industry were discussed. The purpose of the chapter was to provide industry background, which the respondent organisation is a part of, and to provide context to the prevailing supply chain environment.

The industry sources its raw materials from commodity markets. The major manufacturers within the industry according to market share by value are Kraft Foods, Nestlé, Tiger Brands, and the Kellogg Company. The balance of the market share is divided between SMEs and importers of foreign manufactured products.

The distribution/resale of products in the industry is concentrated, with 72% of the market share controlled by independent retailers and supermarkets/hypermarkets. The balance of the market share is controlled by convenience stores and specialist retailers.

Investment in branding, differentiation in inherent product characteristics, and price provide the bases for differentiation. The ease of expansion of production and high levels of fixed cost due to mechanised and automated production enhances rivalry.
Buyers are able to negotiate very strongly on price, given the power of supermarket chains in the distribution channel. Supplier power is moderate, given that raw materials are bought on international commodity markets. There is the threat of new entrants, given the growth of the market, and the low level of intellectual property (IP) inherent in the products. There is the threat of substitutes, brought about by health consciousness, which leads to consumers purchasing fresh fruits, and by other snack foods.

The analysis of the industry according to contingency factors for the implementation of supply chain management revealed that the prevailing conditions within the industry are favourable for the integration of inter-organisational processes and information flows. This finding was based on a number of factors:

- the power and size of the manufacturers within the market and their ownership of established brands;
- the relative perishability of the product given that it has short expiry periods and is sensitive to incorrect storage and handling;
- the importance of logistics costs, given the relatively low value of the products, large weight and volume of product being handled, and the long distances that raw material has to travel to production facilities;
- the length of the chain is relatively long, given that the value chain for confectionery products involves the sourcing and transformation of raw materials into finished products, and distribution through multiple channels onto end consumers;
- the manufactures do not have direct access to consumers, and are dependent on retailers for the distribution of their product in the market. Being FMCG products, the timing and volume of demand is dependent on the decisions of individual consumers, which contributes to uncertainty; and
- the interdependence of manufactures and retailers, and the large volume of physical product that needs to be handled increase the probability of creating strategic groupings.
7.5 Description of the Research Methodology

Chapter 5 of this study covered the research design and methodology of the study. The case study method was chosen as the research approach to achieve the objectives of the study, as it allows for holistic and meaningful characteristics of an individual organisation to be identified and understood within a real-life context, through the observation of complex social phenomena within the context of contemporary events. This research approach is particularly relevant to the study of supply chain management, given the complex and systematic nature of its various elements and interactions among functions in an organisation and among organisations in a supply chain.

The organisation chosen to be the focus of the study is one of the three largest confectionery manufacturers in the industry as measured by market share, and is a public multinational organisation manufacturing and marketing FMCG products. The organisation has local manufacturing capacity and performs its manufacturing, marketing, procurement, distribution, and supply chain management functions within South Africa.

The GSCF framework assessment tool was used to conduct the research, which is structured to identify the current practices of the organisation in relation to those contained in the framework. The assessment tool was utilised to conduct a series of face-to-face interviews and discussions with senior members of the respondent organisation's supply chain function.

The assessment tool was successfully conducted at the respondent organisation, with a high degree of cooperation and involvement from the senior management of the supply chain function of the organisation.

7.6 Findings of the Case Study

The findings presented in Chapter 6 represent the achievement of the objective of applying an international supply chain management best practice framework to
identify and critically analyse the state of supply chain management practices in a major manufacturer in the South African confectionery industry. The findings of the study were discussed in detail, as per the activities and sub-processes of the eight supply chain management processes as found in the GSCF assessment tool.

A number of general findings were made on the manner in which the respondent organisation practices supply chain management. These can be divided into positive and negative findings. The organisation has extensively developed customer relationship management and customer service management processes, as defined by the framework. A cross-functional approach is followed in the management of processes, with different departments within the supply chain function, as well as other functional areas participating in the management of processes. Business strategies are established per process, and they are well-known throughout the organisation. Process related procedures are well-documented, with each activity having an SOP detailing how tasks should be carried out. The organisation makes extensive use of metrics and performance goals, covering both process and financial measures.

To a certain extent, conflicts exist among metrics used throughout the organisation, due to the inherent conflicting objectives of different functional areas. Customers generally do not understand how their decisions and actions affect supply chain processes, while suppliers do. The supplier relationship management process is not fully developed according to the practices in the framework.

The study found that the practices described within the GSCF framework are being comprehensively applied by a major, competitive FMCG manufacturer within the South African confectionery industry. This includes extensive integration and collaboration with customers and suppliers, the formal recognition and documenting of supply chain management activities and procedures, a cross-functional approach to the management of processes, extensive measurement of activities, and clearly defined strategies within each area of the supply chain management function within the organisation.
It can be deduced that due to the link between supply chain management and competitive advantage, the organisation has been able to establish and maintain a dominant position in its industry through the implementation of supply chain management. The findings of the study provide the basis for application of the GSCF framework within the context of the South African environment, both as a framework for benchmarking and implementing supply chain management practices.

The findings further indicate that the GSCF framework is a useful and structured way of gathering information and analysing an organisation's supply chain management activities, by providing a set framework of processes and sub-processes that are broken down into specific activities, with an associated assessment tool for conducting the investigation.

The opportunities for improvement that were identified from the analysis of the organisation's supply chain management practices were presented to the respondents of the study. The opportunities for improvement where defined as those activities within each sub-process that were being only partially carried out as per the standard for that activity within the framework.

7.7 Conclusion

In the modern globalised economy, with the lowering of trade barriers and deregulation of markets, business organisations are under immense competitive pressure, both from local rivals and foreign competitors. In an industrial and economic environment where organisations have relatively equal access to the factors of production and information, resource-based strategies have become obsolete. In order for organisations to compete effectively, they need to devise competitive strategies that allow them to develop competitive advantage through a combination of cost leadership, differentiation, dynamic capabilities, relational advantages, cross-functional and inter-organisational learning. Supply chain management is uniquely placed to enable organisations to achieve the establishment of sustainable competitive advantage as a result of its encompassing nature and its
basis of collaboration and integration between an organisation and its key customers and suppliers.

The GSCF framework provides a detailed definition and description of supply chain management and how it is to be implemented in practice, by outlining the processes, strategic and operational sub-processes, and activities which, when carried out in a collaborative environment through a cross-functional approach, allow for the effective management of the supply chain, and the realisation of the benefits that typically arise from it.

Supply chain management has particular relevance for the South African confectionery industry, given the competitive conditions that exist, and contingency factors for the implementation of supply chain management that have been discussed. The respondent organisation should further analyse the findings of the assessment, focus on the areas where opportunities for improvement exist, and develop their practices further in those areas, as per the best practices found within the GSCF framework. The GSCF framework is a useful tool that can be used by manufacturers within the confectionery industry to analyse existing supply chain management practices, and implement processes according to the framework. The framework also has relevance for retailers and distributors within the industry, in that they can develop an understanding of their role in the supply chain, how to facilitate collaboration, drive the integration of processes, and actively participate in practices outlined in the framework, which will ultimately benefit the supply chain as a whole.

### 7.8 Further Research

Based on this study, a number of opportunities exist for further research to take place, they are:

- benchmarking the respondent's supply chain management practices against the SCOR framework, thus providing a comparison to the findings of the GSCF analysis;
• assessing the respondent organisation's practices according to the operational sub-processes found in the GSCF framework, and providing insight into the state of the operational processes and how these relate to the strategic sub-processes;
• conducting a detailed analysis of the respondent organisation's practices according to one of the supply chain management processes contained in the GSCF framework, incorporating both the strategic and operational sub-process;
• identifying and describing the respondent organisation's key customers and suppliers, and conducting an analysis of the current state of the customer relationship and supplier relationship management processes respectively from the customers’ and suppliers’ perspective, according to the GSCF framework; and
• benchmarking the organisation's other international subsidiaries against the practises found within the GSCF framework, both within developed and emerging markets.
LIST OF SOURCES


Annexure

Strategic Customer Relationship Management Sub-Processes from the GSCF Framework Assessment Tool

Extract reproduced as found in the publication: Supply Chain Management: Processes, Partnerships, Performance.

## Customer Relationship Management Process

### S-1 Review Corporate and Marketing Strategy

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- **Do not have a corporate strategy**
- **Have a corporate strategy but we have not examined how it influences the customer relationship management process**
- **Have a corporate strategy and we have examined how it influences the customer relationship management process**

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- **Have a marketing strategy but we have not examined how it influences the customer relationship management process**
- **Have a marketing strategy and we have examined how it influences the customer relationship management process**
S-2. Identify Criteria for Segmenting Customers

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Justification:

Have not identified key criteria for segmenting customers  
Have identified an incomplete set of criteria for segmenting customers  
Have identified key criteria for segmenting customers within business segments (name criteria used in justification)

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S-3. Provide Guidelines for the Degree of Customisation in the Product and Service Agreement (PSA)

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Justification:

Do not document business relationships with customers through formal PSAs  
Customise product and service offerings to customers, but this is done without a written PSA  
Document business relationships with customers through formal PSAs
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## S-4. Develop a Framework of Metrics

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### S-5. Develop Guidelines for Sharing Process Improvement Benefits with Customers

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**Justification:**

- Do not share benefits from process improvements with customers
- Determine how benefits for process improvements will be shared with customers on a project-by-project basis
- Have and use formal guidelines for how benefits from process improvements will be shared with customers