THE IDENTIFICATION OF FACTORS THAT CONTRIBUTE TO THE
COMPETITIVE ADVANTAGE OF THE INTERMODAL INDUSTRY IN THE
NELSON MANDELA METROPOLITAN MUNICIPALITY

by

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Submitted in partial fulfillment of the requirements for the degree of

Masters in Business Administration

at the Port Elizabeth Technikon

Promoter : Prof. L. Radder

December 2003
DECLARATION

I, Jacques Michael de Koker, hereby declare that:

• This work has not previously been accepted in substance for any degree, and is not concurrently submitted in candidature for any degree.

• This paper is submitted in partial fulfillment of the requirements for the degree of Masters in Business Administration.

• The paper is the result of my own independent work, except where otherwise stated. A bibliography is appended.

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Jacques Michael de Koker          Date
ACKNOWLEDGEMENTS

I hereby wish to express my gratitude to the following individuals who contributed to the successful completion of this document:

- To all the individuals and organisations who contributed to the empirical study.
- To my promoter, Prof. Laetitia Radder for her guidance and motivation.
- To Freightdynamics, Port Elizabeth, for affording me the opportunity to further my studies.
- To my family and parents, for their unfailing encouragement and enthusiasm.
- To my wife, Jonita and baby daughter, Tara, for their continual support and encouragement throughout my period of study.
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FACULTY : Management
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ABSTRACT

The research problem addressed in the study was to identify the factors contributing to a competitive advantage in the intermodal industry in the Nelson Mandela Metropolitan Municipality (NMMM). To achieve this objective, a literature study on competitive advantage and the intermodal industry was undertaken.

Porter’s diamond of competitive advantage was used as basis for the study. A structured questionnaire was developed from the literature study on competitive advantage, and interviews were with clients of the intermodal industry in the NMMM. The empirical study showed a strong concurrence with the literature on competitive advantage. This study identified the following factors promoting a competitive advantage: performance factors, demand conditions, related and supporting industries, and the organisation’s strategy, structure and rivalry. In conclusion, recommendations on how the intermodal industry can achieve a competitive advantage included the choice between a focused strategy and a combination of price and differentiation strategy. Further recommendations included the development of a comprehensive land freight information system, promotion of environmental
protection, human resource development, and the promotion of an efficient and competitive intermodal industry within the limits of the road transport infrastructure.

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CHAPTER ONE

INTRODUCTION, PROBLEM STATEMENT AND DEFINITION OF CONCEPTS

1.1 INTRODUCTION

The transport structure in South Africa is in a state of transition from a highly regulated industry in which services were provided by government, parastatals and monopolies, to a less regulated industry with the private sector supplying services in a competitive market. The general purpose of deregulation is to increase competition and efficiency in the affected industries, resulting in lower prices without sacrificing the quality of service.

Since the deregulation of intermodal transport in the ports of South Africa, private road transporters entered this market that was once closed, and served entirely by government until February 2000. The trend in world ports is that terminals are not involved in the delivery of containers, but concentrate on container handling only. The delivery is left to free enterprise, which creates a healthy competitive situation (Hill, 1998:2).

Most observers would probably conclude that, on balance, the net effect of deregulation has been positive. Competition has generally increased, and prices have fallen in industries that were deregulated. (Salvatore, 1996:528). According to the Railroad Association of South Africa (2002:2), deregulation of road transport and the abolition of the restrictive road permit system have led to intense competition in the road freight industry since access has not been controlled.

Currently there are two intermodal transporters serving the majority of the Nelson
Mandela Metropolitan Municipality (NMMM), with smaller operators serving the balance of the market.

At least half of the market is served by government. However, now that the market is open to private enterprise, overcapacity is experienced, with pressure to reduce costs as a result.

The objective was to encourage healthy competition among multiple firms. In many industries such as banking, agriculture, insurance, construction, airlines, railways, trucking and utilities, new regulations prohibited monopolies. Over the years, as antitrust legislation made monopolies less viable, more industries became competitive. Consequently, the monopolistic way of viewing competition became less useful for understanding competitive industry structures (Shrivastava, 1994:46).

For the first time now, clients have a choice between service providers. In the past, government had a monopoly in the intermodal transport market, and clients had no choice other than using the low quality, high priced service offered, but now government needs to compete in a changing environment, where the playing fields are equal and competition is tough. This calls for better pricing and improved service. (Hill, 1998).

The purpose of this study is to identify the factors that contribute to a competitive advantage in the intermodal transport industry, with particular focus on the Nelson Mandela Metropolitan Municipality (NMMM).

1.2 MAIN PROBLEM AND SUB-PROBLEMS

The main problem to be researched in this project was as follows:
“Which factors contribute to a competitive advantage in intermodalism in the Nelson Mandela Metropolitan Municipality?”

The main problem can be expressed in terms of three sub-problems:

1. Which strategic bases of competitive advantage are described in the literature that can be applied to the intermodal transport industry in the Nelson Mandela Metropolitan Municipality?

2. Which strategic bases of competitive advantage are currently employed by the intermodal transport industry to achieve a competitive advantage in the Nelson Mandela Metropolitan Municipality?

3. How can the results obtained from the resolution of the two sub-problems above be integrated into addressing the main problem?

1.3 DEFINITION OF KEY TERMS

The purpose in defining the key concepts is to acquaint the reader with the terms and concepts used in the research.

1.3.1 Competitive advantage

According to Heizer and Render (1999:36), competitive advantage implies the creation of a system that has a unique advantage over competitors. The idea is to create customer value in an efficient and sustainable way.

Porter (1986:20) views competitive advantage as a function of either providing comparable buyer value more efficiently than competitors (low cost), or performing
activities at comparable cost but in unique ways that create more buyer value than competitors and, hence, have a premium price. In order to achieve this, the organisation must perform activities in the value chain more cheaply or in a unique way relative to its competitors.

According to Johnson and Scholes (2002:319), competitive advantage is providing customers with what they want, or need, better or more effectively than competitors, and in ways which their competitors find difficult to imitate.

1.3.2 Intermodalism

Intermodalism is the concept of transporting freight in such a way that all parts and facets of the transportation process, including information exchange, are efficiently linked and coordinated, offering flexibility. The advantage of intermodalism is the ability to logistically and effectively link two or more modes of transportation for the benefit of customers and users (Department of Transport, 1996a).

Taylor and Jackson (2000:3) define intermodalism as the coordinated transport of goods in containers or trailers by a combination of truck and rail, with or without an ocean-going link. Intermodalism thus combines the accessibility of trucks with economic line-haul capabilities of railroads and ocean shipping.

1.3.3 Nelson Mandela Metropolitan Municipality

The Nelson Mandela Metropolitan Municipality includes the areas of Port Elizabeth, Despatch and Uitenhage.

1.3.4 Cost leadership
Cost leadership results when the organisation prices goods and services around the average of the market, and earns profits because its costs are lower than those of rivals (Thompson, 1997:21), or when the organisation works hard to achieve the lowest production and distribution cost, to price lower than competitors and win market share. (Kotler, 2000:80). Thompson (1997:289) adds that cost leadership does not necessarily imply that the company will market the lowest price product or service in the industry. Often the lowest priced products are perceived as inferior, and as such appeal to only a proportion of the market.

Low cost, therefore, does not necessarily mean “cheap” and low cost companies can have upmarket rather than downmarket appeal. Their aim is to secure a cost advantage over rivals, price competitively relative to how their product is perceived by customers, and achieve a high profit margin.

1.3.5 Differentiation

Johnson and Scholes (2002:15) define differentiation as the provision of a product or service regarded by the user as different from, and of higher perceived value than, the competition.

According to Thompson (1997:21), differentiation is where value is added in areas of significance for customers, who then are willing to pay a premium price for the distinctiveness.

1.3.6 Core competence

Johnson and Scholes (2002:156) state that core competences are those competences which critically underpin the organisation’s competitive advantage. Johnson and Scholes (1999:161) provide an example of core competence in the automotive industry. Ford and General Motors dominated the global market in the 1950s and 1960s through the critical success factors of market access, supported by
core competences of establishing dealer networks, and later, overseas plants. In the 1970s, the Japanese manufacturers were outperforming Ford on quality and reliability factors, which allowed them to achieve global sales. In the 1980s, Ford and the major Japanese companies achieved similar competence in achieving these critical success factors. The new critical success factors became the ability to provide unique product designs and features at low volumes of manufacture. This agility in design and manufacturing also became a core competence in global competition.

Hellriegel, Jackson, Slocum and Staude (2001:86) assert that core competences are the strengths that make an organisation distinctive and more competitive, by providing goods or services that have unique value to its customers. Core competences may strengthen the competitiveness of an enterprise by:

- providing access to new markets;
- making a contribution to customers’ perceived benefits from goods or service; and
- making simple imitation difficult if the firm is highly successful.

1.4 DELIMITATION OF THE RESEARCH

The delimitation of the research serves the purpose of making the research topic manageable from a research point of view. The fact that certain topics are omitted does not imply that they are not important or relevant, or that there is no need to research them.

1.4.1 Geographical demarcation
The empirical component of the study was limited to businesses located in the Nelson Mandela Metropolitan Municipality (NMMM).

1.4.2 Demarcation of organisations researched

The scope of the research was limited to stakeholders in the intermodal transport industry.

1.5 IMPORTANCE OF THE RESEARCH

Services make up the bulk of today’s economy, not only in the United States, where they account for 73% of the gross domestic product (GDP), but also in developed industrial nations throughout the world. The transport services industry in South Africa plays a vital role in economic development, and generates over 10% of the country’s GDP. The service sector of the economy is very diverse, and comprises a wide range of different industries. Industries included in the service of industrial consumers and business customers, as well as government agencies and nonprofit organisations, are the wholesale and retail trade, finance, insurance, real estate, transportation, communications, and utilities. (Lovelock, 2000:3).

The transformation of such operations as national airlines, telecommunications, and utilities into private-enterprise services has led to restructuring, cost cutting, and a more market-focused approach. When privatisation is combined with a relaxing of regulating barriers to entry of new competitors, the marketing implications can be dramatic, with foreign competitors moving into markets that were previously closed to outside investment. (Lovelock, 2000:4).
Firms in every industry have some unique and some overlapping resources. They use these resources to create three different types of market environments: monopolistic, oligopolistic, and perfect markets. In a monopolistic market, a single firm dominates the industry. In the oligopolistic industries, a few firms control the entire industry. Each firm is of significant size and power, although some firms may be dominant. Perfect competition refers to industries in which there are many firms. No single firm dominates the industry or enjoys any unique advantage over its rivals (Shrivastava, 1994:45).

In oligopolistic industries such as the intermodal transport industry in the Nelson Mandela Metropolitan Municipality, no one firm controls the market. The importance of the research is to determine the bases of competitive advantage available to an organisation to have an edge on competitors.

1.6 PRIOR RESEARCH ON TOPIC

Through database searches, it was found that little research dealing specifically with the bases of competitive advantage in the intermodal transport industry has been done over the past decade.

Analysts Prahalad and Hamel (1990:81) have given particular attention to gaining competitive advantage. Their research has provided detailed information on the long-run competitiveness of organisations. Competitiveness derives from an ability to produce at lower cost and more speedily than competitors. The real source of advantage is to be found in management’s ability to consolidate corporate-wide technologies and production skills into competencies that empower individual businesses to adapt quickly to changing opportunities.

Another body of content analysis has examined how the freight transport industry can gain a competitive advantage through new technology. Transportation companies, particularly the large multinational operators, have been searching for a competitive
advantage that will give them the edge over rivals. This has led to the introduction of various services such as global coverage, guaranteed delivery times, and total inventory.

These studies have provided only a limited perspective on the bases of competitive advantage in the intermodal transport industry. (Cummings, 1998:28). All the content analyses made a valuable contribution to the literature; but the limited amount of research on gaining a competitive advantage in the intermodal transport industry suggests a need for detail and depth in the topic.

This research is an attempt to add to the detail by focusing on the content analysis of competitive advantage in the intermodal transport industry.

1.7 RESEARCH METHODOLOGY

In conducting the research the following procedure was adopted to solve the main problem and the sub-problems:

1.7.1 Literature study

A literature study was conducted to identify the factors leading to competitive advantage in an organisation. Literature was gathered from the libraries of Port Elizabeth Technikon, University of Port Elizabeth, the Internet, and intermodal transport companies.

1.7.2 Empirical study
• A survey was carried out in the delimited area to determine which base or combination of bases of competitive advantage is being used by service providers.

• The measuring instrument used in the survey was a comprehensive questionnaire developed by the researcher, based on information gained from the literature study.

• A comparison was made between the literature and actual findings to draw conclusions and make recommendations.

The research methodology is discussed in more detail in Chapter four.

1.8 KEY ASSUMPTIONS

In making key assumptions, the researcher leaves nothing to chance, in the hope of preventing any misunderstanding.

The first assumption is that the intermodal service provider can gain a competitive advantage over competitors once the service provider applies the appropriate base or bases of competitive advantage to the specific market segment.

The second assumption is that more value-added services could be offered to the client base as soon as the market survey reveals the services that clients need, but that are not currently offered.

The third assumption is that the bases of the competitive advantage for firms in global industries are also applicable to businesses in the Nelson Mandela Metropolitan Municipality.
1.9 OUTLINE OF THE RESEARCH

The content of the research consists of Chapter one to Chapter five.

Chapter One : The problem statement and definition of key terms
Chapter Two : Theory of competitive advantage
Chapter Three : The intermodal industry in South Africa
Chapter Four : Empirical study and analysis of data
Chapter Five : Conclusions and recommendations

CHAPTER TWO

THE THEORY OF COMPETITIVE ADVANTAGE

2.1 INTRODUCTION

The transport of freight by truck is a huge industry. It is also growing rapidly, fuelled by increasing consumer demand, the growth in multinational companies, and the trend for businesses to concentrate on core activities and contract out of services such as freight transport. The limited reach of other modes of transport means that trucking is by far the most common method of shipment. It is estimated that on a global basis, trucking accounts for around 70 % of the total freight industry. It will come as no
surprise that the freight transport business is ruthlessly competitive. The industry is highly fragmented and, in nearly every country, the vast majority of vehicles are operated by numerous small companies that compete against each other and against the large companies that operate both locally and internationally. At the same time, customers are becoming more demanding. They continue to press for competitive pricing, but are placing growing emphasis on the quality of service they receive, including speed of delivery, better communications and improved documentation. In this environment, transportation companies, particularly the large multinational operations, have been searching for a competitive advantage that will give them the edge over their rivals (Cummings, 1998:2).

Global competitiveness has forced companies to change their business strategy to retain and sustain competitive advantage. The 21st century competitive environment has changed from the past. Up to 1995, managers were able to focus on the internal environment and the local national environment in determining the company’s competitive stance. In a world of increased global competition, managers need to look at international sources of competitive advantage (Thomas, Pollock & Gorman, 1999:70).

Chapter two comprises a literature study of competitive advantage. Creating a competitive advantage is necessary to survive in the ever-changing global world. The idea of sustaining this advantage is just as important, since a competitive advantage that cannot be sustained over any appreciable time is of little value.

Jack Welch, chairman of the General Electric Company, emphasises the reality of advantage: ‘If you don’t have a competitive advantage, don’t compete.’ (Cravens, 1994:35). This is perceived as creating new and better ways to compete in an industry.

2.2 NATIONAL COMPETITIVE ADVANTAGE: PORTER’S DIAMOND
According to Shrivastava (1994:924), national competitive advantage became one of the most important national preoccupations of government and industry. While the concept of a competitive company is clear, the concept of a competitive nation is not. Some people see national competitiveness as a macroeconomic phenomenon, driven by variables such as exchange rates, interest rates and government deficits. Shrivastava adds that national prosperity is created, not inherited. It does not grow out of a country’s natural endowments, its labour pool, its interest rates or its currency value, as classical economics insist. A nation’s competitiveness depends on the capacity of its industry to innovate and upgrade.

Hill (2002:159) declares that Porter’s diamond consists of four broad attributes of a nation, that shape the environment in which local firms compete, and these attributes promote or impede the creation of competitive advantage. These attributes are: factor conditions; demand conditions; related and supporting industries; and firm strategy, structure and rivalry. These factors are shown in Figure 2.1.

Figure 2.1: Porter’s diamond
According to Porter (1990:71) the four groups of factors as shown in Figure 2.1, individually and as a system, create the context in which a nation’s firms are born and compete. The context in which a firm is born and competes can be described as the availability of resources and skills necessary for a competitive advantage in an industry; the information that shapes what opportunities are perceived and the directions in which resources and skills are deployed; the goals of the owner, managers and employees who are involved in or carry out competition; and most importantly, the pressures on firms to invest and innovate. Porter writes that nations succeed in particular industries because their home environment is dynamic and challenging, and hence stimulates and encourages firms to upgrade and widen their advantages over time.

Porter (1990:72) uses the term “the national diamond” when he refers to the determinants as a system. Nations are most likely to succeed in industries or industry segments where the national diamond is most favourable. He goes on to say that the more dynamic the national environment, the more likely it is that some firms will fail, because not all have equal skills and resources, nor do they exploit the national environment equally well. Yet those companies that emerge from such an environment will be successful in international competition. The determinants of the national diamond will be considered individually and examined in more detail.

### 2.2.1 Factors of production

Factor conditions represent the first determinant of Porter’s diamond. According to Hill (2003:160), factor conditions relate to a nation’s factors of production such as skilled labour, location, or the infrastructure necessary to compete in a given industry. Shrivastava (1994:180) argues that factors of production are the input resources necessary to produce goods and services. He adds to Hill’s factors list, raw material,
Factors of production can be grouped into a number of broad categories (Porter, 1990: 74-75):

- **Human resources**: The quantity, skills and cost of all levels of personnel, taking into account standard working hours and work ethic.

- **Physical resources**: The abundance, quality, accessibility and cost of the nation’s land, water, mineral, hydro-electric power sources, and other physical traits. Climate, location and geographic size are included as part of a nation’s physical resources. The time zone of a nation relative to other nations may also be significant in communicating on a global basis.

- **Knowledge resources**: The nation’s attributes such as scientific, technical and market knowledge on goods and services. Examples of knowledge resources are universities, government research institutes, business and scientific literature, trade associations, private research facilities, market research reports and databases.

- **Capital resources**: The amount and cost of capital available to finance an industry. Capital comes in various forms such as debt (secured or unsecured), high risk, high yield bonds, equity and venture capital. Each form of capital has its own varying terms and conditions attached to it.

- **Infrastructure**: The type, quality and user cost of infrastructure available that affects competition, including the transportation system, the communication system, postage system, payments or funds transfer, health care, et cetera. Infrastructure also includes factors that affect the quality of life and the
attractiveness of a country as a place in which to live and work. Examples of such factors are housing, schooling and cultural institutions.

According to Porter (1990:75) firms gain a competitive advantage if they offer products and services embracing low cost differentiation and high quality, which are significant to competition in a particular industry.

To understand the role of the above factors in securing a competitive advantage, Porter (1990:77) discriminates among the types of factors, two important distinctions being between basic and advanced factors.

2.2.1.1 Basic factors of production

Porter (1990:73) is of the opinion that each country possesses or inherits basic factors of production, which are inputs necessary to compete in an industry. Examples of basic factors of production are natural resources, capital, climate, location, unskilled and semi-skilled labour and demographics.

The creation of basic factors of production requires relatively low private and social investment. Basic factors of production may provide an initial advantage for a country’s firms, but are unsustainable, and hence unimportant to national competitive advantage. The lesser importance of basic factors is due to their diminished necessity, their widening availability, and the ready access to them by global firms, through foreign activities or sourcing on international markets. The same considerations make the returns available to basic factors of production low, irrespective of their location (Porter, 1990:71).

2.2.1.2 Advanced factors of production

According to Porter (1990:74), advanced factors of production are created within a nation. Examples of advanced factors are communications infrastructure, skilled
labour, research facilities and technological know-how.

Hill (2003:16) adds that these advanced factors of production are the most significant for a competitive advantage, as, unlike basic factors, advanced factors are a product of investment by individuals, companies and government. They are necessary to achieve high-order competitive advantages such as differentiated quality products and world-class technology. The time it takes to develop advanced factors through investment, and the extent and difficulty of the required investment vary dramatically. The institutions required to create advanced factors need sophisticated human resources and/or technology.

Porter (1990:78) maintains that it is important to recognise that a country’s advanced factors are often built upon basic factors. The relationship between advanced factors and basic factors is complex, as basic factors can provide an initial advantage that is reinforced by investment in advanced factors. Basic factor pools must be sufficient in quantity and quality to allow for the creation of related advanced factors. Furthermore, disadvantages in basic factors can create pressure to invest in advanced factors. (Hill, 2002:160).

Advanced factors are integral to innovation and the design and development of a firm’s products and processes. Porter (1990:78) writes that such activities best take place at the home base and must be closely connected to the firm’s overall strategy. Hence advanced factors are more difficult to procure in global markets or to obtain from afar via foreign subsidiaries.

Porter (1990:78) further distinguishes between generalised and specialised advanced factors of production.

- Generalised factors can be deployed in a wide range of industries and often support only one more common type of advantage. An example of a
generalised factor would be a pool of well motivated employees with tertiary educations. Activities dependent on generalised factors (such as labour intensive assembly operations requiring semi-skilled employees) can often be readily performed at a distance from the home base.

- Specialised factors involve narrowly skilled personnel, infrastructure with specific properties, knowledge bases in particular fields, and other factors relevant to a single industry. Specialised factors are more integral to innovation and provide a more decisive and sustainable base for competitive advantage than generalised factors. According to Porter (1990:79), specialised factors are necessary for more sophisticated forms of competitive advantage and require more focused, and often riskier, private and social investment. Specialised factors are necessary at a firm’s home base and are less effective at a foreign site.

Porter (1990:79) concludes that the most significant and sustainable competitive advantage results when a country possesses factors needed for competing in a particular industry that are both advanced and specialised. The availability and quality of advanced and specialised factors determine the level of competitive advantage that can be achieved. Porter further stresses that the standard for specialisation also tends to rise continuously, as today’s specialised factors tend to become tomorrow’s generalised factors. A factor pool is therefore a depreciating basis for sustainable advantage unless it is constantly upgraded and developed.

2.2.1.3 Production factor creation and deployment

Porter (1990:80) argues that nations succeed in industries where they are particularly
good at creating and, most importantly, upgrading the necessary factors. This would mean that the country possesses high quality institutional mechanisms for specialised factor creation.

He goes on to say that government efforts to create advanced and specialised factors often fail unless they are closely coupled to industry, because government entities are usually slow in identifying new fields or specialised needs. A significant direct investment by firms, as well as close coupling of private and public investments, are characteristics of internationally successful national industries. Porter (1990:81) stresses that no nation can possibly create and upgrade all types and varieties of factors.

The types and effectiveness of creating and upgrading the factors of production depend heavily on other determinants, such as home demand conditions, the presence of related and supporting industries, company goals and the nature of domestic rivalry. The direction of government investment is also strongly influenced by the other determinants.

Porter (1990:76) maintains that the competitive advantage from factors of production depends on how efficiently and effectively they are deployed. This reflects the choices made about how to mobilize factors as well as the technology they use. Factors of production deployment in an economy are crucial, because technological expertise and capable human resources can be utilised in a variety of industries. The availability of factors of production is not sufficient to explain competitive success. Other determinants in the diamond will be necessary to explain where factor advantage translates into international success, because this shapes the way factors are deployed.

2.2.2 Demand conditions
The second determinant of Porter’s diamond is related to demand conditions. According to Hill (2003:160), demand conditions are the nature of home demand for the industry’s product or service. Shrivastava (1994:181) supports Hill, but adds that home demand serves as the stable base to establish businesses and to have the skills that will be needed to succeed in foreign markets. Johnson and Scholes (1999:109) also add that home demand conditions provide the basis on which the characteristics of the advantage of organisations are shaped.

Porter (1990:86) explains that most firms are typically sensitive to the needs of their closest customers. This creates pressures for innovation and quality, and shapes the attributes of domestically made products. Porter goes on to say that nations gain competitive advantage in industries or industry segments where the home demand gives local firms a clearer or earlier picture of buyer needs than foreign competitors can have. Prahalad and Hamel (1990:81) also state that in the short run a company’s competitiveness derives from the price / performance attributes of current products or services. The survivors of global competition, Western and Japanese alike, are, however, all converging on similar and formidable standards for product cost and quality. In the long run, competitiveness derives from the ability to build, at lower cost and more speedily than competitors, the core competences that spawn unanticipated products. The real sources of advantage are to be found in management’s ability to consolidate corporate-wide technologies and production skills into competencies that empower individual businesses to adapt to changing opportunities.

Nations also gain competitive advantage if homebuyers pressure local firms to innovate faster and achieve more sophisticated competitive advantage compared to foreign competitors. Where foreign and home-market needs diverge, signals from the home market usually dominate (Porter, 1990:87). A product’s fundamental or core design nearly always reflects home-market needs. All these considerations make proximity to the right type of buyers of decisive importance in national competitive advantage.
Porter (1990:87) believes that selling to foreign buyers is not a good substitute. When considering demand conditions, it is important to consider a number of factors such as the composition of home demand, demand size and pattern of growth, and internationalisation of domestic demand.

Shrivastava (1994:181) confirms that total demand, rate of growth of demand, distribution of demand across various market segments and price ranges, sophistication, size and number of buyers and size of export characteristics, allow manufacturers to gain competitive advantage by achieving production efficiencies and economies of scale, gaining product design skills and packaging skills, and developing sophisticated marketing and distribution systems. The more variety home country markets offer, the more skilled and flexible home country firms can become.

2.2.2.1 Composition of home demand

There are three characteristics of the composition of home demand that are particularly significant to achieving national competitive advantage, namely segment structure of demand; presence or absence of sophisticated and demanding buyers; and anticipatory buyer needs.

(a) Segment structure of demand

Porter (1990:87) describes the segment structure of home demand as the distribution of demand for particular products or services. He goes on to say that a country’s firms are likely to gain competitive advantage in global segments that represent a large or highly visible share of home demand, but account for a less significant share in other nations. He recognises that the size of segments may be important to national advantage where there are significant economies of scale or learning. Nations in which a segment is largest in absolute terms may gain advantages in reaping economies of scale. However, the absolute size of segments within a nation plays a complicated role in competitive national advantage.
This is because firms compete globally and can achieve a large scale even if their home market is small. Porter explains that the role of segment structure at home is shaping the attention and priorities of a country’s firms. The relatively large segments in a nation receive the greatest and earliest attention from the country’s firms in allocating product design, manufacturing and marketing resources.

Porter (1990:88) adds that one implication of the importance of segment structure is that small nations can be competitive in segments that represent an important share of local demand but a small share of demand elsewhere, even if the absolute size of the segment is greater in other nations. In some industries, the range of segments in the home market influences competitive advantage. In highly engineered or tailored products and services, exposure to a wide range of significant segments at home provides experience that can be used in entering foreign markets.

Porter (1990:89) further argues that the presence of large segments in a nation that requires more sophisticated forms of competitive advantage, is particularly valuable. These large segments provide a visible path for local firms to upgrade their competitive advantage over time. Positions in such segments are more sustainable.

Cummings (1998:3) differs from Porter’s statement and takes the standpoint that the freight transport business is ruthlessly competitive. The industry is highly fragmented and in nearly every country, the vast majority of vehicles are operated by numerous small companies that compete against the few large companies. In this environment, transportation companies have been searching for a competitive advantage that will give them the edge over their rivals. This has led to various services such as global coverage, guaranteed delivery times for time sensitive materials, and total inventory management.
(b) Sophisticated and demanding buyers

According to Porter (1990:89), more important than the segment structure of demand, is the nature of homebuyers. A country’s firms gain competitive advantage if domestic buyers are among the world’s most sophisticated and demanding buyers for the product or service. Cummings (1998:3) acknowledges Porter’s statement by saying that customers are becoming more demanding and continue to press for competitive pricing, but are placing emphasis on the quality of service they receive, including speed of delivery, better communications and improved documentation. Volkswagen South Africa have required and received an on time delivery service from their intermodal service provider, Freightdynamics, for the past three years, at a competitive price justified by economies of scale on the volume of containers transported by road (Amalung, Transport manager, Volkswagen South Africa, Port Elizabeth, 22 January 2003, Personal Communication).

Proximity, both physical and cultural, to these buyers helps a country’s firms perceive new needs. It also allows close contact in the development process and, when buyers are companies, creates opportunities to implement joint development work in ways that are difficult for foreign firms to compete with. Hill (2003:161) states that sophisticated and demanding buyers pressure local firms to meet high standards of product quality and produce innovative products. Porter (1990:89) adds that buyers are demanding when home product needs in an industry are stringent or challenging because of local circumstances, or other reasons such as natural resources availability, taxation and tough regulatory standards. Porter (1990:90) states that buyers also tend to be more demanding when facing competition, than if they are tightly regulated or hold a monopoly. This enhances competitive pressure and stimulates more attention to product innovation and creates greater efforts to control costs.
(c) **Anticipatory buyer needs**

A country’s firms gain advantages if the needs of homebuyers anticipate those of other nations. This means that home demand provides an early-warning indicator of buyer needs that will become widespread. This stimulates continuous upgrading of products over time, and the ability to compete in emerging segments. If home demand is slow to reflect new needs, particularly sophisticated needs, a country’s firms are at a disadvantage (Porter, 1990:91).

2.2.2.2 **Demand size and pattern growth**

Porter (1990:92) asserts that the size and pattern of growth of home demand can reinforce national competitive advantage in an industry, provided that its composition is sophisticated and anticipates international and not only domestic needs. Home market size plays a complex role in national competitive advantage. Porter says a large home market is a strength, because of the existence of economies of scale. The scale effect reflects the natural efficiencies associated with size. Fixed costs and facilities upkeep can be spread over more units. The key to scale economies is to determine the optimal size for an operation.

When the size or demand is less than optimal, a firm can suffer a severe competitive disadvantage. A limited local demand forces firms to export products, creating a competitive advantage in global industries. Other important aspects of home demand are size of home demand, number of independent buyers, growth rate of home demand and early saturation. (Aaker, 1998:188).

(a) **Size of home demand**

According to Porter (1990:93), a large home market size can lead to a competitive advantage in industries where there are economies of scale or learning, by
encouraging a country’s firms to invest in large-scale facilities, technology development and productivity improvements. He states that the size of home demand may be significant in some industries. Local firms often enjoy some natural advantages in serving their home market. Preferred access to a large domestic customer base can be an advantage for investment by local firms. Aaker (1998:187) warns that a common mistake is to assume that scale economies will occur even when a firm’s volume is based on multiple products or brands. According to Porter (1990:93), home-market size is most important to national competitive advantage in certain kinds of industries, especially those with heavy research and development requirements, substantial economies of scale in production, needs for sophisticated technology, or high levels of uncertainty. In such industries, the proximity of a large home demand is comforting in making investment decisions, especially early in an industry’s development. However, large home demand is not an advantage unless it is for segments that are demanded in other countries.

Home-market size is an advantage if it encourages investment and reinvestment. The challenge arising from a large home market providing such opportunities is that firms may see little need to pursue international sales. Porter writes that it may undermine dynamism and become a disadvantage. Other determinants such as the intensity of domestic rivalry are decisive in whether a large home market proves to be strength or a weakness (Porter, 1990:94).

(b) Number of independent buyers

Porter (1990:94) asserts that the presence of a number of independent buyers in a country creates a better environment for innovation than is the case where one or two buyers dominate the home market for a product or service. Thompson (1997:279) differs from Porter, saying that any competitive action by buyers will act to depress industry profits, but specific arrangements with distributors or customers can be mutually beneficial. A number of buyers will each have innovative ideas about what
the service or product buyer needs. This competitive, pressurised environment will increase the knowledge of market information and motivate progress. A number of independent domestic buyers also stimulate the progress of entry and investment into the home market.

The reason for this is that the perceived risk that a firm will be shut out of the market and limit the bargaining power of a dominant buyer, is reduced. Cravens (1994:37) suggests a customer-oriented analysis that includes determining who the customers are, identifying the values they are seeking, comparing the organisation’s performance to its competition, and identifying why customers consider one firm superior to another.

(c) Rate of growth of home demand

According to Porter (1990:94), the rate of growth of home demand can be as important to competitive advantage as its absolute size. The rate of investment in an industry is a function of how rapidly the home-market size is growing. Rapid domestic growth leads a country’s firms to adopt new technologies faster, with less perceivable danger of the investment being made redundant, and to build large, efficient facilities with the confidence that they will be utilised. Thompson (1997:281) supports Porter by adding that slow growth of the industry increases the pressure upon competitors to fight for market share.

(d) Early saturation

Porter (1990:96) says early penetration helps local firms become established. Early saturation forces them to continue innovating and upgrading. A saturated home market creates pressure to cut prices, innovate on product features and performance, and provide other incentives for buyers to replace old products with newer versions. The result is a shakeout of the weakest firms and often the emergence of fewer but stronger local rivals.
2.2.3 Related and supporting industries

Related and supporting industries define the presence or absence in a nation of supplier industries and related industries that are internationally competitive (Hill, 2002:160). According to Johnson and Scholes (1999:110), one successful industry may lead to advantages in related and supporting industries. The reason for this is that the supplier industries produce inputs that are widely used and are important for innovation or internationalisation.

Hill (2003:160) maintains that the benefits in advanced factors of production by related and supporting industries should be transferred into an industry, thereby helping it achieve a strong competitive position internationally. One of the consequences of this is that successful industries in a country tend to be grouped into clusters of related industries. Shrivastava (1994:182) supports Hill by adding that related supplier industries that are themselves internationally competitive, influence national competitive advantage in the global market place. These world-class suppliers help manufacturers provide high quality, innovative products, production flexibility and price advantages.

2.2.3.1 Supplier industries

According to Porter (1990:101-103), the presence of internationally competitive supplier industries in a nation creates advantage in downstream industries in several ways:

- **Access**: Efficient, early and rapid access to the most cost-effective inputs is created.

- **Home based suppliers**: An advantage of home-based suppliers is the ongoing coordination of linkages in the value chain. Foreign suppliers are
rarely a complete substitute, even if they have local subsidiaries.

- **The process of innovation and upgrading:** Competitive advantage emerges from close working relationships between world-class suppliers and the industry. Suppliers help firms perceive new methods and opportunities to apply new technology. Firms gain quick access to information and new ideas and supplier innovations. The exchange of research and development (R&D) and joint problem-solving lead to faster and more efficient solutions.

Through this process, the pace of innovation within the entire national industry is accelerated. All these benefits are enhanced if suppliers are located in reasonable proximity to firms.

According to Porter (1990:103), having a domestic supplier industry is preferable to relying even on well-qualified foreign suppliers, as the home market is highly visible to domestic suppliers. Proximity of managerial and technical personnel, along with cultural similarity, tends to facilitate free and open information flow and reduce transaction costs.

Porter (1990:104) maintains that a country’s firms receive maximum benefit when their suppliers are themselves global competitors, because then the suppliers will wish to upgrade their own advantages, thereby providing the needed technology flow to their home-based customers. Home-based suppliers with international positions are also more valuable sources of information and insights. Porter goes on to say that ‘captive’ suppliers, dependent solely on a firm or the national industry, will provide less motivation to improve or upgrade. Local suppliers that are strong by world standards still affect competitive advantage in downstream industries, even when they are not in industries that compete globally.

### 2.2.3.2 Related industries
Porter (1990:107) writes that national success in an industry is particularly likely if the nation has competitive advantage in a number of related industries. Related industries are those in which firms can coordinate or share activities in the value chain when competing, or those that involve products that are complementary (Porter, 1990:105).

He goes on to say that the presence of an internationally successful related industry in a country provides opportunities for information flow and technical interchange. The presence of a related industry also raises the likelihood that new opportunities in an industry will be perceived. This also provides a source of new entrants, which bring a new approach to competition.

The presence of successfully related industries in a country may also hasten the development of supplier industries that serve both. In 2001 Porter adds to his comment that it becomes all the more important for individual companies to set themselves apart from the pack. The only way to do so is by achieving a sustainable competitive advantage by operating at lower cost and commanding a premium price, or doing both.

Cost and price advantages can be achieved in two ways; one is operational effectiveness and the other is strategic positioning (Porter, 2001:70).

According to Porter (1990:107), the benefit of both the home-based suppliers and related industries depends on the rest of the diamond. Only a few advantages may be obtained without the access to advanced factors, efficient home demand conditions and active rivalry.

2.2.4 Firm’s strategy, structure and rivalry

The third determinant in Porter’s diamond is represented by the firm’s strategy. The
firm’s strategy, structure and rivalry refers to the conditions in the country governing how companies are created, organised and managed, and the nature of domestic rivalry (Porter, 1990:100).

Hill (2002:161) adds two points. The first is that nations are characterised by different management methodologies, which either help or do not help to build a national competitive advantage. Second, there is a strong association between vigorous domestic rivalry and the creation and persistence of competitive advantage in an industry. Vigorous domestic rivalry induces firms to improve efficiency and become better international competitors. Domestic rivalry creates pressure to innovate, improve quality of the product or service, reduce costs, and to invest in upgrading advanced factors.

2.2.4.1 Strategy and structure of domestic firms

According to Porter (1990:108), national circumstances affect the way in which firms are managed and choose to compete. He adds that no one managerial system is universally appropriate. Firms with management practices and organisational structures favoured by the national environment, which are best suited to the industry’s sources of competitive advantage, will tend to succeed. Important national differences in management practices and approaches occur in various areas. Examples are training, orientation of leaders, group versus hierarchical style, decision-making tools, the nature of the relationships with customers, labour and management, the attitude towards international activities and the ability to coordinate across functions. These differences in managerial approaches and organisational skills create advantages and disadvantages in competing in different types of industries. According to Johnson and Scholes (1999:110), in Germany the usage of systematic, often hierarchical processes of management has been successful in providing reliable and technical excellence in engineering industries.

Porter (1990:109) stresses the importance of labour management relationships, as they are directly linked to the ability of the firm to improve and innovate. Many aspects
influence the ways in which a firm is managed. Examples of these are the attitude of people towards authority and management, norms of interpersonal interaction, and social norms of individualistic or group behaviour. Industries will succeed where goals and motivations are aligned with the sources of competitive advantage. According to Porter (1990:110), company goals are more strongly determined by ownership structure, the motivation of owners and holders of debt, the nature of the corporate governance, and the incentive processes that shape the motivation of senior managers. Individual goals reflect the motivation of the individuals who manage and work in firms. Important determinants of individual behaviour and effort are the reward systems under which employees operate, the country’s tax structure, and the attitude towards wealth of the employees in a nation.

Porter (1990:113) states that creating and sustaining competitive advantage in many industries requires ongoing investments to upgrade skills, better understanding of the industry, and exchanging ideas across functions. The attitude of risk-taking is an important aspect of personal goals, which influences the ability to achieve success in particular industries. Some nations, for example Germany and Singapore, view failure as catastrophic, whereas other nations view a failure or two as acceptable.

2.2.4.2 Domestic rivalry

According to Johnson and Scholes (1999:110), domestic rivalry and the search for competitive advantages within a nation can provide organisations with bases for achieving such advantages on a more global scale. Porter (1990:117) argues that domestic competition is unimportant in global industries by saying that nations with leading world positions often have a number of strong local rivals. In global competition, successful firms compete vigorously at home and pressure each other to improve and innovate. Additional economies of scale are obtained by selling worldwide. The scale of the entire national industry becomes as important as that of individual firms.
Porter (1990:117) says domestic rivalry becomes superior to rivalry with foreign competitors when improvement and innovation are recognised as the essential ingredients for competitive advantage in an industry. In a closed economy, monopoly is profitable. In global competition, monopoly will lose out to firms from more competitive environments.

Porter (1990:118-120) conclude that rivalry among firms with the same home base is beneficial for the following reasons:

- Domestic rivalry creates pressures to innovate in ways that upgrade the competitive advantage of a country’s firms. Strong competitors create pressure on each other to improve. One domestic rival’s success proves to others that advancement is possible and also attracts new rivals to the industry.
- Active feuds between domestic rivals are common, and are often associated with international success in an industry. Domestic feuds receive special attention, and the press and investment analysts constantly compare one domestic competitor with another.
- Vigorous local competition pressures domestic firms to sell abroad in order to grow. Where there are economies of scale, local competitors force each other to look abroad for the goal of increasing efficiency and profitability.
- Strong domestic firms are strengthened and become more experienced in competition through domestic rivalry.
- Domestic rivalry also creates advantages for the entire national industry that are external to any particular firm. This enhances innovation with new products and approaches, which builds a defence against foreign penetration.

Thompson (1997:283) writes that to be an effective competitor, a company must:
Appreciate which of the five forces is the most significant – the five forces are discussed under section 2.3;

Position itself for the best possible defence against any threats from rivals;

Influence the forces detailed in section 2.3 through its own, corporate and competitive strategies; and

Anticipate changes or shifts in the forces – the factors that are generating success in the short term may not succeed in the long term.

Porter (1990:122) concludes that the advantages of domestic rivalry are cancelled if there is no effective rivalry among the competitors.

2.2.5 Foreign direct investment

According to Hood and Peters (2000:72), Porter does not allow for the factor of foreign direct investment (FDI), as he regards the domination of an industry by manufacturing activity of foreign-owned firms as a measure of competitive weakness. On the contrary, Hood and Peters (2000:72) say the foreign manufacturing subsidiaries over time may be able to contribute higher value to product and process innovation, as well as the upgrade of the host country’s diamond, to which they belong through development of stronger based linkages. This would benefit the industry in greater exposure to globalisation, and often plays an important role in sustaining local growth and development by driving continuous improvement in the local system of flexible production. Such foreign-owned firms will have an effect on the industry to which they belong.

2.3 THE COMPETITIVE ENVIRONMENT

According to Johnson and Scholes (1999:115), Porter’s five forces analysis is a
means of identifying the forces which affect the level of competition in an industry, and which can be used as a tool to identify competitive strategy in an industry.

These five forces are: the threat of new entrants, the bargaining power of buyers and suppliers, the threat of substitute products or services, and competitive rivalry, as shown in Figure 2.2.

Figure 2.2: The five competitive forces that determine industry competition

Source: Porter (1990:35)

According to Austin and Guthrie (1996:91), understanding these forces allows organisations to take proactive strategic approaches to defend themselves against competitors. Existing internal and external processes can be broken down to identity areas that offer the greatest opportunities for competitive advantage.

Porter (1990:34) confirms that successful organisations respond to the environment
and attempt to influence the environment in their favour. It is the change in industry structure or increasing the firm’s competitive advantage that underlies shifts in the competitive position. The strength of each of the five competitive forces is a function of industry structure or the industry, and how economics and technology affect it. Each force in the industry will later be discussed in more detail.

On the contrary, Thompson (1997:263) write that marketing, operations and personnel are all aspects of the business, and capable of providing a competitive edge that will lead to superior performance and superior profits for profit oriented firms. Thompson sees two aspects of the current position of an organisation as important – the nature and structure of the industry and the position of the organisation within the industry.

2.3.1 Threat of new entrants

The first force in the competitive environment, according to Johnson and Scholes (2002:113), the threat of entry into an industry, will depend on the extent to which there are barriers to entry. Barriers to entry differ by industry, product or market. Austin and Guthrie (1996:92) state that the threat of new entrants is high in industries with low entry barriers. Some examples of entry barriers are as follows:

- **Capital requirement**: The capital cost of entry will vary according to technology and scale. Industries that have low investment costs may see new entrants on a continual basis.

- **Legislation or government action**: Legal restraints on competition vary from patent protection to control of markets by regulation, through to direct government interaction. Johnson and Scholes (2002:105) write that policies of government have also tended to drive the globalisation of industry.

Political changes in the 1990’s meant that all trading nations function with market-
based economies, and their trade policies have tended to encourage free markets.

- **Brand loyalty**: Buyers are often attached to established brands. According to Strickland and Thompson (1999:78), high brand loyalty would mean that a potential entrant must build a network of distributors and dealers and be prepared to spend money on advertising and sales promotions to overcome customer loyalties.

- **Access to distribution channels**: In the case of consumer goods and intermodal transport services, a potential entrant may face the barrier of gaining access to customers. Strickland and Thompson (1999:79) state that new entrants may have to ‘buy’ distribution access by offering better margins to dealers and distributors. This may have negative effects on a potential entrant’s profit margin, if the product does not gain acceptance. Thompson (1997:276-278) justifies Strickland and Thompson’s statement by adding that if there is a need for substantial investment to allow a new entrant to achieve cost parity with existing firms, this may well be a deterrent. If a newcomer enters the market with only limited investment and is not able to achieve economies of scale, he/she will be at a cost disadvantage from the start. To Johnson and Scholes’s list of entry barriers Thompson adds economies of scale, product differentiation, switching costs, and cost advantages independent of scale.

### 2.3.2 Bargaining power of buyers and suppliers

The bargaining power of buyers and suppliers can be considered together because they are linked. According to Johnson and Scholes (2002:117), buyer bargaining power is likely to be high when:

- There is a high concentration of buyers, particularly when the volume
purchases of the buyers are high;

- The supplying industry comprises a large number of small operators;

- There are alternative sources of supply;

- Buyers are well informed about sellers’ products, prices and costs and therefore have a better bargaining position; and

- The cost of switching a supplier is low or involves little risk.

According to Johnson and Scholes (2002:11) and Austin and Guthrie (1996:92), supplier bargaining power is likely to be high when:

- There is a concentration of suppliers rather than a fragmented source of supply;

- The cost of changing from one supplier to another, is high;

- The supplier’s customers are highly fragmented, so their bargaining power is low; and

- The product or service is not easily available to customers.

2.3.3. Threat of substitute products or services

Strickland and Thompson (1999:81) assert that readily available and attractively priced substitutes create competitive pressure by placing a ceiling on the prices an industry can charge for its products. Owing to different costs of the various modes of
transport, it is frequently economically desirable to transfer shipments of containers from one mode of transport to another while in transit from origin to destination. These transfers provide a means of utilising the inherent advantages of the various modes in combination, in order to reduce total cost and/or improve the service on a particular shipment (Lieb, 1985:141). This pressurises industry members to reduce their prices and find ways to absorb price cuts. Another determinant of the strength of competition from substitutes is how difficult or costly it is for the industry’s customers to switch to a substitute. According to Johnson and Scholes (1999:120), the threat of substitution may take different forms:

- Product-for-product substitution with the aid of technological advances. An example of this is the digital video display (DVD) rendering the compact disc (CD) redundant, as the CD did to the vinyl record that came before it.

- Substitution of need by a new product or service, replacing an existing product or service. An example is when the transport of containers by road is replaced by rail transport.

- Generic substitution occurs where products or services compete for need.

2.3.4 Competitive rivalry

The fifth competitive force is that of competitive rivalry. According to Johnson and Scholes (1999:120), organisations need to take note of the extent of direct rivalry between themselves and competitors. The most competitive conditions will be those in which entry is likely, substitutes threaten, and buyers or suppliers exercise control.

According to Strickland and Thompson (1999:74), some industries rival each other in price competition, sometimes resulting in prices below the level of unit costs, which may force losses onto most rivals. In other industries, rivalry is focused on factors like product innovation, quality, durability, performances features, services and brand
loyalty. According to Johnson and Scholes, 1999: 121-123), other forces that affect rivalry are:

- **The extent to which competitors are in balance**: Where competitors are of roughly equal size, there is a danger of intense competition as one competitor attempts to gain dominance over another.

- **Market growth rates may affect rivalry**: In situations of market growth, an organisation might expect to achieve its own growth through the growth in the market place. In situations where markets have matured, market growth may have to be achieved by taking market share from competitors.

- The existence or development of *global customers* may increase competition among suppliers as they try to win their business on a global scale.

- **High fixed costs** are likely to result in competitors cutting prices to obtain the turnover required.

- **Differentiation**: In commodity markets where products or services are not differentiated, there is little to stop customers switching between competitors.

- **Exit barriers**: An example of an exit barrier is a high investment in non-transferable fixed assets such as a specialist plant.

### 2.4 SOURCES OF COMPETITIVE ADVANTAGE

Day and Wensley (1988:30) view competitive advantage as a dynamic process rather than an outcome. The process shown in Figure 2.3 includes sources of advantage, positional advantages, and performance outcomes and investment of profits to sustain advantage. Only sources of advantage are being described by the researcher
for the purpose of this study.

Figure 2.3: The elements of competitive advantage

![Diagram of competitive advantage elements]

Source: Day & Wensley (1988:30)

The sources of advantage are superior skills, resources and controls. Superior skills enable an organisation to select and implement strategies that will differentiate the organisation from its competition. Skills include technical, managerial and operational capabilities.

For example, knowledge of customers needs and requirements helps a company to use its capabilities to satisfy its customers. Superior resources are the enabling dimensions of advantage. Examples include strong distribution networks, production capability, marketing power (experienced sales force), technology and natural resources. The monopoly position of Portnet until 2000 enabled the company to control the flow of containers and prices of intermodal tariffs. Superior controls include capabilities in monitoring and analysing business processes and results. For example, superior cost controls constrain costs and identify areas where management assessment and action are needed. Control systems also provide performance benchmarks. Monitoring efforts should extend beyond internal operations to include customers, competition and distribution networks.

Companies with powerful computerised information systems have superior control.
Freightdynamics, the largest intermodal transporter in South Africa, uses the J.D. Edward system to control costs and monitor revenue, as well as to track and trace deliveries. "We need a powerful computerized information system to have the competitive edge in the industry" (Du Plessis, Regional manager, Freightdynamics, Port Elizabeth, 30 January 2003, Personal Communication).

Porter (1990:40) holds that competitive advantage grows out of the way firms organise and perform discrete activities. Johnson and Scholes (1999:455) say the competences needed by an organisation will vary according to the competitive strategy of the organisation. To gain competitive advantage over its rivals, a firm must either provide comparable buyer value but perform activities more efficiently than its competitors (lower cost), or perform activities in a unique way that creates greater value and commands a premium price (differentiation). Johnson and Scholes (1999:456) define differentiation as 'the understanding of customer needs and being able to provide these product features and services'.

Figure 2.4 shows the activities performed in competing in a particular industry. Collectively these activities are known as the value chain.

Figure 2.4 : The value chain

Source: Porter (1990: 41)
According to Strickland and Thompson (1999:115), the value chain starts with the raw material supply, and continues on through parts and component production, manufacturing and assembly, wholesale distribution, and retailing to the ultimate end user of the product or service. The value chain includes a profit margin or markup over the cost of performing the firm’s value-added activities as part of the buyer’s price. Creating value that exceeds the cost of performing the activity is an important business objective. Hill (2002:408) supports Strickland and Thompson’s statement by adding that the more value customers place on the organisation’s product or service, the higher the price the organisation can charge. The organisation can create more value by lowering production cost or by making the product or service more attractive in terms of quality, superior design, service and functionality. According to Johnson and Scholes (1999:455-456), a low price positioning will need to have real cost advantages in the value chain. Innovation is crucial with regard to survival in cost reduction.

All the activities in the value chain contribute to buyer value. Every activity employs purchased inputs, human resources, and technology combinations, and depends on the firm’s infrastructure, for example general management and finance.

Porter (1990:41) adds that the strategy guides the way a firm performs individual activities and organises its entire value chain. Firms gain competitive advantage from devising new ways to conduct activities, employing new procedures, new technologies or different inputs. Activities vary in their importance to competitive advantage in different industries (Porter, 1990:41).

Competitive advantage is likely to be attained through multiple linkages within the value chain. One activity performed can spill over to affect the cost and effectiveness of other activities. Hence, the value chain can be seen as an independent network of activities, connected by linkages (Porter, 1990: 41).
Linkages often create trade-offs in performing different activities that must be optimised. A company must resolve such trade-offs in accordance with its strategy to achieve competitive advantage.

These linkages also require activities to be coordinated. Porter (1990:42) suggests that coordination reduces the combined time to perform the activities, and increases competitive advantage.

Porter (1990:42) stresses that careful management of linkages can be a decisive source of competitive advantage. Strickland and Thompson (1999:116) state that it is normal for the value chains of rivals to differ. This condition complicates assessing a rival’s relative cost position, as the firm may have difficulty perceiving the linkages of the rival. Obtaining the benefits of linkages requires both complex organisational coordination and resolution of difficult trade-offs across organisational lines.

Gaining a competitive advantage requires that a firm’s value chain is managed as a system rather than a collection of separate parts. Reconfiguring the value chain, by relocating, reordering, regrouping, or even eliminating activities, is often at the root of a major improvement in competitive position.

Strickland and Thompson (1999:118) hold that a company’s value chain is embedded in a larger system of activities that includes the value chain of its upstream suppliers and downstream customers, or allies engaged in getting its product to end users. Linkages not only connect activities inside a company but also create interdependencies between a firm and its suppliers and channels. A company can create a competitive advantage by better optimising or coordinating these links to the outside through the value chain system for an entire industry, not just the company’s own value chain (Porter, 1990:42).

Porter (1990:43) says the value chain provides a tool for understanding the source of
cost advantage. Successful cost leaders draw cost advantages from throughout the value chain. Gaining cost advantage also usually requires optimising the linkages among activities, as well as close coordination with suppliers and channels. He also shows how the value chain exposes the sources of differentiation. Differentiation results from the way a firm’s products, associated services and other activities affect its buyers’ activities. The varying bases for differentiation in different industries will prove important to national competitive advantage.

According to Porter (1990:44), the value chain allows a deeper look at the role of competitive scope in gaining competitive advantage. Scope shapes the nature of a firm’s activities, the way in which they are performed, and how the value chain is configured. A firm’s collaboration or partnership with its suppliers to reduce supplier costs or improve supplier effectiveness, can enhance the firm’s own competitiveness (Strickland & Thompson, 1999:118-119).

Porter (1990:43) concludes that a prominent reason why firms gain competitive advantage is that they choose a different scope from competitors, by focusing on a different segment, altering geographic breadth, or combining the products of related industries.

2.5 CREATING COMPETITIVE ADVANTAGE

Competitive advantage is created by perceiving or discovering new and better ways to compete in an industry and bringing them to the market (Porter, 1990: 45). This can be described as innovation, which, according to Porter, includes improvements in technology and better methods or ways of doing things. According to Waits (2000:37), the business world’s term for innovation has been reduced to a simple statement – “Innovate or perish”. Nations that organise their knowledge (research and development activities, specialised workforces and unique business infrastructure) to
support industry innovation are most likely to capture technology-driven, globally competitive industries. Innovators not only respond to possibilities for change, but also force it to proceed faster. This will involve investment in developing skills and knowledge, and usually in physical assets and marketing effort. Innovation shifts competitive advantage when rivals either fail to perceive the new way of competing or are unwilling or unable to respond. Porter (1990:45-47) describes the most typical causes of innovations that shift competitive advantage in terms of new technologies, new or shifting buyer needs, the emergence of a new industry segment, shifting input costs or availability, and changes in government regulation.

2.5.1 New technologies

Technological change can create new possibilities for the design of the product, the way it is marketed, produced or delivered, and the ancillary services provided. According to Waits (2000:37), technological change is one of the fundamental forces causing structural shifts in the economy. Technology can create or destroy industries.

2.5.2 New or shifting buyer needs

Competitive advantage shifts is created when buyers develop new needs, or their priorities change significantly.

Established competitors may fail to perceive the new needs or be unable to respond because meeting them demands a new value chain (Porter, 1990: 46).

2.5.3 The emergence of a new industry segment

The opportunity arises when a new distinct segment of an industry emerges, or a new way is conceived to regroup existing segments. The possibilities encompass not only new customer segments but also new ways of producing particular items in the product line, or new ways to reach a particular group of customers (Porter, 1990: 46).
2.5.4 Shifting input costs or availability

Competitive advantage frequently changes when a significant change occurs in the absolute or relative costs of input such as labour, raw materials, energy, transportation, communication, media or machinery.

According to Strickland and Thompson (1999:87), the widening and shrinking differences in the cost and efficiency among key competitors tend to alter the state of competition. This may reflect new conditions in supplier industries or the possibility of using a new or different type of quality of input. A firm gains competitive advantage by optimising opportunities based on the new conditions, while competitors are left with assets and approaches linked to the old conditions.

2.5.5. Changes in government regulation

Adjustments in the nature of government regulation, in such areas as product standards, environmental controls, restrictions of entry and trade barriers, are other common stimuli for innovation, which may result in competitive advantage. According to Strickland and Thompson (1999:88), in international markets, host governments can drive competitive changes by opening up their domestic markets to foreign participation, or closing them to protect domestic companies.

2.6 SUSTAINING COMPETITIVE ADVANTAGE

According to Strickland and Thompson (1999:135), a company’s competitive strategy consists of its business approaches and initiatives to attract customers and fulfill their expectations, to withstand competitive pressures, and to strengthen its market position. As mentioned in Chapter one, Porter (1986:20) views competitive advantage as a function of either providing comparable buyer value more efficiently than competitors (low-price strategy), or performing activities at comparable cost but in unique ways that create more buyer value than competitors (differentiation
strategy). Aaker (1998:38) investigates why a sustainable competitive advantage is necessary, and concludes that a useful operational criterion is whether or not a sustainable competitive advantage exists as part of the strategy. He says that unless an organisation has or can develop a real competitive advantage that is sustainable over time, an attractive long-term return will be unlikely. Table 2.1 shows the competences and management styles needed to support a strategy of low price and of differentiation.

Table 2.1: Competences and management styles

<table>
<thead>
<tr>
<th>LOW-PRICE STRATEGY</th>
<th>DIFFERENTIATION STRATEGY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underlying Competences</td>
<td>Underlying Competences</td>
</tr>
<tr>
<td>‘Process’ design</td>
<td>‘Product’ design</td>
</tr>
<tr>
<td>Labour supervision</td>
<td>Marketing</td>
</tr>
<tr>
<td>Easily produced ‘products’</td>
<td>Creative flair</td>
</tr>
<tr>
<td>Low-cost distribution</td>
<td>Research capability</td>
</tr>
<tr>
<td><strong>Requiring</strong></td>
<td><strong>Requiring</strong></td>
</tr>
<tr>
<td>Tight cost control</td>
<td>Looser control</td>
</tr>
<tr>
<td>Detailed reporting</td>
<td>Simpler reporting</td>
</tr>
<tr>
<td>Highly structured tasks</td>
<td>Strong coordination</td>
</tr>
<tr>
<td>Quantitative targets</td>
<td>Market-based incentives</td>
</tr>
</tbody>
</table>

Source: Johnson and Scholes (1999:455)

In order to sustain a competitive advantage, the competences needed by an organisation vary according to the strategy of the organisation (Johnson & Scholes, 1999: 455-458):

- A low price positioning will need to have cost advantages on one or more of its underlying competences. All this requires a mindset where innovation in cost
reduction is regarded as essential to survival. One driver of a low cost strategy is an optimal facility that is effectively utilized (Markides, 1997: 20). Identifying the optimum size can allow firms to spread overhead cost over enough units, to drive down costs and provide a cost advantage. Low cost leadership entails achieving maximum value defined by the customer (Heizer & Render, 1999:37).

• For a differentiation strategy, understanding the needs of the customer is crucial. The business must also have the ability to transform the customer’s need into appropriate products or services. The value chain is of importance here, as differentiation is likely to be achieved through multiple linkages within the value chain. This stresses the importance of creativity and the management of products and process innovations throughout the value chain. According to Strickland and Thompson (1999:106), some of the competitive capabilities for a differentiation strategy are: short development times in bringing new products to the market; organisational agility in responding to shifting market conditions; research and development of organisations with the ability to keep the company’s pipeline full of innovative new products. David (2001:180) adds that differentiation is a strategy aimed at producing products or services which are considered unique industry-wide, and directed at customers who are relatively price-insensitive. An example of this is Freightdynamics, an intermodal service provider in the Nelson Mandela Metropolitan Municipality, that acquired side-loader equipment to add value to the Eastern Cape intermodal operation. The side loaders were bought to distinguish Freightdynamics from other intermodal service providers (Le Roux, Regional commercial manager, Freightdynamics, Port Elizabeth 31 January 2003, Personal Communication).

• Switching costs may be built into products or services. This will improve the business’s competitive standing as the actual or perceived cost to a buyer of changing source of supply may be high, thus allowing the business to achieve
a differentiated position in the market.

2.6.1 Sustaining low price advantage

Aaker (1998:181) agrees that sustaining a competitive advantage through low price is dependent on low cost. Although there is a tendency to think of low cost as a single approach, such as scale economies, low labour cost, or production automation, it is important to recognize that there are many methods of achieving a low cost advantage. Figure 2.5 shows some of the low cost methods that firms can apply in following multiple approaches.

Figure 2.5: Methods of achieving low cost

![Diagram showing methods of achieving low cost]

Source: Aaker (1998:182)

The aim of the organisation in choosing a low cost strategy, is to sustain reduced prices over competition. It can be achieved through a larger market share, because it provides an organisation with cost advantages through economies of scale. Experience curve economies are also important to achieve a low cost approach.
Organisations that move fastest down the experience curve should be operating at a lower cost per unit (Johnson & Scholes, 2002:333).

Hill (2003:411) explains that an organisation’s production costs decline as accumulated output doubles. The learning effect is that cost savings come from learning by doing. The labour force learns by repetition, while labour productivity increases over time as individuals learn the most efficient way.

2.6.2 Sustaining differentiation-based advantage

David (2001:181) asserts that different strategies offer different degrees of differentiation. Differentiation does not guarantee a competitive advantage, especially if standard products meet the customer’s needs, or if imitation by competitors is possible. Durable products protected by high barriers of entry to quick copying by competitors are best. A successful differentiation strategy allows an organisation to charge a higher price for its products and to gain customer loyalty.

Conditions to sustain differentiation include the following:

- Difficulties of imitation based on core competences. The reason for this include:
  - **Complexity**: With differentiation, superior performance is achieved by serving customer needs differently, ideally uniquely. The more unique the difference, the more sustainable is the advantage. The competences upon which a successful strategy is based are too complex for competitors to comprehend (MacMillan and McGrath, 1997:135 – 139).
  - **Casual ambiguity**: Even if a potential imitator can discern what the linked competences of a successful strategy are, it may still be
difficult to see why they give rise to the success that they do (Johnson & Scholes, 2002:337).

- **Cultural differences**: Real competitive advantage implies that companies are able to satisfy customer needs more effectively than their competitors. Because few individual sources of advantage are sustainable in the long-run, the most successful companies innovate and continually seek new forms of advantage in order to open up a competitive gap and then maintain their lead. Successfully achieving this is a cultural issue when competences are culturally embedded deep down in the organization (Thompson, 1997:21).

- Imperfect mobility may result where:
  - Intangible assets such as brand image or reputation are difficult for a competitor to obtain.
  - Switching costs are the actual or perceived cost for a buyer when changing the source of supply. The buyer might be dependent on the supplier for particular components, services or skills, or the benefits of switching may not be worth the cost of risk.
  - Co-specialisation also results in imperfect mobility; for example, if one organisation’s resources are intimately linked with the buyer’s organization (Johnson & Scholes, 2002: 336-337).

Strickland and Thompson (1999:104) state that sustainable competitive advantage can be created in many ways. The work of business-strategy writers such as Gilbert
and Strebel and Porter has, however, drawn attention to the reality that competitive advantage has only a few basic roots. These roots are regarded as inherent in generic competitive strategies. Generic competitive strategies are based on choices that have to be made along three dimensions of competitive strategy. The three dimensions are high perceived value, low delivered cost, and scope.

- *High perceived cost* is the extent to which the company will compete on the relative differentiation of its products or services. Their uniqueness and valued differentiation form competitive offerings.

- *Low delivered cost* is the extent to which the company will compete on the relative cost-in-use of products or services. Such firms must be driven by a desire to minimise cost at every stage of product or service delivery.

- *Scope* is the extent to which the company chooses to define the scope of its business. Organisations may choose to invest in a strategy that involves broad industry scope, or to focus on a segment of the market.

### 2.7 THE BASE OF COMPETITIVE ADVANTAGE: THE ‘STRATEGY CLOCK’

After the organisation has determined the forces at work in the business environment, the internal capabilities of the organisation and the expectations and influences of stakeholders, it is important to develop a strategy. The influences mentioned above are not necessarily compatible, but are likely to be conflicting. These potential conflicts are unavoidable, and successful organisations reconcile them better than unsuccessful ones.

#### 2.7.1 Competitive strategy
Strategies allow organisations to gain competitive advantage from three different bases – cost leadership, differentiation, and focus. Porter calls these bases ‘generic strategies’ (David, 2001:180).

If the organisation’s growth is to be profitable it must be founded on a strategy to create competitive advantage. A competitive advantage is developed by exploiting the firm’s unique competences. Management should look for growth opportunities that match its organisational capabilities. To set strategy, the management team needs to undertake three steps:

- Assess the organisation’s resources and capabilities;
- Search for growth opportunities that exploit resources; and
- Develop the resource base.

In developing a competitive strategy management will be made aware of resource gaps which need to be filled. It will need training programmes and will have to recruit new talent with specialist knowledge, develop additional technologies, and form new relationships with customers (Doyle, 2000:135).

Johnson and Scholes (2002:319) define competitive strategy as the basis on which an organisation might achieve a competitive advantage in its market. Organisations achieve a competitive advantage by providing their customers with what they want, or need, better or more effectively than competitors, and in ways which their competitors find difficult to imitate. Assuming the products or services of different businesses are equally available, customers choose to purchase from one source rather than another either because the price is lower than the competitor’s, or the product or service is perceived by customers to provide better added value or benefits.

Although these are broad generalisations, the generic strategic options to achieve competitive advantage flow from them. Figure 2.6 shows the competitive strategy
options available to organisations.

Figure 2.6: The strategy clock: Competitive strategy options

Source: Johnson & Scholes (2002:320)

2.7.1.1 Price based strategies – routes one and two

Figure 2.6 shows that route one is a ‘no frills’ strategy which combines low price, low perceived added value, and a focus on a price-sensitive market segment. According to Johnson and Scholes (2002:319-322), route one seems unattractive, but there are successful organisations applying it. There may well exist a segment of the market which, while recognising that the quality of the product or service might be low, cannot afford to, or chooses not to, buy higher quality goods. Businesses seek to achieve market entry through route one, and use it as a bridgehead to build volume before moving to other strategies. Johnson and Scholes write that the most profitable retailer in the UK, Matalan, follows a ‘no frills’ strategy.

The merchandise range is limited, with few speciality products and very low prices.
Johnson and Scholes (2002:322) explain that route two, the low price strategy, seeks to achieve a lower price while trying to maintain the same value as that offered by competitors. If a business aims to achieve a competitive advantage through a low price strategy, it has two choices in trying to achieve sustainability. The first option is to identify and focus on a market segment which is unattractive to competitors, and in this way avoid competitive pressures so as to erode prices below levels which would achieve acceptable returns. The second option is a situation where there is competition on the basis of price. This is a common occurrence for firms with commodity-type products or services. Advantages may be gained by lowering the price; but such an action is likely to be followed by competitors, which, in turn, would lead to margin reductions across an industry and an inability to reinvest to develop the product or service for the long term. A low price strategy can only be pursued with a low cost base. However, low cost is not a basis for advantage if competitors can also achieve the same low costs. The need is for a low cost base which competitors cannot match. This is no easy task, but there are some ways in which it might be possible.

Hellriegel et al (2001:93) suggest the following actions to reap benefits from a low price strategy:

- usage of facilities or equipment that yield high economies of scale;
- constantly striving to reduce per unit overhead costs;
- minimising labour-intensive personal service and sales forces; and
- avoiding customers whose demands would result in high personal selling or service cost.

High volume and/or rapid growth are needed for profitability with the low price strategy.
2.7.1.2 The hybrid strategy – route three

Johnson and Scholes (2002:326) say that the hybrid strategy simultaneously achieves differentiation and a price lower than that of competitors. The success of the strategy depends on the ability to understand and deliver enhanced value in terms of customer needs, while also having a cost base that permits low prices and is sufficient for reinvestment to maintain and develop bases of differentiation.

Johnson and Scholes (2002:237) add that, if differentiation can be achieved, there should not be a need to have a lower price, since it should be possible to obtain prices equal to the competition, if not higher. The hybrid strategy could be advantageous where:

- Greater volumes than competition can be achieved, with margins still attractive because of a low cost base.

- It is possible to be clear about core competences on which differentiation can be built, and then reduce cost on other activities.

- There is a market segment which also facilitates a low price approach.

- It can be used as an entry strategy in a market with established competitors. This is a strategic approach to new market development.

In following a hybrid strategy it is important to ensure that:

- the overall cost base is such that low margins can be sustained; and

- a clean follow-through strategy has been considered when entry has been achieved.
2.7.1.3 Differentiation strategies – route four

Johnson and Scholes (2002:322) assert that differentiation is concerned with providing uniqueness. An organisation’s opportunities for creating uniqueness are not located in a particular function or activity, but can arise in virtually everything that the organisation does. Differentiation should be thought of as going beyond both physical characteristics and service attributes, to encompass everything about the product of service that influences the value that the customer derives from it. Effective operations managers can assist in defining everything about a product or service that will influence the potential value to the customer.

Slack, Chambers and Johnston (2001:116) add that the purpose of designing products and services is to satisfy customers by meeting their actual needs and expectations. The design of services enhances the competitiveness of the organisation, while the task of marketing is to gather information from customers in order to understand and identify their needs and expectations, and also to look for market opportunities. Following this, the task of the product and service designers is to take those needs and expectations and create a specification for the product and service. Figure 2.7 illustrates this by means of the customer-marketing design feedback loop.

Figure 2.7: The customer marketing-design feedback loop
The product or service offered can differentiate itself through convenience of location, product delivery and installation, or repair and maintenance service (Heinzer & Render, 1999:36-37).

As competition intensifies in the service sector, it is becoming more important for service organisations to differentiate their products in meaningful ways (Mentzer, Flint and Hult, 2001:82 - 83). First and foremost, a business must set itself apart from its competition. To be successful in doing this, it must identify and promote itself as the best provider of attributes that are important to target customers (Lovelock, 1996:164).

Doyle (2000:163) holds the view that differentiation has been a more effective way of increasing returns to shareholders than cost-based strategies. These firms pursued strategies based on innovation, superior service and brand loyalty. He says that cost based strategies are more vulnerable for two reasons.

First, rapid change has meant that cost advantages based on scale and experience are often undermined by competitors innovating in terms of even lower-cost processes or distribution channels. Second, low cost technology and systems have speedily been copied by competitors. Developing a value-creating differentiation advantage is no easy task. Companies tend to overestimate the uniqueness of their offers and perceive their products or services as superior. Unfortunately, it is not their perceptions which count, but rather those of the customer. Differentiation occurs only if customers are willing to pay a price premium. If customers are unwilling to pay a price premium, then the company does not have a differentiation advantage. The key requirement is customers being willing to pay more. If a business has such an advantage, then management has three strategies to choose from:
• Charge the full price premium, by increasing the price to the point where it just offsets the improvement in customer benefits;

• Keep prices at the level of competitors, and use it as an advantage to gain market share, or

• Price above competitors but below the full premium, to gain a combination of unit margin improvement and market share.

Unless the firm gains sufficient premium or additional share to cover the additional costs and investment, there is no added value (Doyle, 2000:164).

(a) The sources of differentiation

The sources of differentiation can be grouped into three categories. The first is product or service leadership, where customers perceive the company offer as of higher quality or more innovative. The second is customer intimacy, or one-to-one marketing, where buyers see the company as being able to customise its offer to their personal requirements, and deal with them on an individualised basis.

The third is brand leadership, where the company’s offer has emotional value beyond what can be explained by their product or service performance. Successful differentiation is based on the firm’s resources and capabilities, while progress in building these resources and capabilities should be monitored by the choice of lead indicators (Doyle, 2000:163-165).

Competing on differentiation may be achieved through the following approaches:

- *Uniqueness or improvement in products*: Investment in research and design, design expertise, investing in technology or design to achieve greater reliability, product life or performance.
• Marketing-based approaches: Here the strategy is likely to build on power of the brand or promotional approaches.

• Competence-based approaches: Where the organisation tries to build differentiation on the basis of its competences.

The extent to which these approaches will be successful is likely to be dependent on the following factors:

• The identification of who the customer is.

• The extent to which the organisation understands what is valued by the customer, user or stakeholder group. A differentiating factor for an organisation may be the ability of managers to be closer to the market than competitors, to better sense and respond to customer needs.

• It is important to be clear who the competitor is. Is the business competing with a wide competitor base or with a much narrower base? In the latter case, a focused differentiation strategy may be appropriate. In the case of broad-based differentiation, it is appropriate to concentrate on bases of differentiation commonly accepted in the industry or the market.

• The extent to which the bases of differentiation are difficult to imitate.

• Customer needs change, and therefore the bases of differentiation may need to change. The implication is that businesses following a differentiation strategy may have to review their bases of differentiation continually, and keep changing.

• As markets globalise, competitors erode the bases of differentiation (Johnson
The long-term effectiveness of the differentiation strategy depends on how easily competitors can imitate the unique benefits.

As soon as most or all competitors imitate the offering, it is no longer an effective means of differentiation (Hellriegel et al, 2001:93).

2.7.1.5  Focused differentiation – route five

Johnson and Scholes (2002:328) define a focused differentiation strategy as one that seeks to provide high perceived value, justifying a substantial price premium. A successful focus strategy depends on an industry segment that is of sufficient size, has good growth potential, and is not crucial to the success of other competitors. Mid-size and large firms effectively pursue focus-based strategies only in conjunction with differentiation or cost leadership-based strategies. Focus strategies are most effective when consumers have specific preferences or requirements, and when rival firms are not attempting to specialise in the same target segment (David, 2001:182).

Johnson and Scholes (2002:328) stress that this strategy raises some important issues:

- A choice has to be made between broad differentiation across a market, or a strategy focused on a specific segment.

- Organisations choosing a focus strategy targeting a particular market segment, have to realise that, within that segment itself, the strategy clock is also relevant.

- It is important to be clear about which market segment is being targeted, defined in terms of customer needs and actions to satisfy those needs. This is
difficult if the organisation competes in different market segments, with
different needs.

- A focus strategy may conflict with stakeholders’ expectations.

- The advantages of a focus approach have to be carefully monitored, because
the market situation may change. Differences between segments may be
eroded, leaving the organisation open to much wider competition.

2.7.1.6 Failure strategies – routes six, seven and eight

Johnson and Scholes (2002:330) conclude that strategies suggested on routes six,
seven and eight are destined for failure. Route six suggests increasing the price
without increasing the value to the customer. This is the strategy that monopoly
organisations are accused of. Route seven involves the reduction in value of a
product or service, while increasing the relative price. Route eight, a reduction in
value while maintaining price, is also dangerous. There is a high risk that competitors
will increase their share substantially should an organisation follow route six, seven, or
eight. There is another basis of failure - a strategy that ends up being stuck in the
middle.

2.7 SUMMARY

The first sub-problem, regarding the competitive advantage of a product or service
has been addressed by research on Porter’s diamond on national competitive
advantage, and the forces that influence competitive advantage. The importance of
creating and sustaining competitive advantage has also been addressed. Porter’s
diamond provides the basic factors that contribute to an organisation’s competitive
advantage. Chapter three looks at factors that contribute to the competitive advantage
of the intermodal industry in the Nelson Mandela Metropolitan Municipality.
CHAPTER THREE

THE INTERMODAL INDUSTRY IN SOUTH AFRICA

3.1 INTRODUCTION

In chapter two the theory of competitive advantage were discussed. The idea of sustaining this advantage in an ever-changing global world is just as important. Changes in the trade environment, sophisticated customer demands and advanced technological developments have revolutionised transportation services. Transportation needs have advanced from an initial port-to-port service to a complete door-to-door service. A decade ago, logistical service companies delivered part of a segmented distribution service, but today they provide seamless transportation, linking product origin to final destination. This can only be done through a single mode or a combination of modes to achieve the most efficient service at the lowest cost for both shipping company and client. Intermodal services have been implemented successfully in various countries, with both authorities and private operators working together to find intermodal solutions.

South African modal integration is of a more complex nature, owing to regulatory measures and structures from the past (Lawrence, 1994:1). Before 2000, regulation limited modal co-operation, but since deregulation and moves towards liberated market environments have taken place, modal integration has become a reality. It is now possible for different modes of transport to work together in providing the most efficient means of transport.
For an efficient multimodal system, the different transport systems have to be coordinated to accomplish intermodal transport. Multimodal planning focuses on system choices, whereas intermodal planning emphasises the most efficient way of moving from point to point through the system (Meyer, 1992: 6).

Cooperative agreements between private operators and state-owned interest form the basis for such an intermodal service. Apart from being involved in providing the physical and administrative infrastructure, government is also partially involved in organisations such as Transnet, who are responsible for particular transport services (Department of Public Enterprise, 2002).

Chapter three deals with the intermodal evolution, the advantages of intermodalism, and the deregulation of the industry. This will be followed by the evolution and integration of containerisation. Thereafter, consideration will be given to what knowledgeable people have to say about the intermodal industry in the NMMM, and how this can be linked to the theory of competitive advantage discussed in Chapter two.

3.2 THE INTERMODAL EVOLUTION

The concept of logistically linking two or more modes of transport may be centuries old, but the wider use of this form of transport has developed fully only over the last few decades. Intermodal transport has become a major growth industry in South Africa since the mid 1960’s, and has led to a reduction in transport costs and improved logistics worldwide. Intermodalism is thus not a new concept, but is novel in its refined form. Historically, the crossing of rivers had to be accomplished by utilising means of transport different from those used for overland transport. Where land-water boundaries caused a change in the means of locomotion, an intermodal exchange had to take place. This simplified view on intermodality formed the basis for the
development of a highly specialized field of transport. It first revolutionised the transport interface between the marine and overland modes. More recently, intermodal systems have been widely applied between the rail and road modes, to the benefit of both.

D'Este (1996:1) stresses that an intermodal system is much more than the physical movement of goods and its associated direct cost.

He maintains that it is more useful to define intermodalism as a technical, legal, commercial and management framework for moving goods from door-to-door, using more than one mode of transport. This definition emphasises that intermodalism is a service rather than a technology. To achieve the fluent, seamless service needed for intermodal transport, a standard unit of transport was required. Containerisation provided this freight unit, using international standard containers (Joubert, 1998: 4).

3.3 ADVANTAGES OF INTERMODALISM

Intermodalism offers several advantages (Martinez, 1992:48). Firstly, inter-modalism connects, implying the convenient, rapid, efficient and safe transfer of people or goods from one mode to another during a single journey, to provide the highest quality and most comprehensive transportation service for the given cost. Secondly, intermodalism allows choice via the provision of transportation options through competition among different modes, independently or in combination. Thirdly, intermodalism allows co-ordination and cooperation among transportation organisations, to improve the transportation service, quality, safety and efficiency for all modes or combinations of modes. The true advantage of intermodalism is thus the ability to logistically and effectively link two or more modes of transportation for the benefit of customers and users (Department of Transport, 1996a: 1).

Collenette (2003:4), the Canadian minister of transport, states that intermodalism is
good for all. It is anti-congestion, it is about making the best possible use of all modes, it helps move goods more efficiently, and it helps make the economy more efficient.

Maharaj (1999:49), the previous South African minister of transport, said that only by 2020 will the transport system of South Africa meet the needs of freight customers for sustainable, highly reliable and rapid transport services at low systems cost through an intermodal network. The system will be based on the seamless integration of all modes and multiple networks. In so doing, the freight transport system will enable and support regional integration and competitiveness.

3.3.1 Advantages linked to intramodal and intermodal transfers

An intramodal transfer means the movement of cargo between similar vehicles. With the standardisation of procedures (process flow) and equipment (rolling stock) the result is cost savings. Intermodal transfers, on the other hand, involve the transfer of cargo between different modes. It takes into consideration the characteristics of each mode to achieve optimum, cumulative advantage with regard to increasing efficiency of the transportation process, and reducing cost while providing a competitive service (Muller, 1995:2).

Each mode of transport has particular characteristics making it more favourable than competing modes. Intermodalism aims at using these advantages in combinations to optimise system efficiency (Joubert, 1998:17). For the purpose of the current research, the researcher focused only on trucks as the surface modes with ports, container depots and sidings as the points of connection (Joubert, 1998:17).

Muller (1995:100) reports that road transport influences the development of most countries because of its ability to create networks and promote regional development. Road operators are not confined to a particular route or fixed
infrastructure, and consequently provide a door-to-door service. A unique characteristic of road transport is the ability to provide a complete service. All other transport systems – rail, air and water – are unable to develop full efficiency without the support of road transport. In an era of “just-in-time”, road haulage provides an efficient, reliable and cost-effective service. Muller adds that road haulage can provide both substitutionary and complementary functions to competing modes of transport. Long distance overland hauls, in the past designated to rail, are characterised by competition from the road industry owing to the increased efficiency of road operators.

Over shorter hauls, the road transport industry provides a complementary service, taking over final distribution of cargo to consignees not directly linked to rail facilities.

New transport technology can be employed at its best, provided the distribution chain remains unbroken for as long as possible. By ensuring that modal exchanges are limited, the most economical and efficient way of distributing cargo will be achieved. Deficiencies as a result of traditional segmented systems can be overcome by introducing intermodal transport, which aims at facilitating the movement of goods or people, by reducing the total cost of transport through increased efficiency under the single responsibility of one intermodal transport operator. Freight is allocated to the most economical mode of transport, in accordance with the characteristics of the total trip. The most effective mode of transport operating at the lowest cost will be selected for a particular part of a journey. Under the single responsibility of one operator, freight allocation to the different modes can be achieved more easily. In contrast to segmented transport, intermodal transport ensures an integrated process from and to points as close as possible to the consignor and the consignee (Muller, 1990:100).

3.3.2 Advantages linked to market forces

Owing to different cost and performance characteristics of the various modes of transport, it is frequently economically desirable to transfer a shipment from one mode
to another while in transit from origin to destination.

These transfers provide a means of utilising the advantages of the various modes in combination, to reduce the total cost and/or improve the service on a particular shipment. The comparative cost of modal operations over similar distances shows substantial differences. Figures 3.1 and 3.2 illustrate the cost differences for competing modes of transport. Transportation costs for road operators will increase, relative to the distance travelled. As seen in Figure 3.1, shorter distances will have lower costs, while an increase in distance will result in higher costs.

Figure 3.2 illustrates that, in the case of modes operating on economies of scale, an increase in distance will lead to lower costs. Increased efficiency and cost savings make rail and marine services more competitive over longer distances, while road transport is more efficient over shorter distances. Therefore in terms of cost considerations, short distances should be performed by road, while longer distances should be by rail or sea (Joubert, 1998: 24).

Figure 3.1: Road transport cost

![Road transport](image)

Source: Joubert (1998: 24)

Figure 3.2: Rail and sea transport cost
3.4 CONTAINERISATION

The study of movement of material at ports and terminals has led the way to the development of the unit load principle. Unitisation is the combining of small components of a load into a single larger unit. The consolidation of freight into a single unit improves efficiency and handling capacity. The most advanced form of unitisation is the standardising of cargo in the form of a container (Muller 1995:161).

3.4.1 Evolution of containerisation in South Africa

In 1974 the South African government announced that by mid-1977, container operations would be introduced between South Africa and the northwest continent of Europe, as well as certain Mediterranean ports. It was one of the biggest projects undertaken by the then South African Railways and Harbours (SAR & H), involving approximately R2 billion of capital investment (African Connexion International, 1992:68).

Unlike overseas ports, the South African Railways and Harbours (SAR & H) insisted on complete control of all port activities. Services within the port area, not only rail but
also road movements, were performed by South African Harbours and Railways. This contradicted the very aim of containerisation, namely increasing efficiency and mobility. Because of monopolistic control, the market could not regulate the most effective means of distributing containers. Between 1978 and 1982, container volumes handled increased from 362 000 to 724 000 TEU’s (Twenty foot equivalent units) at South African ports (Falk, 1985: 54). Gillham (2002:20) adds that in 2002, the port of Port Elizabeth achieved a new record. The container terminal handled 28 041 TEU’s compared to the previous record set in 1999 of 25 913.

The growth of containerisation was so intense that private road haulers were subcontracted to assist in the movement of containers from the coast to the Reef.

By 1983 the market had subsided to such an extent that sufficient rail capacity was available (Griffiths, 1995:12 – 20). In an attempt to regain part of the traffic lost to private haulers, railways introduced an overnight container delivery service. It was clear from the entry stage that competition would form an integral part of any container system. The private haulers and South African Railways and Harbours were going to be direct competitors, matching up advantages in an attempt to achieve market share. Customer service was going to play a crucial part in delivering efficient, reliable services with benefits to both sender and receiver (Joubert, 1998:39).

3.4.2 Economic benefits of containerisation

To achieve the fluent, seamless service needed for intermodal transport, a standard unit of transport is required. Containerisation provides this freight unit for the major modes of transportation – rail, road and sea. Linked by a container, the various means of transport are no longer separate systems, but become segments of a transportation network connecting the producer and consumer. The consolidation of freight into a single unit improves efficiency and handling capacity, making it more economical to transport (Muller, 1995:161). Containerisation provides the standardisation of Unit Load Devices (ULD), leading to ease of manufacture;
compatibility with vehicles, and ease of interchange among shippers and carriers.

Standardisation of containers and fittings makes the unit interchangeable amongst different modes of transport. The main advantages of containerisation in terms of intermodality can be summarised as follows:

- Containerisation facilitates a door-to-door service with no intermediate handling of container contents at terminals and trans-shipment points, thus reducing double handling, and reducing the risk of damage and theft of goods in transit.

- The possibility of delays because of content transfers from one mode of transport to another is minimised. Scheduled services operate with a higher degree of precision, leading to a reduction in claims for delay.

- Compared to break-bulk shipments, faster turnaround time can be achieved with container ships. Conventional break-bulk shipping can take up to five days in port. Comparatively, the same volume of containerised cargo can be handled in one day, enabling faster transit time and reducing total transit costs.

- Containerisation promotes multimodal transportation, which in turn simplifies transportation documentation and calculation procedures.

- Diversification of services rendered to accommodate different types of cargo leads to the development of new markets. The increased protection and safety provided by containers allow the transportation of valuable and fragile articles in containers, to serve a particular niche market.

- Reduced risk of cargo damages and pilferage leads to favourable
insurance rates for all parties.

- Standardisation of unit loads and the mechanisation of operations lead to increased productivity and labour cost reductions.

- The problems of storing en route, and of warehousing, are simplified by storing goods directly from production lines in containers on cargo owners’ premises, resulting in lower storage cost.

It is therefore clear that containers as a unit load principle, provide a means of coordinating different modes of transport to achieve a fluent, efficient and cost-saving door-to-door service, which is an essential requirement in intermodal transport. (Schneider, 1994:30).

3.4.3 The characteristics of a container

A container has the following characteristics (Van den Burg, 1975 :59) :

- It has a permanent character and is accordingly strong enough to be used repeatedly.

- It is specially designed to facilitate the carriage of goods by one or more modes of transport without intermediate reloading.

- It is fitted with devices making it ready for handling, particularly for transfer from one mode of transport to another.

- It is designed to be easy to fill and to empty.
The international standardisation organisation (ISO) (Joubert, 1998:36) adds to the characteristics by defining a freight container as being:

- a rectangular configuration;
- weather proof;
- capable of transporting and storing a number of unit loads;
- one that protects and confines the contents from loss or damage;
- one that can be separated from the means of transport;
- capable of being handled as a unit load; and
- capable of being trans-shipped without re-handling the contents.

3.5 NETWORK DEREGULATION

Traditional views on transportation systems have changed dramatically since 1993. Governments have realised the importance of a flexible, responsive and market-oriented transportation system for maintaining a competitive edge and attracting trade. It is a responsibility of national governments to facilitate the transportation needs of operators, to increase their international competitiveness. Historically, transportation markets were guided by regulatory measures. The international move, however, is towards deregulation, with market forces guiding efficiency. Regulatory barriers are now eliminated, to provide a market-oriented transportation system (Martinez, 1992:51).

Benefits from an efficient transportation system are not limited to any party but rather
distributed to everyone involved or influenced by the increased efficiency. The benefits include not only financial considerations, but also a potential reduction of environmental and social externalities, and a reduction in energy consumption (Department of Public Enterprise, 2002).

Deregulation has encouraged mergers and acquisitions on a national and international basis. Transportation companies have adapted to become more responsive to increased customer demands for efficient, smooth distribution flows. Since deregulation, expansion by carriers into multimodal activities has increased substantially (Muller, 1995:226).

International carriers are combining services through strategic partnerships with competitors to remain competitive. Mergers and alliances of carriers to form intermodal agreements has become standard practice.

Sharing vessel capacity, terminal facilities and equipment, simplifies operations and provides carriers with advantages through economies of scale. Plant (2002:16) writes that three major changes during deregulation added to the competitiveness of intermodalism.

The first was the rise of a new industry; intermodal marketing companies (IMC’s) or transport brokers which function as middlemen in the logistics of freight transport. According to Smith (Branch manager, Haulgoods, Port Elizabeth, 3 March 2003, Personal Communication) since “open gates“ or deregulation in the port of Port Elizabeth, Haulgoods transport brokers now have a wider variety of cargo to offer road transport organizations. Before 2000 it was only break bulk that Haulgoods transport brokers could offer road transport companies, whereas now Haulgoods can offer containers to be road hauled to the major centres of South Africa. The IMC’s were limited in what services they could perform until 2000, when deregulation allowed them to operate freely within the overall intermodal process. A second change was in information technology. Either IMC’s or transportation software firms
began to adapt to easy-to-use computer software and PC`s to improve transportation logistics and “just-in-time” deliveries. This aspect was also discussed in Chapter two.

3.6 INTERMODALITY IN SOUTHERN AFRICA

The Southern African sub-continent is characterised by political, economical and social instability, but transformation in Southern Africa over the past decade had a stabilising influence on Southern African transport. The issue regarding level playing fields between the transport modes is equity in the recovery of infrastructure provision, management, operation, and maintenance costs. An equitable distribution of infrastructure cost recovery (capital, management, operating and maintenance) will make a positive contribution to reducing artificial modal shifts and distorted tariff structures created by cross – subsidisation. Government will encourage integration, intermodalism and partnerships between the modes, provided this does not result in monopolies (Department of Transport, 1996b).

The collapse of apartheid, and relative peace in Mozambique and Angola are leading to the opening of landlocked gateways to the sea. Economic, political and technological changes have forced a new perspective on transport operations in Southern Africa – a new vision for a single transportation system is envisaged. This has created an entirely new context for a sub-regional network. Integration, rationalization and coordination of surface transportation systems, especially port, railway and road services, now seems a reality for the future (Schneider, 1994: 22).

Portnet's open-gate policy, with the registration of 1 318 private haulers, was officially implemented at the port of Port Elizabeth on 1 September 1999. This was expected to benefit Portnet customers, as it would allow them to use the road haulage operator of their choice. The increased competitiveness among haulage operators would bring competitive pricing and increased efficiencies. Before September 1999 Portnet handled the delivery and collection of all containers within a 110 kilometer radius. The open-gate policy removed this restriction and meant that all haulage operators were
subject to the same terms and conditions. Portnet management was of the opinion that open gates would present new opportunities to private hauliers, while the road transport arm of Portnet would also benefit from the wider market in which it would operate (Dispatch online, 1999:2).

In reality, however, the limited container handling equipment in the port of Port Elizabeth and the increased number of haulage vehicles calling at the terminal, has resulted in queues sometimes as long as 65 vehicles outside the port gates. The queuing lowers the productivity and efficiency of vehicles, forcing the intermodal industry to increase prices, to the disadvantage of the customer.

3.6.1 Future container flows in South African ports

In line with an increase in global trade and exports, container flows through South African harbours have increased.

The South African harbours and transportation infrastructure previously used for local trade are coming under pressure to facilitate the increase of international trade. Table 3.1 provides a summary of the total twenty-foot equivalent units (TEU’s) handled in the port of Port Elizabeth between 1999 and 2002. The general trend of increased container flow over the period 1991 until 2002 is graphically displayed in Figure 3.3.

Table 3.1: Total number of containers handled at the port of Port Elizabeth (TEU’s), for the period 1991-2002

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Containers landed</th>
<th>Containers shipped</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1991</td>
<td>38589</td>
<td>36112</td>
<td>74701</td>
</tr>
<tr>
<td>1992</td>
<td>45310</td>
<td>44757</td>
<td>90067</td>
</tr>
<tr>
<td>1993</td>
<td>47526</td>
<td>48700</td>
<td>96226</td>
</tr>
<tr>
<td>Year</td>
<td>Landed</td>
<td>Shipped</td>
<td>Total</td>
</tr>
<tr>
<td>------</td>
<td>---------</td>
<td>---------</td>
<td>----------</td>
</tr>
<tr>
<td>1994</td>
<td>58617</td>
<td>57007</td>
<td>115624</td>
</tr>
<tr>
<td>1995</td>
<td>83019</td>
<td>72704</td>
<td>155723</td>
</tr>
<tr>
<td>1996</td>
<td>95419</td>
<td>74909</td>
<td>170328</td>
</tr>
<tr>
<td>1997</td>
<td>100612</td>
<td>79790</td>
<td>180402</td>
</tr>
<tr>
<td>1998</td>
<td>106832</td>
<td>89238</td>
<td>196070</td>
</tr>
<tr>
<td>1999</td>
<td>147079</td>
<td>105153</td>
<td>252232</td>
</tr>
<tr>
<td>2000</td>
<td>131661</td>
<td>98487</td>
<td>230148</td>
</tr>
<tr>
<td>2001</td>
<td>125298</td>
<td>112114</td>
<td>237412</td>
</tr>
<tr>
<td>2002</td>
<td>114067</td>
<td>118563</td>
<td>232630</td>
</tr>
</tbody>
</table>

Source: Gajjar (2003)

Figure 3.3 : The total number of TEU's landed and shipped at the port of Port Elizabeth for the period 1991 - 2002.
South Africa has experienced an unexpected increase in the volume of imports and exports handled since 1994. South African ports are under increased pressure to facilitate this increase in port activity. Currently port congestion is a problem for efficient operational functioning (Gajjar, New business development manager, South African Port Operations, Port Elizabeth, 30 January 2003, Personal Communication).

### 3.7 THE EASTERN CAPE INTERMODAL INDUSTRY AND PORTER’S DIAMOND

Porter argued that a country should be viewed as a platform for a company’s global strategy (Monitor Company, 1995:32). He identified four broad attributes of a nation, presented in Porter’s diamond.

These attributes shape the environment in which local firms compete and promote or impede the creation of competitive advantage:

- Factor conditions, such as labour, land, natural resources, infrastructure and capital;
• Demand conditions, i.e. the preferences of the home market;

• Related and supporting industries; and

• Firm strategy, structure and rivalry (Dehlen, 1993:10).

Porter further argued that each of these identified attributes determines competitive advantage by influencing the capacity of the national industries to innovate and upgrade (Monitor Company, 1995:32).

3.7.1 Factor conditions

3.7.1.1 Location

In Chapter two, it was pointed out that location proved to be one of Port Elizabeth’s most important advantages. Port Elizabeth is the gateway to many developing markets of Southern Africa, and is only two hours away from major shipping routes (PERCCI Business Guide, 2002: 28). It is equidistant from the world’s markets of Europe, the East, and the Americas (African Connexion International, 1994:111). Prime industrial land and property within commuting distance of the main townships that provide access to a skilled and stable workforce, is fairly readily available (from Markman industrial area to Motherwell township is an example). With its proximity to the farmed areas (e.g. Patensie, Addo, Langkloof, Kareedouw, Krakeel), Port Elizabeth which exports produce to Europe, the East and the Americas, provides the lifeblood for the region’s economy (Eastern Cape Gateway 2000 Plus, 2000:2).

Uitenhage is presently home to Africa’s largest motor vehicle manufacturer, Volkswagen South Africa (VWSA), as well as Goodyear Tyre. Freight dynamics has the privilege to be the preferred intermodal transporter of both manufacturers as well
as many other long term transport agreements to keep it the largest intermodal transporter in the NMMM and the rest of South Africa (Du Plessis, Regional manager, Freightdynamics, Port Elizabeth, 30 January 2003, Personal Communication).

3.7.1.2 Coega harbour

Coega is intended to be a world-class duty-free industrial zone, which will be served by a deep-water harbour (Coega, 2002). The Coega project is well situated to serve the markets of Europe, America and the East. It also lies on the main east-west shipping routes (Eastern Cape, Gateway 2000 Plus, 2000:37).

The researcher’s opinion is that the intermodal industry will benefit from the increase in volume of import/export containers to/from the duty-free industrial zone of Coega. According to PERCCI (2002:28) the deep-water port will be perfectly poised to position the city as the export capital of South Africa.

3.7.1.3 Human resources

A further incentive to achieve competitive advantage in the NMMM is the availability of the local labour force. South Africa’s skilled labour rates are among the most competitive in the world, and the Eastern Cape’s motor industry is proving that the Province’s workers can match the world’s best quality standards (Eastern Cape Gateway 2000 Plus, 2000:37). According to the Business Guide 2000 – 2001 (2001:10) Port Elizabeth has a trained labour force which has resulted from global companies operating in the region and bringing the skills to the NMMM. Hatty (1999:14) strengthens this statement by adding that governments do not create wealth but companies do, since the latter do not operate in a vacuum.

He says competitiveness in world terms is the ability of a country to create added value, and thus increase national wealth by managing assets and processes, attractiveness and aggressiveness, globality and proximity, and by integrating these relationships into an economic and social model that has high sustainability.
3.7.1.4 Infrastructure

Infrastructure identifies the extent to which resources and systems are adequate to serve the basic needs of business. Physical infrastructure enables business to be conducted more effectively and efficiently, while investment in physical infrastructure creates more jobs for the economy. Good transportation is at the heart of successful trade and business (Pooe, 2000: 29).

In the NMMM the transportation and communication services are well developed, and offer an efficient and sophisticated infrastructure, comprising air, road, rail and harbour facilities (Harbour reference book for the ports of South Africa and Mauritius, 2001). The major transportation infrastructures are represented by the main divisions of Transnet, namely Freightdynamics (Autonet), South African Airways, PX container transport, Port Authority, Spoornet, and Metrorail (Hosking & Lloyd, 1999:28). Bernstein and Irvine (1999:70) support Hosking and Lloyd in saying that the NMMM also offers viable media and communications, for example Telkom South Africa, cellular phone networks, and the Internet.

3.7.1.5 Capital resources

Capital, as was discussed in Chapter two, is the amount and cost of capital available to finance an industry. The success of an intermodal industry is often linked to a large amount of investment from foreign companies. The larger the foreign direct investment, the larger the import and export market for which the intermodal industry strives. Hill (2003:236) states that many multi national enterprises (MNE) have access to financial resources not available to the host-country firms.

These funds may be available from internal company sources, or, because of their reputation, large MNE may find it easier to borrow money from capital markets than the host-country firms would. The desire of the South African government to
encourage foreign direct investment by foreign firms is partly based on the belief that they have access to capital resources that South Africa needs.

According to CIMEC (2000:16), examples of foreign investment in the NMMM include Degussa-Hüls with an investment of R40 million; Corning, who built a R200 million manufacturing plant; and Delphi Automotive Systems, who invested R30 million in manufacturing plants to supply the overseas market. The above-mentioned names are all clients of the intermodal industry in the NMMM (Reid, Intermodal manager, Safmarine, Port Elizabeth, 19 February 2003, Personal Communication).

Mattheus (2002:24) reports that the following companies made investments in the NMMM for international trade in 2001-2002:

- Eberspach invested R10 million;
- Bel – Woco secured an investment of R60 million;
- Lafarge invested R23 million;
- Engelhard invested an estimated R225 million;
- VWSA to invest R1.5 billion over the next five years; and
- Ford had already invested R431 million in their export programme.

3.7.2 Demand conditions

It was pointed out in Chapter two, section 2.2.2, that demand conditions are the nature of home demand for the industry’s product or service. The close proximity of sophisticated and demanding buyers of intermodal services has pressured the firms in the industry to meet high standards in terms of delivery/collection of containers, as well as sufficient capacity to meet the demands in a cost-effective way (Hill, 2003:160).

The pressure to meet global standards is enforced throughout the value chain, as one customer puts pressure on his supplier, who in turn puts pressure on his supplier to
conform to international standards.

The international demand for automotive parts from South Africa comes from the Americas, Europe and China. The NMMM sophisticated and demanding buyers of intermodal services, for example Volkswagen South Africa and Delta, helped to stimulate the NMMM intermodal industry to improve service quality and introduce innovative processes in the industry.

3.7.3 Related and supporting industries

The benefits of investment in advanced factors by related and supporting industries can spill over into an industry, thereby helping to achieve a competitive position. The Port Elizabeth Regional Chamber of Commerce and Industry (PERCCI) intends to promote the export of the Province’s products. The domestic industry is already involved in several international sourcing agreements, and these agreements will benefit the intermodal industry in the sense that the exported products need to be transported to the port of Port Elizabeth.

Related and supporting industries of the intermodal industry in the NMMM, namely South African Port Operations (SAPO), shipping lines, and clearing and forwarding agents, have had an impact on Port Elizabeth-based intermodal companies, when one considers import/export contracts awarded in the year 2002/2003. The port forms the connecting link between the shipping service and the inland transport system. The port of Port Elizabeth is therefore, a point of interface with other modes of transport, such as rail, road and air transport (Fundamentals of Ports Management, 2002).

Volkswagen South Africa transported 26 400 containers between the Port Elizabeth and Uitenhage in 2002 using their intermodal service provider, Freightdynamics (Le Roux, Regional commercial manager, Freightdynamics, Port Elizabeth, 31 January 2003, Personal Communication).

He added that Daimler Chrysler in East London transported 20 042 containers in
The estimated volume of containers for Volkswagen South Africa for 2003 is projected as 16 500 owing to a change in logistical process. According to the Eastern Cape Development Corporation (2001:3) Volkswagen South Africa has announced a R2,16 billion contract with Faurecia Exhaust Systems. Renault has signed a R2 billion export contract with Port Elizabeth-based Faurecia Exhaust Systems. Eberspacher has also secured a R80 million contract to supply Europe with catalytic converters. These contracts were negotiated by SAPO, the shipping lines and the clearing and forwarding agents, all three of which are the intermodal industry’s related and supporting industries.

Hill (2003:161) stresses that one consequence of related and supporting industries is that successful industries in a country tend to be grouped into clusters of related industries. This was one of the most pervasive findings of Porter’s study. Such clusters are important because valuable knowledge can flow between the firms within a geographic cluster. According to the researcher, there is no intermodal cluster in the NMMM or in the rest of South Africa. Perhaps initiative needs to be taken to establish an intermodal cluster in the NMMM, to exchange valuable knowledge between firms.

3.7.4 Firm strategy, structure and rivalry

The intermodal organisations in the NMMM are either domestically owned or foreign-owned firms. Ownership has a direct effect on the way the firms operate and are managed, since management styles vary according to competitive strategy and are also affected by the strategy of foreign-owned firms in the industry (Du Plessis, Regional manager, Freightdynamics, Port Elizabeth, 30 January 2003, Personal Communication).
The researcher adds that the rivalry among competitors will be enhanced by the number of competitors in a particular market segment of the intermodal industry. If the rivalry is weak, organisations can increase prices and earn greater profits. If the rivalry is strong, significant price competition may result, which constitutes a threat to profitability. This is currently the case in the intermodal industry in the NMMM. More transporters are entering the intermodal market, transport supply exceeds demand, and the prices drop. When competitors are not in balance, there is always the danger of intense competition as one competitor attempts to gain dominance over another. In the NMMM there are currently two intermodal competitors, Roadwing and Freightdynamics, the latter trying to hold on to its dominant position.

3.8 SUMMARY

Chapter three has assisted in identifying the inherent benefits from an effective intermodal transportation system as well as the container flows through the ports of South Africa. South Africa has not yet been able to develop an efficient intermodal system because of regulatory measures and structures from the past. The situation has changed since 2000, with the deregulation of the intermodal industry on the road transport of containers from the port to the hinterland and back. Competition in the industry is fierce, and the only deciding factor will be a reliable and efficient service offered to clients.

Chapter four will focus on an empirical analysis of the intermodal industry in South Africa, with specific reference to the Nelson Mandela Metropolitan Municipality. Particular attention will be paid to the application of Porter’s diamond and an analysis of the competitive environment.
CHAPTER FOUR

THE EMPIRICAL STUDY AND ANALYSIS OF DATA

4.1 INTRODUCTION

Information gathered from the empirical study will help ascertain which factors are the most important for a competitive advantage in the intermodal industry. This information also highlighted the challenges and issues the industry may need to address in the future. These findings, together with the information gained in the literature study, will help formulate a strategy for the intermodal industry in the Nelson Mandela Metropolitan Municipality (NMMM) to sustain competitive advantage. The method and design of the empirical study will be addressed in this chapter, followed by a discussion of the findings.

4.2 THE EMPIRICAL STUDY

The data obtained from the empirical study helped resolve the sub-problems, namely:

- Which factors contribute to a competitive advantage of the intermodal industry in the NMMM?
- Which strategy does the intermodal industry in the NMMM need to adopt to develop and sustain competitive advantage?

A structured interview developed from the theoretical analysis in Chapter two was utilised in obtaining the data. The process will be discussed later.
4.2.1 The purpose of research

Research is the process of collecting and analysing data to increase the understanding of a problem that concerns or interests the researcher. The focus of the current study is on formal research, aimed at "understanding a specific problem and then communicating what was discovered to the larger scientific community" (Leedy & Ormrod, 2001:4).

One key element in conducting useful research is gathering reliable information. The basis for gathering reliable information is designing questions and questionnaires that will produce the kind of information from which the researcher can draw valid conclusions (Practical assessment, research and evaluation, 2003).

Sekaran (2003:7) argues that there are two different purposes of research. One is to solve a problem demanding a timely solution. Such research is called "applied research." The other is to generate information to solve problems that occur. This is called "basic research." Thus, research done with the intention of applying the results of the findings to solve specific problems currently being experienced is called applied research. Research done to enhance the understanding of certain problems that commonly occur in organisations and seeking methods of solving them, is called basic research. The findings of such research contribute to the building of knowledge in the various functional areas of the organisation to be applied later in organisational problem-solving.

Based on the definitions by Leedy and Ormrod and that of Sekaran, the research for this study can be classified as formal applied research. The intention was to apply the results of the findings to solve specific problems being experienced in the intermodal industry of the NMMM.
4.2.2 Types of research

Sekaran (2003:119) is of the opinion that studies may be exploratory, descriptive, or aimed at hypothesis testing. The type of research used depends on the stage to which information or knowledge about the research topic has advanced. A brief discussion of the three types of research will follow:

- **An exploratory study** is undertaken when not much is known about the problem situation, or when no information is available on how similar problems have been solved in the past. Exploratory studies are thus undertaken to better understand the nature of the problem (Sekaran, 2003:119).

- **A descriptive study** is undertaken to describe the essential characteristics of the variables of interest, and produce a profile of behaviour. When large volumes of data have been gathered from a variety of sources, it is necessary to organise, summarise and extract the essential information contained in this data, for communication to management (Sekaran, 2003:119).

- **Hypothesis testing** usually explains the type of relationships, or establishes the differences between groups, or the independence of two or more factors in a situation (Sekaran, 2003:119). Wegner (2001:214) writes that the reason for using a hypothesis test is to establish whether a claim or generalisation made about the true value of a population parameter is true. To test these claims or assertions, sample data is gathered and analysed. On the basis of the sample findings, the hypothesised value of the population parameter is either accepted as probably true, or rejected as probably false. The process of testing the validity of a claim about the true value of any population parameter is known as hypothesis testing.
For the purposes of this study, the researcher chose the exploratory study, as not much is known about the intermodal industry in the NMMM. The intermodal industry before 2000 was a regulated industry served by the government-owned intermodal service provider. The playing fields are now level. This has forced the once government-owned service provider to create a competitive advantage over competitors who have entered the intermodal market.

4.3 METHOD OF DATA COLLECTION

According to Nel, Radel and Loubser (1990:142) there are fixed guidelines as to which method a researcher should use for collecting data, the most important being that the researcher must collect the data as accurately and unambiguously as possible.

In the current study, a structured questionnaire was developed as an instrument for collecting data, which the respondents would complete in the presence of the interviewer. The following sub-sections discuss the design of the questionnaire, administering of the questionnaire, designing the structured interview, and use of the Likert scale as well as the sample selection and response rate.

4.3.1 Questionnaire design

Parasuraman (1990:363) defines a questionnaire as a set of questions designed to generate the data necessary for accomplishing a research project’s objectives. According to Sekaran (2003:237), the questionnaire design process needs to focus on the wording of questions, planning how variables will be categorised, scaled and coded after the receipt of responses, and the general appearance of the questionnaire.
In evaluating the questions asked, Weiers (1988:261) proposes that the following questions need to be considered:

- Is the question necessary in view of the objectives of the research?
- Will the participant be willing and able to provide the information required?
- Does the question adequately cover the content area for which it is responsible?

Once these questions have been addressed, the researcher will have to ascertain the type of questions he/she will use. Kinnear and Taylor (1991:344) identify the following types of questions that can be used:

- Open-ended questions, which require the participants to provide their own answer to the questions;
- Multiple-choice questions, which require the participant to choose an answer from a list provided in the questionnaire; and
- Dichotomous questions, which are an extreme form of multiple-choice questions and which allow the participant only one of two responses, such as “yes” or “no”.

The questionnaire used in this research (See Annexure B) contained all three types of questions.

### 4.3.2 Administering the questionnaire

Questionnaires can be administered personally, mailed to the respondents, or
distributed electronically. According to Sekaran (2003:236), when the survey is applicable to a local area, and the organisation is willing and able to assemble groups of employees to respond to the questionnaire at the workplace, a good way to collect information is to administer the questionnaires personally.

The main advantage of this is that the researcher can collect completed responses in a short period of time. Doubts that participants may have about any question can be clarified immediately. The researcher may also have the opportunity to introduce the research topic, and motivate the participants to offer their undisguised answers. The researcher, for the purpose of the current study, chose to administer the questionnaire personally, in the form of a structured interview.

4.3.3 The structured interview

Structured interviews are conducted when it is known what information is needed. The interviewer has a list of predetermined questions relevant to the sub-problems. As the participants express their views, the researcher record it on the Likert scale.

When the structured interviews have been conducted, and adequate information was obtained to understand the sub-problem and main problem, the researcher stopped the interviews. The gathered information will then be tabulated and the data analysed to help the researcher solve the main problem (Sekaran, 2003:227).

Face-to-face interviews have the advantage of enabling the researcher to establish rapport with potential participants, and gain their cooperation; therefore such interviews yield the highest response rates in survey research. Personal interviews also allow the researcher to clarify ambiguous answers and, where appropriate, seek follow-up information. Structured interviews take time and may not be practical when very large samples sizes are important. The structured interview was thus the ideal research method in this study, because the sample size was only 12.
Leedy (1997:191) states that a commonplace instrument for observing data beyond the physical reach of the observer is the questionnaire. A questionnaire is a tool that is needed to probe the minds or attitudes, feelings or reactions of people.

There is always a chance that some questions can cause problems, and questionnaire testing is needed to identify and eliminate these problems (Sudman & Blair, 1998:300). In the present study, the questionnaire, as part of the interview, was tested during a pilot study with four companies, where interviews were held and the respondents asked to comment on the clarity of questions. This led to the questionnaire being adapted, and unclear questions excluded or rephrased.

The questionnaire was divided into five sections. Section one requested demographical and geographical data, and sections two to five requested quantitative data.

4.3.3.1 Section One: Demographics and geographics

Section one comprised questions that offered the respondent choices to be ticked by the interviewer. The questions determined the market focus of the organisation, activities of the organisations in the intermodal industry, volume of containers handled, and the job position of the respondent. Questions in this section pertained to general information on respondents and the organisation in which they were employed.

4.3.3.2 Sections two to five: Quantitative analysis

Section two consisted of questions on the factors promoting competitive advantage of the intermodal industry. The questions offered the respondent a set of appropriate choices to choose from.
Section three required the respondents to choose the most appropriate option that, to their minds, would promote competitive advantage in the intermodal industry.

Section four required respondents to choose the most appropriate option pertaining to the competitive environment of the intermodal industry, while section five consisted of questions on the advantages and challenges of the intermodal industry.

4.3.4 Designing the structured interview

The structured interview or “patterned interview” is a very straightforward form of interview. The interviewer has a standard set of questions that are asked of all participants. This makes it easier for the interviewer to evaluate and compare results. Structure in the interview format ensures consistency across participants, and facilitate reliable and fair judgements (Structured interview development, 2003).

The first step in designing the interview is to formulate the broad overall questions that the survey is intended to answer. The second task is to translate the broad overall questions into measurable elements as more precise questions. The broad sections investigated in the current study related to competitive advantage, competitive environment, and advantages and challenges of the intermodal industry (Structured interview is very common – prepare yourself, 2003).

4.3.5 Use of the Likert scale

The Likert scale was used to measure the information gathered on the research topic. The Likert scale was designed to examine how strongly participants agreed or disagreed with statements on 3-point scale. The responses over a number of statements were then summated, to draw conclusions on the research topic.

4.3.6 Sample selection and response rate
The researcher was of the opinion that all the clients (shipping lines and shipping agents) of the intermodal industry in the NMMM needed to form the population for the survey, because they were the users of the intermodal service. The clients’ contact details were obtained from the account database of Freightdynamics – an intermodal service provider in the Eastern Cape – as well as from the researcher’s knowledge of the intermodal industry. All 11 participants in the NMMM were invited to participate. The researcher contacted each respondent telephonically to make an appointment that would suit the respondent. A follow-up letter (See Annexure A) provided the respondent with the aim of the research, and served as a reminder of the interview. A 100 % response rate was achieved, since interviews were secured with the total population.

4.4 RESULTS PERTAINING TO DEMOGRAPHICS AND GEOGRAPHICS

The results of section one of the interview are indicated in Tables 4.1 to 4.7. A brief discussion of the data follows each table. The market focus of the intermodal industry’s clients is important in determining what type of commodity is mostly imported/exported to/from the port of Port Elizabeth.

This will ascertain on which markets the intermodal industry should focus their strategy to achieve a competitive advantage. Table 4.1 shows on which markets the intermodal industry’s clients focus.

Table 4.1: Market focus of the organization

<table>
<thead>
<tr>
<th>Market</th>
<th>Response frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automotive industry</td>
<td>2</td>
<td>18</td>
</tr>
<tr>
<td>Agricultural</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Perishables</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Combination of markets</td>
<td>9</td>
<td>82</td>
</tr>
<tr>
<td>TOTAL</td>
<td>11</td>
<td>100</td>
</tr>
</tbody>
</table>
From table 4.1 it is clear that 82% of the companies that participated in the survey focused on a combination of markets, consisting of the automotive market, agricultural market and perishable market. Only 18% of the participants focused mainly on the automotive sector of the import/export market. The reason for focusing on only two markets is that the general market comprises all markets. This approach allows the spread of business risk. The risk would be too big to focus on only one type of market.

The spread of the intermodal industry’s client base is illustrated in Table 4.2. It is of importance to the intermodal transporter to know the spread of the client base, because this will determine on whom to focus its marketing strategies.

Table 4.2: Organisation’s activity in the logistics chain

<table>
<thead>
<tr>
<th>Category</th>
<th>Response frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clearing and forwarding</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>Shipping line</td>
<td>9</td>
<td>82</td>
</tr>
<tr>
<td>Cargo owner</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Agent</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Landside operator</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>11</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Table 4.2 shows that the majority of organisations that were interviewed (82%) resorted under the category of shipping lines. Clearing and forwarding agents constituted 9% of the respondents, while the landside operators represented 9% of respondents. No respondents were cargo owners and agents, the reason being that cargo owners normally work through a clearing and forwarding agent or the shipping line to import / export goods, while agents were present only in the bigger ports (Durban and Cape Town) of South Africa.

The volume of containers handled per month by the client will determine the potential
monetary value to the intermodal transporter. Table 4.3 provides the spread in the number of containers handled per month by the client base.

Table 4.3: Number of containers handled per month

<table>
<thead>
<tr>
<th>Volume</th>
<th>Response frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>50-100</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>101 – 400</td>
<td>2</td>
<td>18</td>
</tr>
<tr>
<td>401 – 600</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>601 – 1000</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>More than 1000</td>
<td>7</td>
<td>64</td>
</tr>
<tr>
<td>TOTAL</td>
<td>11</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 4.3 shows that 64 % of the respondents handled more than a 1000 containers per month, while 18 % handled 101 - 400 containers per month. Only 9 % of respondents handled 410 - 600 containers per month, and the same percentage handled 50 - 100 containers per month.

Job positions provide an indication on which level in the organisation the respondents resort. Table 4.4 gives a list of the job positions that participated in the structured interview.

Table 4.4: Job position of respondent

<table>
<thead>
<tr>
<th>Position</th>
<th>Response frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logistics Manager</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>Sales Executive</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Branch Manager</td>
<td>5</td>
<td>46</td>
</tr>
<tr>
<td>General Manager</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Table 4.4 illustrates that 46% of the respondents were branch managers while 36% resort under the “other” classification. These included freight consultants, import/export managers and commercial managers. Only 9% of the respondents were logistic managers, while the other 9% were directors.

Proximity of customers to the port of Port Elizabeth indicated to the intermodal transporter the time and distances to be travelled, as well as the potential revenue for these distances travelled. Table 4.5 provides an indication where the majority of cargo owners were situated.

Table 4.5: Proximity of the majority of customers to the port of Port Elizabeth

<table>
<thead>
<tr>
<th>Distance</th>
<th>Response frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – 5 km (City, North End)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>6 – 10 km (Struandale)</td>
<td>3</td>
<td>27</td>
</tr>
<tr>
<td>11 – 50 km (Uitenhage)</td>
<td>5</td>
<td>46</td>
</tr>
<tr>
<td>51–300km (Addo, Langkloof)</td>
<td>3</td>
<td>27</td>
</tr>
<tr>
<td>TOTAL</td>
<td>11</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 4.5 illustrates that 46% of the organisation’s customers were situated 11 - 50 kilometers away from the port of Port Elizabeth. The 11 - 50 kilometer radius included places such as Markman Township, Perseverance, Coega and Uitenhage. Only 27% of the respondents’ clients were 6 - 10 kilometers away from the port. The 6 – 10 kilometer radius included places such as Neave, Sidwell and Struandale. The remaining 27% of the respondents’ clients resorted under the 51 – 300 kilometer radius. The 51 - 300 kilometer radius included places such as Addo, Humansdorp, Patensie, Kareedouw, Langkloof and East London.
The size of customers, proximity of depot, and location of the intermodal transporter, provided the researcher with valuable information as to which intermodal transporter clients preferred. Table 4.6 indicates which of the three characteristics were most important to clients.

<table>
<thead>
<tr>
<th>Bases</th>
<th>Yes frequency</th>
<th>Percentage</th>
<th>No frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size of customers</td>
<td>4</td>
<td>36</td>
<td>7</td>
<td>64</td>
</tr>
<tr>
<td>Proximity of depot</td>
<td>3</td>
<td>27</td>
<td>8</td>
<td>75</td>
</tr>
<tr>
<td>Location of service provider</td>
<td>7</td>
<td>64</td>
<td>4</td>
<td>36</td>
</tr>
</tbody>
</table>

Table 4.6 illustrates that more than half (64 %) of the respondents did not consider size when choosing an intermodal transporter. Thirty-six percent, though, were of the opinion that the size or volume of containers did determine their choice of intermodal transporter.

Regarding proximity of transporter’s depot, 73 % did not consider that the depot had an impact on the choice of transporter. This means that intermodal transporters from
other cities could be a threat to the local transporter in Port Elizabeth. Only 27% were of the opinion that the depot had an influence on choice of transporter. It was encouraging to see that 64% of respondents thought that the location of the intermodal transporter provided a competitive advantage. The reason for this is that a container terminal order (CTO) document needs to be forwarded to the transporter before the transport of a container can start. A CTO is required to enter or exit the port of Port Elizabeth. The closer the transporter is to the offices of the shipping line or clearing and forwarding agent, which in most cases delivers the CTO, the less time is wasted before a delivery can take place. Thirty-six percent thought that the location had no influence on achieving a competitive advantage. This statement was contradictory to what the big intermodal transporters thought. This meant that the smaller intermodal transporters were a threat to the larger transporters.

Various transport modes are generally used for exporting and importing products via the NMMM. The distribution of these modes is shown in Table 4.7.

Table 4.7: Transport modes, in general, used for export/import of products

<table>
<thead>
<tr>
<th>Modes</th>
<th>Response frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>Road</td>
<td>5</td>
<td>46</td>
</tr>
<tr>
<td>Rail</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Sea</td>
<td>5</td>
<td>46</td>
</tr>
<tr>
<td>TOTAL</td>
<td>11</td>
<td>100</td>
</tr>
</tbody>
</table>

From Table 4.7 it is clear that road and sea transport were equally popular amongst the respondents when exporting/importing goods. Only 8% of respondents used air transport to export/import goods. The air mode was used only in an emergency. Rail transport was not used, because road transport provided a more flexible service, shorter travelling time, and less handling, resulting in lower costs.

4.5 RESULTS OF FACTORS PROMOTING COMPETITIVE ADVANTAGE
Section two dealt with the factors which were expected to contribute to promoting a competitive advantage. The results of section two are indicated in Tables 4.8 to 4.11. One of the crucial factors to achieve competitive advantage is that of performance. The respondents' opinions on performance are summarised in Table 4.8.

Table 4.8: The performance factors of an intermodal service provider promoting competitive advantage

<table>
<thead>
<tr>
<th>Performance factors</th>
<th>AGREE</th>
<th>UNCERTAIN</th>
<th>DISAGREE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality advantage</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Speed objective</td>
<td>82%</td>
<td>0%</td>
<td>18%</td>
</tr>
<tr>
<td>Flexibility</td>
<td>82%</td>
<td>18%</td>
<td>0%</td>
</tr>
<tr>
<td>Cost advantage</td>
<td>91%</td>
<td>0%</td>
<td>9%</td>
</tr>
<tr>
<td>Dependability advantage</td>
<td>82%</td>
<td>18%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Table 4.8 clearly illustrates that the quality advantage was deemed to be the most
important performance factor of an intermodal transporter. This was followed by cost advantage (91% agreed). Eighty-two percent respectively agreed that speed, flexibility and dependability were third most important in promoting a competitive advantage. Eighteen percent were uncertain if flexibility and dependability contributed to a competitive advantage. Eighteen percent disagreed that speed contributed to a competitive advantage, while 9% disagreed that a cost advantage contributed to a competitive advantage.

The demand for a specific product/service contributes to an organisation achieving a competitive advantage. Table 4.9 provides a summary of respondents’ agreement with statements regarding demand conditions and competitive advantage.

Table 4.9: The organisation’s demand conditions and competitive advantage

<table>
<thead>
<tr>
<th>Demand conditions</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clients to your organisation do not request a specific transporter</td>
<td>36%</td>
<td>9,0%</td>
<td>55%</td>
</tr>
<tr>
<td>Your organisation has no preference of intermodal transporter</td>
<td>64%</td>
<td>0%</td>
<td>36%</td>
</tr>
<tr>
<td>Price is the determining factor</td>
<td>64%</td>
<td>9,0%</td>
<td>27%</td>
</tr>
<tr>
<td>Quality service is the determining factor</td>
<td>91,0%</td>
<td>9,0%</td>
<td>0%</td>
</tr>
<tr>
<td>Your organisation prefers to deal with reputable transporters</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Government-owned intermodal transporters cannot create competitive advantage because of inefficiencies</td>
<td>64%</td>
<td>9,0%</td>
<td>27%</td>
</tr>
<tr>
<td>Government-owned intermodal transporters cannot create competitive advantage because of image</td>
<td>55%</td>
<td>18%</td>
<td>27%</td>
</tr>
<tr>
<td>The shipping line is the decision-maker in deciding which intermodal transporter to use</td>
<td>46%</td>
<td>18%</td>
<td>36%</td>
</tr>
<tr>
<td>Organisations prefer not to use the government-owned intermodal transporter</td>
<td>18%</td>
<td>36%</td>
<td>46%</td>
</tr>
</tbody>
</table>
From Table 4.9 the following observations can be made:

- All respondents agreed that their organisation preferred to deal with reputable transporters, while 91% agreed that quality was very important. The importance of service quality was again stressed by a 91% agreement with the last statement in the table, showing that service quality was needed in the South African intermodal industry.

- Almost 82% of respondents thought that innovation in the intermodal industry was needed.

- The highest level of uncertainty (36%) was associated with organisations’ preference for not using the government-owned intermodal transporter. Just over 45% disagreed with the statement. It is interesting that 64% of respondents agreed with the statement that “government-owned intermodal transporters cannot create competitive advantage because of inefficiencies”, while 55% thought there was a problem with these transporters’ image.

- A fairly close distribution between “agree and disagree” was evident in the case of shipping lines being the decision-maker about which transporter to use.

- Fifty five percent of respondents indicated that their clients requested a specific intermodal transporter, while 63% indicated that they themselves had no preference of intermodal transporter. The distribution between “agree and disagree” was evenly distributed with only a 9% uncertainty that clients did not
request a specific transporter.

- Almost 64% of respondents were of the opinion that price was the determining factor regarding which intermodal transporter to use. The fact that only 27% disagreed with the statement is a clear indication that price is important.

- Fifty five percent of respondents were of the opinion that their organisation had a preferred intermodal transporter, while 36% disagreed and 9% percent were uncertain. It is interesting that 64% of respondents agreed earlier to exactly the same statement with different wording, and now only 55% agreed.

The related and supporting industries are important to achieve a competitive advantage in the intermodal industry. Related industries include the shipping lines, agents of the shipping lines, and the clearing and forwarding agents. Supporting industries of the intermodal industry are the port and container depots. Table 4.10 provides a summary of statements regarding related and supporting industries.

Table 4.10: Related and supporting industries promoting competitive advantage

<table>
<thead>
<tr>
<th>Related and supporting industries</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Related industries provide inputs are important to innovation for the S.A. intermodal industry</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Supporting industries provide inputs that are important to innovation for S.A. intermodal industry</td>
<td>82%</td>
<td>0%</td>
<td>18%</td>
</tr>
<tr>
<td>The presence of a related industry provides a source of new entrants which bring a new approach to competition in the intermodal industry</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Open gates and deregulation of the intermodal industry emphasised service levels in the intermodal industry</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Open gates and deregulation of the intermodal industry emphasised client focus in the intermodal industry</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Deregulation of supporting industries will increase the quality of service offered by the intermodal transporter and the port</td>
<td>73%</td>
<td>18%</td>
<td>9%</td>
</tr>
<tr>
<td>Supporting industries that are internationally competitive promotes the competitive advantage of the intermodal industry</td>
<td>55%</td>
<td>0%</td>
<td>45%</td>
</tr>
</tbody>
</table>
From Table 4.10, the following interesting observations on related and supporting industries were made:

- All participants (100 %) were of the opinion that related industries provided inputs for innovation.

- Eighty two percent of the respondents were of the opinion that supporting industries provided inputs for innovation to the intermodal industry, while 18 % disagreed.

- All respondents also agreed that related industries provided new entrants for competition. Should the shipping lines, for example, contact the intermodal transporter for a delivery, and the intermodal transporter not be able to do the delivery, a transporter outside of the intermodal industry would be approached. Competition would therefore help to maintain a high quality of service.

- All the respondents also confirmed that open gates and the deregulation of the intermodal industry emphasised service levels and a client focus approach.

- Seventy three percent felt that deregulated supporting industries would increase the quality of service of the intermodal transporter, while 9 % disagreed. The only statement about which some respondents were uncertain, concerned the increase in quality. Participants were of the opinion that the benefits resulting from the deregulation of supporting industries would only be for the short term.

- More than half of the participants (55 %) said that internationally competitive supporting industries would promote the competitive advantage of the
intermodal industry, while 45% percent disagreed, showing a divided opinion about the issue. Supporting industries of international standard would probably not allow bottlenecks that are currently being experienced, to occur.

The strategy, structure and rivalry present in the intermodal industry could promote or impede achievement of a competitive advantage. A summary of the statements pertaining to the strategy, structure and rivalry promoting competitive advantage are shown in Table 4.11.

Table 4.11: Strategy, structure and rivalry promoting competitive advantage

<table>
<thead>
<tr>
<th>Strategy, structure and rivalry</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vigorous domestic rivalry forces organisations to look for ways to improve efficiency</td>
<td>82%</td>
<td>9%</td>
<td>9%</td>
</tr>
<tr>
<td>Creating and sustaining competitive advantage requires ongoing investments to upgrade skills</td>
<td>91%</td>
<td>9%</td>
<td>0%</td>
</tr>
<tr>
<td>Creating and sustaining competitive advantage requires ongoing investment for better understanding of the intermodal industry</td>
<td>91%</td>
<td>9%</td>
<td>0%</td>
</tr>
<tr>
<td>Creating and sustaining competitive advantage requires ongoing investment to exchange ideas across functions</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

From Table 4.11 the following observations were made on the strategy, structure and rivalry promoting competitive advantage:

- Eighty two percent of the respondents indicated that vigorous domestic rivalry forced organisations to improve efficiency. Nine percent were of the opinion that this was not the case, while 9% were uncertain about the statement. Vigorous rivalry poses the threat to inefficient and poor quality service operators of losing market share.
• Ninety one percent of the respondents said that investments were necessary to create and sustain competitive advantage and 9% were uncertain. Nobody disagreed with the statement.

• The majority of participants (91%) said that investments were necessary to upgrade skills and increase the understanding of the intermodal industry that would create and sustain competitive advantage, and 9% percent were uncertain about the statement. Again, no one disagreed.

• All 11 participants agreed that investments were necessary to exchange ideas across functions in the intermodal industry.

4.6 RESULTS PERTAINING TO THE COMPETITIVE ADVANTAGE OF THE INTERMODAL INDUSTRY

The results of section three of the interview are indicated in Table 4.12. A brief discussion of the data is provided following the table.

Creating a competitive advantage for an intermodal organisation is of cardinal importance, in order to survive in an industry known for its cut-throat pricing and tough competition. Achieving a competitive advantage would provide customers with a competitive edge. Statements pertaining to achieving a competitive advantage in the intermodal industry are shown in Table 4.12.

Table 4.12: Competitive advantage of the intermodal industry

<table>
<thead>
<tr>
<th>Competitive advantage</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
</tr>
</thead>
</table>

120
The intermodal industry should use a low price strategy to obtain competitive advantage

The intermodal industry should use a differentiation strategy to obtain competitive advantage

The intermodal industry should use a combination of price and differentiation strategy to obtain competitive advantage

The intermodal industry should use a focus strategy to obtain competitive advantage

Vigorous domestic rivalry, after open gates, forced the government-owned intermodal transporter to improve efficiency

Vigorous domestic rivalry, after open gates, forced the government-owned intermodal transporter to be innovative

Vigorous domestic rivalry, after open gates, forced the government-owned intermodal transporter to become competitive

Service/product innovation will contribute most to being the ideal intermodal transporter

Continuous improvement or total quality management will contribute to being the ideal intermodal transporter

Environmental systems will contribute most to being the ideal intermodal transporter

Health and safety systems will contribute most to being the ideal intermodal transporter

Quality management will contribute most to being the ideal intermodal transporter

Technological know-how will contribute most to being the ideal intermodal transporter

From Table 4.12, the following observations were made of competitive advantage and the intermodal industry:

- Eighteen percent of the respondents favoured the implementation of a low price strategy, while 18 % were uncertain and 64 % disagreed. The reason why 64 % were not in favour of a low price strategy is that there is normally a correlation between low price and low quality.

- Eighty two percent were in favour of a differentiation strategy and 18 % were uncertain. No one was against such a strategy.

- All participants were in favour of a combination between price and differentiation strategy, indicating a balance between the price and the services offered.
• One hundred percent support was also given to a focus strategy, indicating that intermodal transporters needed to focus only on the transport of containers. This would increase the economies of scale resulting in better prices to customers.

• Fifty five percent of respondents were of the opinion that vigorous domestic rivalry, after open gates, forced the government-owned intermodal transporter to improve efficiency. Thirty six percent disagreed, while 9 % were uncertain.

• Forty six percent agreed that vigorous rivalry, after open gates, forced the government-owned intermodal transporter to be innovative, while 45 % disagreed, and 9% were uncertain. The government intermodal transporter, after open gates, introduced new methods of placing containers. Side loaders were introduced a year after open gates.

• An equal number of respondents said that domestic rivalry forced the government-owned intermodal transporter to be competitive, and disagreed with this statement. Nine percent were uncertain. After open gates, a market-related price structure was compiled, because monopolistic pricing no longer applied.

• Ninety one percent of the respondents indicated that service / product innovation would contribute most to being the ideal intermodal transporter, while 9% disagreed. Intermodal organisations offered volume discounts as well as after-hour deliveries to increase utilisation of vehicles.

• When asked about continuous improvement, 100 % indicated that it would contribute to being the ideal intermodal transporter. Transporters are currently training drivers to offer a professional service to create a competitive edge on their competitors.
• It was encouraging to note that 46% of all respondents indicated that environmental systems and health and safety systems would contribute to being the ideal intermodal transporter. Eighteen percent disagreed, while a significant 36% percent were uncertain.

• Asked about quality management, 91% agreed that this would contribute to being their ideal transporter and 9% were uncertain. This shows that only transport organisations that are involved in benchmarking and continuous improvement are likely to be able to create a competitive edge.

• Responding on the technological know how, over 82% were of the opinion that this would contribute to being their ideal transporter, while 9% indicated disagreement and the other 9% were uncertain. The responses from participants showed that technological know how of the marketing and operational personnel could give a competitive advantage to the intermodal transporter.

4.7 RESULTS PERTAINING TO THE COMPETITIVE ENVIRONMENT

Another factor associated with competitive advantage is that of the environment in which organisations operate. Organisations continuously need to adjust their strategies to the changing environment to benefit from the opportunities and threats. Table 4.13 provides a summary of the respondents’ opinions.

Table 4.13: Competitive environment

<table>
<thead>
<tr>
<th>Competitive environment</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entry barriers to do business in the intermodal industry are low</td>
<td>37%</td>
<td>36%</td>
<td>27%</td>
</tr>
</tbody>
</table>
The following observations were made from Table 4.13:

- Table 4.13 showed a far wider spread between the numbers of respondents who agreed, disagreed, or were uncertain about the statements, than was the case with the other tables.

- On entry barriers, 37% agreed that barriers to entry were low, 36% were uncertain, and 27% percent disagreed, showing a divided opinion among the respondents.

- Asked about investment cost, 55% agreed that this was high for the intermodal industry, while 27% disagreed and 18% were uncertain.

- All respondents (100%) were of the opinion that there were many alternative intermodal transporters besides the big names in the industry. This finding might come as a surprise to Freightdynamics, the biggest intermodal transporter in South Africa.
Sixty four percent agreed that the organisation in which they were employed negotiated the intermodal road transport tariffs with the transporter, while 27 % disagreed and 9 % were uncertain.

When respondents were asked if the switching cost from one intermodal transporter to another was low, 64 % agreed, 9 % were uncertain, and 27 % disagreed. This is another reason why the current intermodal transporters cannot be assured of their market share.

On the question of new product development, 64 % indicated that their preferred transporter was involved with this, 18 % disagreed and 18 % were uncertain. All the respondents, however, agreed that they would prefer an intermodal service provider that was involved in new product development. The importance of new product development in the intermodal industry thus offers the industry an opportunity to create a competitive edge.

Fifty five percent of participants agreed that new competitors in the intermodal industry were replacing the government-owned intermodal transporter. Twenty seven percent were uncertain and 18 % disagreed with the statement.

When asked about foreign direct investments into South Africa, 64 % agreed that this would have a positive effect on the intermodal industry and 36 % were uncertain. With the investments, foreign trade would grow leading to an increase in the volume of containers being exported/imported to/from South Africa, as well as foreign companies being established in South Africa. All this will demand that the intermodal industry increase performance factors to compete internationally.

One hundred percent of the participants agreed that political stability and favourable trade conditions in South Africa would have a positive effect on the import / export volumes. The importance of these two issues to the
respondents shows that favourable trade conditions will attract even more foreign direct investments.

4.8 RESULTS ON THE ADVANTAGES AND CHALLENGES OF THE INTERMODAL INDUSTRY

The results of section five of the interview are indicated in Table 4.14. A brief discussion of the data is provided after the table. The semi deregulation of the intermodal industry in South Africa took place only in 2000, and there are thus many challenges and opportunities facing this industry. These challenges and opportunities are summarised in Table 4.14.

Table 4.14: The organisations’ opinions on the advantages and challenges of the intermodal industry in the NMMM

<table>
<thead>
<tr>
<th>Advantages and challenges of the intermodal industry</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good client–service provider relationships will contribute most to a competitive advantage</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>A value-for-money service will contribute most to a competitive advantage</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>A customer-driven approach will contribute most to a competitive advantage</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Capacity availability will contribute most to a competitive advantage</td>
<td>82%</td>
<td>0%</td>
<td>18%</td>
</tr>
</tbody>
</table>
Improving information technology and systems will contribute most to a competitive advantage | 82% | 18% | 0%
Skills development of the labour force will contribute most to a competitive advantage | 82% | 18% | 0%
Promotion of services will contribute most to a competitive advantage | 82% | 18% | 0%
New investment into the intermodal industry will contribute most to a competitive advantage | 91% | 9% | 0%

From Table 4.14, the following interesting observations on the advantages and challenges of the intermodal industry in the NMMN were made:

- There was no uncertainty amongst respondents that good client–service provider relationships; a value-for-money service; and a customer-driven approach were important. Participants indicated that higher prices could be paid, but only if the service quality is high. There has to be a balance between the price charged and the quality of service offered. This provides an indication that marketing personnel are necessary to build these relationships.

- Eighty two percent of respondents indicated that capacity availability would contribute to competitive advantage, while 18 % disagreed. Capacity availability, however, is not always possible, because most of the time clients need deliveries to be made by eight o clock in the morning. No transporter can deliver 100 containers at a certain time when there are only 50 trucks available. The problem can be resolved with planning as well as good client–customer relationships.

- Eighty two percent of respondents were of the opinion that improved information technology and systems were important to create a competitive advantage. Clients need to have up-to-the-minute information on the status of their container deliveries. They need to know if a delivery has taken place, if the container is still in the port, or whether it has been delayed or other problems have come up.
• Eighty two percent of respondents agreed that skills development of the labour force would provide a competitive advantage, while 18 % were uncertain. This may include driver training and computer classes for administrative staff.

• Eighty two percent of participants were of the opinion that promotion of services would contribute to a competitive advantage, while 18 % were uncertain. Marketing personnel can promote new and current services as well as build on good client–service provider relationships.

• Ninety one percent of participants were of the opinion that new investments would most definitely contribute to competitive advantage in the intermodal industry. Only 9 % were uncertain. Respondents indicated that the investments required were in the areas of information technology, new trucks and 12-meter trailers.

4.9 SUMMARY

The aim of this chapter was to set out the planning, the execution and the results of the empirical component of the study. The empirical study was designed in an attempt to persuade respondents to provide information that would assist the researcher in answering the sub-problems, and to compile a strategic base to address the main problem.

The questionnaire used in structured interviews was based on the theory discussed in Chapters two and three. Major topics covered included demographics and geographics of respondents, performance factors, demand conditions, relating and supporting industries, strategy, structure and rivalry, competitive environment, and the advantages and challenges of the intermodal industry. Results and interpretations for each question were tabled, and statements analysed. Conclusions and recommendations based on the findings are presented in Chapter five.
CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

In the previous chapter the findings of the empirical study were discussed. The aim of this last chapter is to integrate the findings of the literature study with those of the empirical survey, in an effort to identify the factors that contribute to a competitive advantage in the intermodal industry in the NMMM. Based on the foregoing, a recommended strategy focused on gaining competitive advantage in the intermodal industry, was formulated.

5.2 SYNOPSIS OF THE STUDY

Chapter one set the scene for the research by providing a background to, and reasons for, the study. The model of national competitive advantage, discussed in Chapter two, resolved the first sub-problem, namely: “What does the literature reveal about the strategic bases of competitive advantage that can be applied to the intermodal transport industry in the Nelson Mandela Metropolitan Municipality?” Chapter three reported on the intermodal industry in general, with a specific focus on the intermodal industry in the NMMM. Chapter four provided an overview of the methodology followed in the empirical study, together with the findings resulting from the investigation into the competitive advantage of the intermodal transport industry in the NMMM. Information for Chapter four was obtained from the clients involved in the intermodal industry. This assisted in resolving sub-problem two. An integration of the literature from Chapters two and three and the results from Chapter four addressed the main problem, namely: “Which factors contribute to a competitive advantage in the intermodal industry in the Nelson Mandela Metropolitan Municipality?”
5.3 CONCLUSIONS AND RECOMMENDATIONS BASED ON THE LITERATURE STUDY AND EMPIRICAL FINDINGS

5.3.1 Demographics and geographics (Section 1)

This section of the questionnaire did not directly contribute to the attainment of the objectives of the research, but it is valuable to have knowledge of the profile of the respondents as discussed in Chapter four, since these findings will assist intermodal organisations in determining their future strategies. It was noteworthy that the majority of participants were shipping lines, focusing their business on the general segment of the market (see Tables 4.1 and 4.2). An encouraging fact was that 64% of respondents were handling a thousand and more containers per month in the 11 – 50 kilometer radius. The same number of respondents also indicated that the size of customers was not considered when choosing an intermodal transporter, 73% did not consider the proximity of an intermodal transporter’s depot, while 64% indicated that the location of the intermodal transporter’s office was important.

In summary, the following recommendations based on demographics and geographics can be made:

- As the shipping lines are the most important players in the NMMM intermodal industry, a marketing strategy aimed at the shipping lines is necessary.

- Based on the importance attached to the location of the intermodal transporter’s offices, it would make sense to locate these offices as close as possible to the shipping lines for ease of delivery of CTO’s. The best location for the intermodal transporter’s offices would be in the port area, as close as possible to the office of the port that receives CTO’s. Only after the port has processed the documentation can the transporter use the CTO for delivery.
5.3.2 Factors promoting competitive advantage (Section 2)

5.3.2.1 Performance factors

The research findings resulting from the structured interviews showed that the most important performance factors in the intermodal industry in the Nelson Mandela Metropolitan Municipality were: quality advantage; cost advantage; speed, flexibility and dependability (see Table 4.8).

To achieve a competitive advantage, an intermodal organisation should focus on the following:

- a quality service offered to the import/export market;
- a cost advantage, implying a price related to the service being offered by the intermodal organisation; and
- a dependable service with the necessary speed and flexibility that is required by the client via the shipping line.

5.3.2.2 Demand conditions

The researcher suggests that Porter’s statement on demand conditions related to the intermodal industry in the NM MMM are indirectly linked to international trade. All demands for the intermodal industry’s services were for the import or export of products to/from the port of Port Elizabeth. From Table 4.9, the following conclusions and recommendations were made.

- Besides focusing the marketing strategy on the shipping lines, the cargo owner also needs to be informed from the intermodal transporter’s side, which services are being offered, and what can be offered to provide logistical
solutions.

• The shipping lines need to be convinced that the intermodal service offered is the preferred service.

• As price is of high importance, there needs to be a balance between the price charged and service quality offered, while price–volume discounts should also be considered. The competition is fierce, and only the service provider with the best price–quality service will secure the contract.

• Quality is even more important (see Table 4.8) and intermodal organisations need to focus on the quality aspect of the industry, which includes order taking, pickup, documentation, tracing, billing statements, problem-solving, advice, and information.

• Intermodal transporters need to have a good reputation, as the industry, by means of word of mouth, identifies who are reputable who are not.

• The government intermodal transporter has to address the inefficiencies in the organisation, as well as create an image of a private enterprise.

• As shipping lines are the decision-makers, all strategies need to be focused on them.

• Since organisations have preferred intermodal transporters, market intelligence has to be employed to determine who these transporters are, and why they are preferred.

• Organisations still use the government intermodal transporter, even though it is not the preferred provider. The majority (75 %) of respondents indicated that when no one else was available, or no one else wanted to transport over-
height or over-weight containers, the government transporter was always available. This implies that the shipping lines know the government intermodal transporter will take out the necessary permits, which other transporters do not want to do, or that they have the specialised equipment to transport abnormal loads.

- The intermodal industry needs to look at innovative ways of offering their services. New services and process changes, as well as an increase in the quality of service, could create a competitive advantage in the industry.

5.3.2.3 Related and supporting industries

Related and supporting industries are the necessary external determinants in achieving a competitive advantage in the intermodal industry. Internal determinants to achieving a competitive advantage include the price and quality of service offered to the import/export market’s clients. From the structured interviews, which included questions on related and supporting industries the following conclusions and recommendations can be made.

- All participants (100%) indicated that the intermodal industry is dependent on related industries for innovation to achieve competitive advantage. Shipping lines and clearing and forwarding agents need to provide innovative ideas and processes to assist the intermodal industry to achieve a competitive advantage that would be to the benefit of the related industries.

- As 82% of the respondents maintained that supporting industries provide the inputs for the intermodal industry to achieve a competitive advantage, the container depots and the port should provide the innovative ideas and processes for the intermodal industry to achieve a competitive edge.

- Open gates of the port to private haulers, as well as the semi-deregulation of
the intermodal industry, have led to the government intermodal transporter losing market share to the private haulers entering the industry. The only way the government intermodal transporter can retain and win back market share, is through emphasising the quality of their service, and by following a customer-driven approach.

- Seventy three percent of participants were of the opinion that the deregulation of the port would increase the quality of service offered. Once the port was deregulated, the productivity of straddle carriers in the port area would increase, reducing the queuing of trucks. The queuing at the port results in late deliveries, negatively affecting the intermodal transporter’s quality of service, as well as the transporter’s productivity on vehicles.

- More than half of the participants indicated that supporting industries that were of international standard (this is not currently the case), would promote the competitive advantage of the intermodal industry. The port authority and the intermodal industry need to discuss problem areas and issues of concern that would be to the benefit of both parties when resolved.

5.3.2.4 Firm’s strategy, structure and rivalry

The results from the empirical study (see Table 4.11) indicated that each statement relating to Porter’s diamond on firm strategy, structure and rivalry was well supported. An organisation’s strategy and structure, as well as rivalry in the intermodal industry will determine if a competitive advantage can be achieved.

From the findings of Table 4.11, the following conclusions were made.

- Eighty two percent of the respondents agreed that vigorous rivalry forced organisations to improve efficiency. The government intermodal transporter, after open gates, had to look at ways to improve efficiencies and protect
market share from the private organisations that had entered the industry.

- As 91% of the respondents were of the opinion that investments would create and sustain a competitive advantage in the intermodal industry, it is clear that investment in skills and technology is necessary, for management to be proactive in their business decision-making.

- Ninety percent also said that investment in training and the development of human resources is necessary, for employees to understand the intermodal industry and thereby create and sustain competitive advantage, pointing to the importance of investment in human capital.

- All participants (100%) said that investment is necessary to exchange ideas across functions. Ideas of innovation, ideas to improve the service offered, and ideas on the improvement of processes, are required to create and sustain competitive advantage.

5.3.3 Strategies to achieve competitive advantage (Section 3)

There are four types of strategies the intermodal industry can choose from to achieve a competitive advantage. These strategies are a low price strategy, a differentiation strategy, a combination of price and differentiation strategy, and a focus strategy. The results showed that 64% of the respondents were against the intermodal industry using a low price strategy, and 82% agreed to a differentiation strategy, while all the participants (100%) agreed to either a combination of price and differentiation strategy, or a focus strategy. The results from Table 4.12 brought the researcher to the following conclusions.

- The intermodal industry needs to adopt a combination of the price and differentiation strategy. The success of this strategy depends on the ability to
understand and to deliver enhanced value in terms of customer needs, while also having a cost base that permits low prices and is sufficient for reinvestment to maintain and develop bases of differentiation.

- Alternatively, a focused strategy that seeks to provide high perceived value justifying a price premium to a selected market segment could be pursued.

Whichever strategy is chosen, the chosen strategy needs to address the issues as listed below.

- The intermodal industry needs to improve efficiency to be innovative, and to be more competitive in terms of the prices charged and the quality of service offered.

- The intermodal industry needs to apply continuous improvement or total quality management to become the ideal transporter.

- The intermodal industry needs to adopt an environmental system as well as a health and safety system. An environmental system would include suppliers of recyclable inputs and environment friendly products, while a health and safety system would include protective clothing for employees, the necessary procedures for the transport of hazardous cargo, and process being in place in the event of an accident where hazardous cargo is involved.

- Employees of the intermodal industry need to become more acquainted with, and skilled in, the technological know how of the industry. Technological know how, for example, includes the legal limit of equipment.

### 5.3.4 The competitive environment (Section 4)

There is an uncertain world around the organisation or industry, known as the
competitive environment. The competitive environment encapsulates many different influences.

The difficulty is in making sense of the diversity and complexity of the environment, as well as keeping pace with the speed of change in the environment. Four of the forces that help to identify the sources of competitiveness in the environment are discussed below.

5.3.4.1 Barriers to entry

The strength of the competitive force of potential competitors depends largely on the barriers to entry. The greater the costs to enter an industry, the greater are the barriers to entry. The results obtained from the empirical study on the threat of entry showed that 37 % (see Table 4.13) of the respondents indicated that the entry barriers into the intermodal industry were low, while 27 % disagreed, and 36 % were uncertain. From the interview, it was clear that entry barriers were low and that the environment was highly competitive. Current intermodal transport operators therefore need to protect their market share from potential competitors entering the intermodal transport industry. A strategy of excellent service as well as a customer-driven approach is suggested.

About half the respondents perceived the capital investment cost of the industry to be high. This perception is contradictory to the one that the barriers of entry are low. It is often the case that organisations that enter the market do so either as a one-man business with one or two vehicles, or as a current transport organisation that differentiates its services.

5.3.4.2 The bargaining power of buyers

A buyer is viewed as a competitive threat when he is in a position to demand lower
prices or a better service from an organisation, than what is offered.

The results obtained from the empirical study on the bargaining power of buyers showed that all participants (100%) had a high bargaining power because there were many alternative sources of road transport besides the big names in the industry.

To highlight the statement, 64% of the participants indicated that intermodal tariffs were negotiated with transporters to find the best possible price. Another point to show the bargaining power of buyers was the fact that 64% indicated that switching cost from one transporter to another was low.

5.3.4.3 Threat of substitute products or services

The results obtained from the empirical study on the threat of substitutes showed that 55% of participants indicated that new service providers were replacing the older service providers on a continuous basis. Current intermodal operators are therefore advised to review their operations and perform a SWOT analysis to determine the strengths and weaknesses of the new intermodal service providers replacing the older organisations, to determine their strengths and weaknesses.

5.3.4.4 International and local environment

The results obtained from the structured interview showed that 64% of respondents indicated that foreign direct investment would have a positive effect on the intermodal industry in the NMMM. On a statement regarding the political stability in the NMMM, all participants (100%) indicated that political stability would have a positive effect on international trade, and would positively influence the intermodal industry.

5.3.5 Advantages and challenges of the intermodal industry (Section 5)
Statements on the advantages and challenges of the intermodal industry were communicated to the participants (see Table 4.14). The researcher came to the following conclusions and recommendations.

- Good client–service provider relationships are necessary to achieve a competitive advantage in the intermodal industry. A marketing team would be needed to enhance the public relations between client and service provider.

- Value-for-money service needs to be rendered. Too high a price in a competitive market such as the intermodal industry would mean a disaster.

- The service offered needs to be a client-focused approach or a customer-driven approach, and not an operations approach, as was the case before the deregulation of the intermodal industry.

- To achieve a competitive advantage in the intermodal industry, sufficient capacity, in terms of truck trailers, should be made available. The ratio between hauler and trailer needs to be 1:4. With four trailers to one hauler available, export containers could be placed at the customer’s premises for packing, while the same hauler could collect another three containers for placing with other customers.

- The intermodal industry could achieve a competitive advantage with the improvement of information technology in terms of tracking and tracing container movements.

- Training of the labour force can bring about a competitive advantage. In order for industries to be globally competitive, it is essential that the workforce have
adequate skills, especially in fundamental areas such as communication and business. The challenges facing the industry are the lack of skilled staff, particularly when the AIDS pandemic takes its toll on the productive workforce in a couple of years’ time.

- The marketing and promotion of services to create a demand for the intermodal service. The intermodal industry needs to emphasize the benefits of transporting cargo in containers compared to conventional break bulk transportation.

- New investment in terms of capital equipment to create capacity availability, investment in human capital and investment in information technology would create and contribute most to a competitive advantage.

5.4 RECOMMENDATIONS FOR DEVELOPING A STRATEGY OF COMPETITIVE ADVANTAGE

An organizational strategy or industry strategy has a long-term impact on the nature and characteristics of the organization and industry as the strategy developed will affect the ability of an organization to compete or not compete in the market place. Corporate level strategy has a long time horizon and a broad scope with a low level of detail that relates to growth or the increase in market share.

To formulate an effective strategy, senior management need to take into account the distinctive core competencies of the organization as well as scan the external environment for opportunities and threats. A proposed strategy to sustain competitive advantage in the intermodal industry in the NMMM will be discussed under the following headings: promotion of foreign direct investment, quality improvement, technological changes and innovations and the effect of transport legislation on
economic growth.

5.4.1 Promotion of foreign direct investment

The results of the literature study and empirical survey showed the important role government plays in attracting foreign direct investment. Through their choice of policies, statements and actions, government can both encourage and restrict foreign direct investment. Factors that positively influence foreign direct investment are large and wealthy domestic markets, a dynamic and stable economy, a favourable political environment and the openness of the country to foreign investments. Host governments can encourage foreign direct investments or can restrict foreign direct investment through laws and policies. It is important that the NMMM continues to attract as much foreign capital into the region as possible as this will positively influence the intermodal industry. To make foreign direct investments happen, organizations need to get involved by participating with regional government. The researcher is of the opinion that the intermodal organizations need to form a cluster or body to act as representative and work more closely with government to meet their needs and attract foreign direct investment to the NMMM.

Organizations in the intermodal industry have the opportunity to advertise and promote their services to international companies via the Internet, since the demand for container transport services is linked to international trade. Applying a strategy of differentiation and product quality with excellent service throughout the internal and external value chain would increase international trade. This is another way of promoting foreign direct investment in the NMMM.

5.4.2 Continuous improvement and quality service

Table 4.8 showed that respondents indicated that quality systems (100 percent) and cost of quality (90 percent) are the most important core competences an intermodal
transporter should have in creating and sustaining a competitive advantage. The quality of the service/product offering has an impact on the competitive position of the intermodal organization. Quality is a unique factor that cannot be copied and directly affects the competitive position in the market. Quality improvement is a continuous process that could be implemented with total quality management. Total quality management (TQM) can be implemented so that an organization can continuously improve and differentiate at the lowest cost. Continuous improvement adopts an approach to improve performance, which assures more and smaller incremental improvement steps.

It does see small improvements as having a significant advantage over larger ones. In continuous improvement it is not the role of improvement that is important, but the momentum of improvement. The concept implies a never-ending process of repeatedly questioning and requestioning the workings of an operation. Blindly adhering to the continuous quality improvement principle could lead to enthusiastic companies placing overwhelming focus on doing things right rather than doing the right things.

Organizations in the intermodal industry need to determine short to medium term goals to implement continuous improvement programmes. It is important that a commitment to quality be communicated through to all levels of the organization. To achieve TQM there needs to be improvement programmes towards employee skills in the form of training.

The improvement process will also enhance the acceptance of change as a way of life. Change will have to take place in management competencies as well as in the culture of the entire organization.

5.4.3 Innovative ideas and technology improvements

Innovation in the intermodal industry in the NMMM has become a necessity to create and sustain competitive advantage. The findings showed that product innovation (91
%, and continuous improvement (100 %) were regarded as core competences of an ideal intermodal operator. Through innovation organizations can differentiate their products/services. The goal is to exceed client expectations and gain market share. Innovation would improve output and reduce cost that will allow organizations to lower selling price without affecting their profitability.

Technology improvements are usually associated with high expenses or capital outlays. Technological improvements could include the upgrading of the organization’s information system. An information system (IS) is a computer-based system that accepts data as input, processes the data, and produces useful information for users. By improving information systems, accurate and rapid information can be obtained, which can be crucial to an organization’s competitive advantage. The information received can also indicate which areas of the business needs improvement – for example, data received on the number of containers delivered per truck per day could identify areas where improvement in productivity is needed to increase profitability per vehicle per driver.

5.4.4 The effect of transport legislation on economic growth

The mission of the national land freight transport policy is: “To provide safe, reliable, effective, efficient and fully integrated land freight transport operations and infrastructure which best meets the needs of customers at improving levels of service at an equitable cost in a fashion which supports government strategies for economic and social development while being environmentally and economically sustainable”.

In 1985 the government adopted a market-orientated approach to the land transport sector. A policy aimed at the promotion of competition in the freight transport sector was adopted. The abolition of certain permit requirements increased not only competition in the road transport sector (intramodal competition) but also competition between road and rail (intermodal competition).
One of the goals of the National Transport policy was to improve South Africa’s competitiveness and that of its infrastructure and operations through greater effectiveness and efficiency to better meet the needs of different stakeholders, both locally and globally.

According to the researcher the strategic objectives dealing with land freight transport will directly contribute to the competitiveness of export/import industries, namely the:

- Promotion of seamless intermodal services; and

- Enhancement of the quality of freight transport services through the provision of safe, secure, reliable and a cost-competitive system.

5.5 RECOMMENDED STRATEGIC ACTION

The recommended strategy for the intermodal industry focused on meeting the performance objectives of increased value to customers through increasing the competitiveness of business, increasing profitability and sustainability in the transport industry and decreasing the burden on the fiscus, both now and towards the future.

Three strategic actions are proposed namely lower cost, increase in reliability and transit times as well as offering the customer a choice to meet the differentiated needs.

5.5.1 Lowering system costs

System costs can be lowered by:
• Building density of customers in delivery areas;
• Building economics of scale in the different parts of the transport system; and
• Improving competitiveness by raising productivity.

5.5.2 Increase reliability and improve transit times

Reliability can be increased and transit times improved by:

• Improving the integration of the value chain and focusing the modes to optimize their service potential;
• Removing bottlenecks currently in the transport system; and
• Ensuring sufficient reinvestment to maintain quality infrastructure.

5.5.3 Improving customer choice

Improving customer choice through the creation of tailored systems by:

• Creating a balance between the differentiated service offered and the tariff charged;

• Building an industry platform that drives the system to differentiate and innovate; and

• Building capabilities in logistics and advanced skills.

The accomplishment of these factors will ensure an intermodal transport system that would be sustainable.

5.6 FINAL RECOMMENDATIONS

In the view of the foregoing discussion, the following recommendations are made. These proposed actions have to take the requirements of the client into account.
• Excellent quality service for export/import customers has to be provided to enhance the shipping line’s global competitiveness.

• The development of a comprehensive land freight information system. The technology to be used is electronic data interchange (EDI). EDI is the electronic transfer of data in a structured format. Data are passed from one computer to another without the need for human intervention. With EDI costs are reduced by eliminating errors and allows information sharing between supply chain partners.

• Job creation and encouragement of small and medium enterprises (SMME’s) have to take place, but not at the expense of competitiveness.

• Promotion of environmental protection and resource conservation, with specific reference to all aspects of transporting hazardous substances and goods.

• Advancement of human resource development through training and skills development.

• Expansion of participation in the intermodal industry through the creation and growth of entrepreneurial opportunities.

• Optimization of road traffic law enforcement.

• Promotion of an efficient and competitive intermodal industry within the limits of sustainable road transport infrastructure.

5.7 RECOMMENDED FUTURE RESEARCH
There are several more opportunities for further research into the competitive advantage to organisations in the intermodal industry, such as:

- A comparative study in intermodal industries outside of the NMMM;
- Research on continuous improvement or total quality management in the intermodal industry; and
- Research on a service quality strategy for the intermodal industry in South Africa.

REFERENCES


Coega. 2002. IDZ (Hand out).

Col lenette, D. 2003. Legislation - are we making the most effective use of all modes? *Logistics Outlook*, 40.


Annexure A: Cover letter
19 May 2003

For Attention:………………………….

Dear Sir / Madam

RESEARCH INTO THE FACTORS THAT CONTRIBUTE TO COMPETITIVE ADVANTAGE OF THE INTERMODAL INDUSTRY IN THE NELSON MANDELA METROPOLITAN MUNICIPALITY

I am currently conducting research in pursuance of a Masters degree through the Port Elizabeth Technikon. The title of the research project is “The identification of factors that contribute to the competitive advantage of the intermodal industry in the NMMM”.

In April 2000, open gates of the port of Port Elizabeth were realised. This forced the government-owned intermodal service provider to create a competitive advantage over many competitors that entered the market. The playing fields were levelled. The purpose of this study is to identify:

- The factors of competitive advantage of the intermodal transport industry; and
- The future challenges the industry may face in order to remain globally competitive.

The attached questionnaire is divided into sections that address issues relating to competitive advantage, and is provided as background to the interview. Your input would be extremely useful in formulating an appropriate strategy for sustaining competitive advantage in the intermodal industry. As agreed earlier on we will meet on. ...........................................at ........................................
Thank you for your assistance.

J. de Koker

Contact details
Telephone : 041 - 507 6077
Facsimile : 041 - 507 6088
E-Mail : JacquesdK@freightdynamics.co.za

Annexure B: Questionnaire
Structured interview on the competitive advantage of the intermodal industry in the Nelson Mandela Metropolitan Municipality

Section 1: Demographics and geographics
Please choose the most appropriate block

<table>
<thead>
<tr>
<th>Question</th>
<th>Automotive industry</th>
<th>Agricultural industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 The market in which your organisation operates?</td>
<td>Combination</td>
<td>Perishables</td>
</tr>
<tr>
<td>1.2 The categories under which your organisation resorts?</td>
<td>Clearing and forwarding</td>
<td>Cargo owner</td>
</tr>
<tr>
<td>1.3 The average number of containers handled by the organisation per month</td>
<td>50 - 100 101 - 400</td>
<td>401 - 600 601 - 1000</td>
</tr>
<tr>
<td>1.4 Your area of responsibility in the organisation</td>
<td>Logistics manager</td>
<td>Sales executive</td>
</tr>
<tr>
<td>1.5 Distance that your major customers are situated from the port of Port Elizabeth?</td>
<td>0-5km 6-10km 11-50km</td>
<td>51-300km</td>
</tr>
<tr>
<td>1.6 Does size of the customer/client determine your choice of intermodal transporter?</td>
<td>YES NO</td>
<td></td>
</tr>
<tr>
<td>1.7 Mode of transport used if goods are supplied to the export/import market</td>
<td>Air Sea Road Rail</td>
<td></td>
</tr>
<tr>
<td>1.8 Does proximity of the intermodal transporter’s depot determine your choice of transporter?</td>
<td>YES NO</td>
<td></td>
</tr>
<tr>
<td>1.9 Is it the opinion of the organisation that location of the intermodal transporter gives it a competitive advantage? If no, please explain</td>
<td>YES NO</td>
<td></td>
</tr>
<tr>
<td>Explanation:</td>
<td></td>
<td></td>
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</tbody>
</table>
Section 2: Factors promoting competitive advantage

Please indicate your agreement with each of the statements below, by choosing the most appropriate option for each statement.

<table>
<thead>
<tr>
<th>Performance factors</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1 Quality, i.e. doing things right, promotes competitive advantage</td>
<td></td>
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<tr>
<td>2.2 Speed, i.e. on-time delivery, promotes competitive advantage</td>
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<tr>
<td>2.3 Flexibility, i.e. being able to change the service operation in some way</td>
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<tr>
<td>2.4 Cost, i.e. offering market-related prices, promotes competitive advantage</td>
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<tr>
<td>2.5 Dependability, i.e. keeping delivery promises made to your customers, promotes</td>
<td></td>
<td></td>
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<tr>
<td>competitive advantage</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Demand conditions</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.6 Clients in your organisation do not request a specific intermodal transporter</td>
<td></td>
<td></td>
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<tr>
<td>2.7 Your organisation has no preference of intermodal transporter</td>
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<tr>
<td>2.8 Price is a determining factor</td>
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<tr>
<td>2.9 Service is a determining factor</td>
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<tr>
<td>2.10 Organisations, in general, prefer to deal with a reputable intermodal</td>
<td></td>
<td></td>
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<tr>
<td>transporter with the necessary general insurance, image and resources</td>
<td></td>
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<tr>
<td>2.11 Government owned intermodal transporters can’t create a competitive advantage</td>
<td></td>
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<tr>
<td>because of inefficiencies</td>
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<tr>
<td>2.12 Government owned intermodal transporters can’t create a competitive advantage</td>
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<td></td>
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<tr>
<td>because of image</td>
<td></td>
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<tr>
<td>2.13 The shipping line is normally the decision-maker in deciding which intermodal</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>transporter to use</td>
<td></td>
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<tr>
<td>2.15 Organisations, in general, prefer not to use the government-owned intermodal</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>transporter</td>
<td></td>
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<tr>
<td>2.16 The South African intermodal industry offers no competitive edge to customers.</td>
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<tr>
<td>Innovation is necessary.</td>
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<tr>
<td>2.17 The South African intermodal industry offers no competitive edge to customers.</td>
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<tr>
<td>Service quality is necessary.</td>
<td></td>
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<tr>
<td>Related and supporting industries</td>
<td>Agree</td>
<td>Uncertain</td>
<td>Disagree</td>
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<tr>
<td>----------------------------------</td>
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<tr>
<td>2.18 Related (shipping lines) industries provide inputs that are important to innovation for the South African intermodal industry</td>
<td></td>
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<tr>
<td>2.19 Supporting (port) industries provide inputs that are important to innovation for the South African intermodal industry</td>
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<tr>
<td>2.20 The presence of a related industry (i.e. shipping lines) provides a source of new entrants which bring a new approach to competition in the intermodal industry</td>
<td></td>
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<tr>
<td>2.21 Open gates and deregulation of the intermodal industry emphasized service levels on the intermodal transporter</td>
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<tr>
<td>2.22 Open gates and deregulation of the intermodal industry emphasized client focus on the intermodal transporter</td>
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<tr>
<td>2.23 Deregulation of supporting industries (port) will increase the quality of service offered by the intermodal transporter</td>
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<tr>
<td>2.24 Deregulation of supporting industries (port) will increase the quality of service offered by the port</td>
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<tr>
<td>2.25 Supporting industries (i.e. Portnet) that are internationally competitive promotes the competitive advantage of the intermodal industry</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Strategy, structure and rivalry</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.26 Vigorous domestic rivalry forces organisations to look for ways to improve efficiency</td>
<td></td>
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<tr>
<td>2.27 Creating and sustaining competitive advantage requires ongoing investments to upgrade skills</td>
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<tr>
<td>2.28 Creating and sustaining competitive advantage requires ongoing investments for better understanding of the industry</td>
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<tr>
<td>2.29 Creating and sustaining competitive advantage requires ongoing investments to exchange ideas across functions</td>
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</tbody>
</table>
Section 3: Competitive advantage

Please indicate your agreement with each of the statements below by choosing the most appropriate option

<table>
<thead>
<tr>
<th>Statements</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1 The intermodal industry should use a low price strategy to obtain competitive advantage</td>
<td></td>
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<tr>
<td>3.2 The intermodal industry should use a differentiation strategy to obtain competitive advantage</td>
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<tr>
<td>3.3 The intermodal industry should use a combination of price and differentiation strategy to obtain competitive advantage</td>
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<tr>
<td>3.4 The intermodal industry should use a focus strategy to obtain a competitive advantage</td>
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<tr>
<td>3.5 Vigorous domestic rivalry, after the introduction of open gates forced the government owned intermodal transporter to improve efficiency</td>
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<tr>
<td>3.6 Vigorous domestic rivalry, after the introduction of open gates forced the government owned intermodal transporter to be innovative</td>
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<tr>
<td>3.7 Vigorous domestic rivalry, after the introduction of open gates forced the government owned intermodal transporter to become competitive</td>
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<tr>
<td>3.8 Service or product innovation will contribute to being the ideal intermodal transporter</td>
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<tr>
<td>3.9 Process technology innovation will contribute to being the ideal intermodal transporter</td>
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<tr>
<td>3.10 Continuous improvement or total quality management will contribute to being the ideal intermodal transporter</td>
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<tr>
<td>3.11 Environmental systems will contribute to being the ideal intermodal transporter</td>
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<tr>
<td>3.12 Health and safety systems will contribute to being the ideal intermodal transporter</td>
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<tr>
<td>3.13 Quality management will contribute to being the ideal intermodal transporter</td>
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<tr>
<td>3.14 Technological know-how will contribute to being the ideal intermodal transporter</td>
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</tbody>
</table>
Section 4: Competitive environment

Please indicate your agreement with each of the statements below by choosing the most appropriate block

<table>
<thead>
<tr>
<th>Statements</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1 Entry barriers to do business in the intermodal industry are low</td>
<td></td>
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<tr>
<td>4.2 Investment cost in the intermodal industry is high</td>
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<tr>
<td>4.3 There are many alternative sources of transport besides the big names in the industry</td>
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<tr>
<td>4.4 The organisation in which you are employed negotiate the intermodal tariffs</td>
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<tr>
<td>4.5 The switching cost from one intermodal transporter to the next is low</td>
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<tr>
<td>4.6 Your preferred intermodal transporter is involved with new product development on a continual basis</td>
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<tr>
<td>4.7 You prefer an intermodal transporter that is involved with new product development</td>
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<tr>
<td>4.8 New intermodal service providers are substituting older service providers on a continual basis</td>
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<tr>
<td>If the answer is AGREE, please explain</td>
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<tr>
<td>4.9 Foreign direct investment in South Africa will have a positive effect on the intermodal industry</td>
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<tr>
<td>4.10 Political stability will have a positive effect on import/export volumes</td>
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</tr>
<tr>
<td>4.11 Favourable trade conditions will have a positive effect on import/export volumes</td>
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</tbody>
</table>
Section 5: Advantages and challenges of the intermodal industry

Please indicate your agreement with each of the statements below by choosing the most appropriate option for each statement

<table>
<thead>
<tr>
<th>Statements</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1 Good client – service provider relationships will contribute to a competitive advantage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.2 A value for money service will contribute to a competitive advantage</td>
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</tr>
<tr>
<td>5.3 A customer-driven approach will contribute to a competitive advantage</td>
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</tr>
<tr>
<td>5.4 Capacity availability will contribute to a competitive advantage</td>
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<tr>
<td>5.5 Improving information technology and systems will contribute to a competitive advantage</td>
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</tr>
<tr>
<td>5.6 Skills development of the labour force will contribute to a competitive advantage</td>
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<td></td>
</tr>
<tr>
<td>5.7 Promotion of services will contribute to a competitive advantage</td>
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<td></td>
</tr>
<tr>
<td>5.8 New investment into the intermodal industry will contribute to a competitive advantage</td>
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</tr>
</tbody>
</table>

Thank you for your kind cooperation.