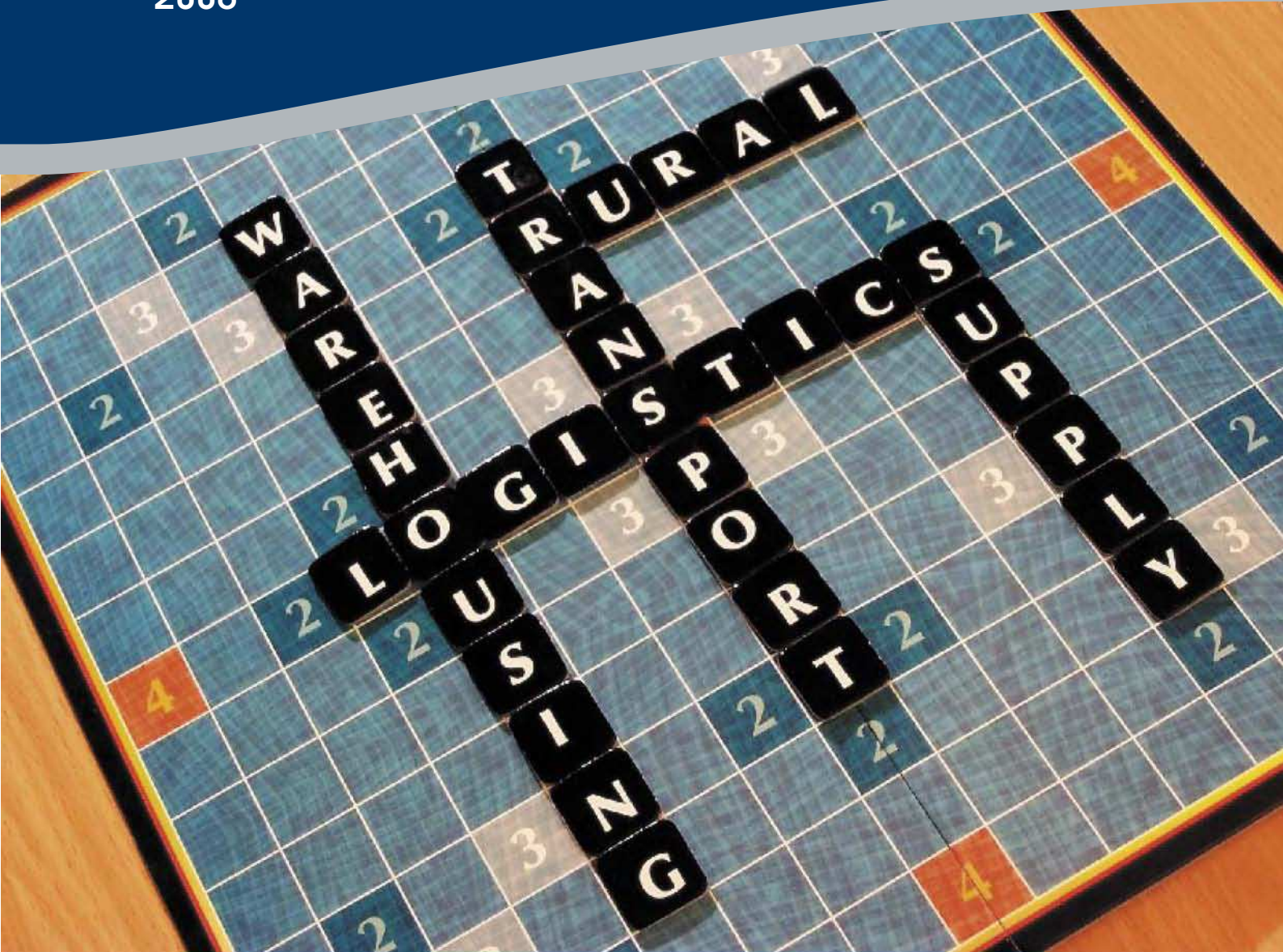




*our future through science*

**The third ANNUAL STATE OF LOGISTICS SURVEY FOR  
SOUTH AFRICA  
2006**



**"Implementing Logistics Strategies in a Developing Economy"**

## PREAMBLE

Logistics was identified by the South African government in the Accelerated and Shared-Growth Initiative of South Africa (ASGISA) as one of the six potential hurdles that may limit future growth in the country. Strategies were put in place to address this potential threat. The National Freight Logistics Strategy and the National Land Transport Strategic Framework are two such strategies, supported by strategies in many other spheres of government to ensure that the country increases its competitiveness. Currently these strategies are being implemented within our developing economy with varying degrees of success. The theme of this survey, "Implementing logistics strategies in a developing economy", is therefore highly appropriate. Implementation is critical but doing it properly and thoroughly with a long-term view does not happen overnight. Proper foundations need to be laid to ensure sustainable growth as well as increased competitiveness through world-class supply chains. It is only through such endeavours that South Africa will be able to operate and compete in the global market place. In addition, those within the second economy who require focused assistance, specifically from a logistics and supply chain management point of view, cannot be ignored.

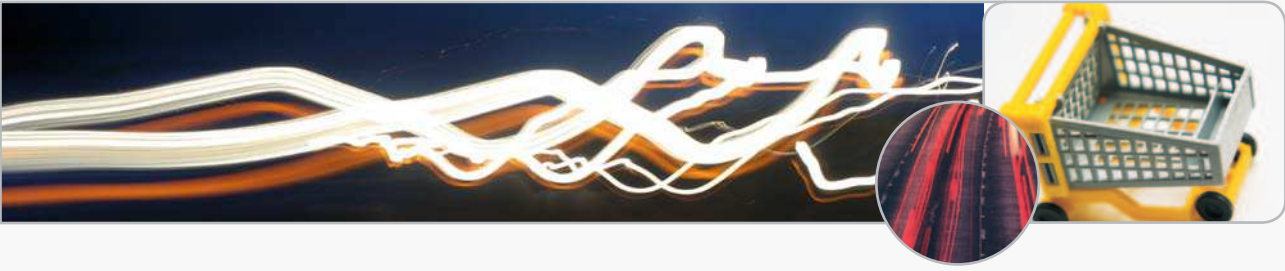
The CSIR (Council for Scientific and Industrial Research) and its associates believe that critical aspects are addressed in the third State of Logistics report. The report is similar in format to the first two surveys and allows for trend analysis, which is vital to keep track of what is happening in this critical area. From our current results it is interesting to note that although logistics costs are rising as a result of growth, the percentage of logistics cost, as a percentage of GDP, is decreasing since the growth in GDP is faster! Indications are that the envisaged improvements in infrastructure have not yet happened and this is to be expected. These improvements will take time to have the desired effect and impact. Nevertheless, all indications are that the appropriate interventions have been made and these now need to be implemented. As stated in the second survey, the National Freight Logistics Strategy now also needs time to affect reform.

Our industry focus in this survey is the fast-moving consumer goods (FMCG) sector. This is a large sector which is growing at almost the same rate as the economy but it also faces a whole range of challenges in the supply chain environment. It was important to determine how the sector copes with these and what innovation, if any, there is in this sector.

This survey should not only open the agenda for further discussions on various logistics and supply chain management issues, but also contribute to an appropriate R&D agenda. In this regard all stakeholders are urged to interact with the CSIR and academic institutions. It is only through these collaborative interactions that relevant research can be conducted that will benefit the country. The CSIR and its associates are however grateful for past feedback and interactions.

The CSIR would like to thank Transnet for its financial contribution to this research, and our partners for the work that led to this report.

*Hans W Ittmann*  
 Logistics and Quantitative Methods  
 CSIR Built Environment  
 Pretoria, South Africa  
 July 2007



**CONTENT**

Acknowledgements ..... iv

Executive summary ..... 1

Introduction.....2

Research approach .....4

Macro freight logistics' legacy to the second economy .....5

Macro-economic perspective ..... 16

Industry-level perspective.....20

Small business development perspective .....29

Perspective on the future .....33

## ACKNOWLEDGEMENTS

The following organisations made the production of this document possible:



CSIR Built Environment  
Logistics and Quantitative Methods

The Logistics and Quantitative Methods competence area is home to extensive expertise in operations research, quantitative modelling and logistics. It has a long history in research and consulting in various industries, and is the originator of the South African State of Logistics survey.



University of Stellenbosch  
Centre for Supply Chain Management  
Department of Logistics

The Centre for Supply Chain Management (CSCM) is an ancillary academic institution with its primary responsibilities being consulting and research services in the fields of supply chain strategy, strategy and business positioning, and market and economic research.

We would like to thank the following organisation for participating in the survey:



And a special thanks to our sponsor



Report edited by Isabel Meyer, Ilse Hobbs and Mario Marais



## EXECUTIVE SUMMARY

The second State of Logistics Survey in 2005 focused on defining the research priorities for developmental logistics. These priorities are driven by the need to connect to the international market, as well as the need to connect first and second economies in South Africa. South Africa's logistics landscape is in the process of being transformed by the implementation of strategic initiatives by major players such as Transnet. In this study, the focus shifts to the challenges of implementing logistics strategies in the macro-economic, industry and small business development contexts.

### Macro-economic perspective

The 2005 logistics cost is 14.5 % of the GDP, which is a slight decrease from 14.6% in 2004 and 14.8% in 2003. This is not a significant trend. What is significant is the increase in the contribution of the transport cost from 62.5% in 2003 to 63.1% in 2005. This increase in the transport sector's contribution was predicted in earlier surveys and can be ascribed to the fact that this sector is more susceptible to "administered" prices (cost elements outside the control of logisticians). The poor configuration and management of our freight network will continue to drive this trend. The total land transport in the South African economy increased by 8% to 1.4 billion tons. This growth was captured by road - the rail transport tonnages have now remained more or less stagnant for the past decade. Considering the predicted growth in the economy, it is clear that revolutionary change is required in the long-haul road/rail relationship to avoid road gridlock.

### Industry perspective: Fast Moving Consumer Goods

The South African FMCG sector is a study in complexity: not only is the consumer market growing rapidly, the consumer profile is also changing and the industry has to adapt accordingly. The FMCG logistics system is inefficient, with key supply chain performance indicators that are only halfway towards benchmark figures. There is a large disparity in the industry: some have made progress in reforming their supply chains, while the industry as a whole has hardly progressed. Leaders have made significant progress in demand management and operational excellence, leading to reduced operating costs and excess inventory. Supply-side processes and internal optimisation have been addressed at company level, but additional gains can only be realised through collaboration, specifically by optimising across supply chain partners and jointly addressing consumer needs. On the whole, supply chain maturity in the industry is low. While many players can state their supply chain collaboration goals, implementation is in reality rarely visible. The challenge is to alleviate those inefficiencies through the implementation of key collaborative efforts that meet joint objectives. Although a number of pilots bear evidence of more integrated supply chains, significant effort is required to move from partial to full implementation and to realise potential financial benefits.

### Industry perspective: Supply chains in government

Government service delivery in a constrained environment is critically dependent on supply chain efficiency and innovation in service delivery supply chains. Innovation in order to provide integrated access to government services is a priority. The Thusong Service Centres are designed to provide a one-stop IT-enabled service to communities across all levels of government. The public service has realised that it has not completely internalised the critical role that service points play in the service delivery supply chain. These centres create an opportunity to demonstrate the benefits of implementing a customer-focused supply chain and provide a platform for the use of mobile technologies such as SMS services to make eGovernment a reality.

### Small business development perspective

The key feature of small businesses in the second economy is low-volume supply chains. Two types of strategic approaches, namely logistics streamlining and economic mainstreaming, have the potential to improve the performance of low-volume supply chains. Case studies of the implementation of these approaches demonstrate the possibilities for the sustainable reduction of logistics costs and improved access to markets. To provide a contrast to this top-down approach to solution development, two case studies are presented that demonstrate how spaza owners develop their own strategies to deal with logistics challenges on a day-to-day basis. Non-South Africans are leading the way in using collaboration strategies to retain customers and decrease transport costs.

### Perspective on the future

The logistics industry is a key enabler of future economic growth, and the evolution of the industry is dependent upon all stakeholders fulfilling their appropriate roles. The following actions (in no particular order) are pivotal to sustainable change:

- A balanced strategic focus within the transport portfolio of the Department of Transport (DoT), and a measurable implementation plan.
- A useful information base to support macro economic and industry decisions.
- Continuous commentary on the industry by the research and consulting fraternity.
- Sharing of non-competitive information within industry.
- Collaboration between established industry clusters and logistics service providers to enhance competitiveness.
- Pro-active engagement amongst upcoming industry players.
- Transfer of learning between established and upcoming industries.
- Localisation of global practices by logistics service providers.

# INTRODUCTION

Ittmann, H.W.

The CSIR and its partners are proud to present the third annual State of Logistics survey. The data contained in the survey represents the 2005 reporting year. The aim of the survey continues to be the provision of a comprehensive overview of the state of logistics in South Africa, incorporating a macro-economic perspective (top-down), an industry-level perspective (bottom-up), and a small business development perspective. The latter deals with logistics as a developmental constraint for small, medium and micro enterprises (SMMEs) in urban and rural environments.

South Africa is currently in an intensive phase of large infrastructure development, which requires sophisticated engineering skills and world-class project management. Development has been necessitated by both a historic backlog in infrastructure investment and the infrastructure demands of the 2010 Soccer World Cup. This is placing significant demands on the already limited skilled manpower of the country. Additional pressure is placed on the strained logistics infrastructure by the fast growing economy, and the resultant increase in freight movement and traffic volumes. This is further exacerbated by the total lack of adequate public transport and record private motor vehicle sales. Congestion on especially urban roads is severely impacting freight movements, and is resulting in increased logistics costs. These conditions are expected to worsen in the short term, and South African industry is facing severe logistics challenges<sup>1</sup>:

*“A revamping of South Africa’s internal and external logistics infrastructures and systems is therefore critical to our future, both for African and for international competitiveness. The reality is that South Africa will take some years before it is able to re-engineer this infrastructure. During these years of re-engineering and reconstruction, South Africa, its businesses and its industries, will need to find ways and means of reducing its costs of logistics, and being able to provide its customers and its markets with the competitive advantage that comes from supply chain management focus and logistical integration...”*

From various interactions it seems as if businesses and industries are indeed formulating ways and means, some very innovative, to overcome the hurdles they face, while still endeavouring to lower logistics costs.

Given the above, South Africa should not fall into the trap where everything is short-term oriented. Stakeholders need to think big, be bold and consider a 50-year time horizon at minimum. There are enormous challenges facing the country in the short term in order to meet the requirements of 2010. However, it is critical to plan for and develop the infrastructure way beyond 2010.

The National Freight Logistics Strategy<sup>2</sup> is currently being implemented. Indications are that this process is progressing slowly. It has cascaded to provincial level, and one of the major constraints to efficient implementation is a lack of adequate and appropriate freight and related data. A number of projects have been initiated, but the impact of these will take time to be realised. At the same time there is a sense that the results of completed projects are not properly communicated. Many of the projects are carried out in isolation, while a very strong need exists for all the various stakeholders to collaborate, exchange information, inform those affected and even share resources. In this regard, the Department of Transport should play the leading role as the custodian of the industry in South Africa.

For South Africa to continue competing in the global market it is essential that a comprehensive picture of the state of logistics is maintained, that the logistics research agenda is set, agreed on and, critically important, acted upon. Furthermore all players should collaborate in achieving the goal of making this country a truly competitive nation.

## Trends in Supply Chains

As in many other environments, those operating in the logistics and supply chain management arena are keen to know what the top technologies and strategies are. From an international perspective, herewith a list published earlier this year<sup>3</sup>: e-auctions, labour management systems in distribution, spend management visibility, demand management, supplier portals, network optimisation, transportation management systems, strategic/global sourcing, “wireless” in the warehouse, and yard management systems and dock door scheduling. These are mainly operational actions that seek to reduce logistics costs further.

A number of other important trends are relevant, and include globalisation, dynamic alignment, development of flexibility and resilience and a response to environmental awareness in the form of “green” supply chains.

1 Saxton, B.M., 2006. Rock the Boat, Terranova, Bryanston, South Africa.

2 Department of Transport, 2005. National Freight Logistics Strategy, Department of Transport, Pretoria, South Africa.

3 Gilmore, D., 2007. The Top 10 Supply Chain Technologies and Strategies for 2007, SupplyChainDigest.

The drive towards stronger globalisation is relentless and the impact is already considerable. The effect and impact of low-cost emerging markets in Brazil, Russia, India, China and others are visible. "It is going to affect and change the lives of many of our people, and it requires us to recognise and manage these changes if we are to maximise the benefit. Changes are hardest on those caught by surprise and those who have difficulty changing".<sup>4</sup>

A glowing example of what globalisation implies is illustrated by what has been happening in Hong Kong. Not long ago Hong Kong was gripped by panic that Shanghai may topple it as the premier financial hub of China. In addition to maintaining that position, Hong Kong-based companies have truly distinguished themselves in the growing field of supply chain management. "Rather than merely sourcing, they can supervise the entire production process, handling everything from merchandise design to quality control to transportation.....some Hong Kong-based manufacturers are now reinventing themselves by providing supply chain management services to big customers."<sup>5</sup> All of these services are offered from the comfort of a Hong Kong office.

A very recent principle, developed by Gattorna<sup>6</sup>, of matching changing customer needs and desires with different supply chain strategies is called dynamic alignment. It is a new way of understanding customers, how they wish to buy products or services and then providing the exact responses required. Gattorna also emphasises the fact that that supply chains are ultimately driven by people through his definition of the term "living supply chains". Improving the supply chain is 45% dependent on people, 45% on systems and just 10% on infrastructure. The question is thus whether the (singular) emphasis on infrastructure in South Africa is a sustainable solution.

Occurrences such as natural disasters and terrorist actions are not the only cause of supply chain disruptions. In industries that grow rapidly, capacity can be tight because of the time it takes to build new plants and bring the production facilities on line. When supply and demand is finely balanced, even a relatively minor dislocation can throw a company into crisis, particularly in global markets. The potential vulnerability to such disruptions needs to be understood and companies need to build security and resilience into their supply chains.

Flexibility throughout the supply chain is becoming essential and this must be based on proven supply chain design principles and the right culture. Investment in resilience and flexibility will create competitive advantage in an increasingly volatile marketplace.<sup>7</sup>

The issue of global warming, together with the negative effect of economic activity on our environment, has rarely been more prominent. Concern for the environment will soon be part of the mindset of a critical mass of consumers, which will result in shippers, logistics and supply chain operators factoring it into the making of business decisions and choosing of suppliers. "Green" supply chains will become a requirement in future.

4 Saxton, B.M., 2006. Rock the Boat, Terranova, Bryanston, South Africa.

5 Hong Kong's Capital Gains, Time magazine, January 29, 2007, p51-52.

6 Gattorna, J., 2006. Living Supply Chains, Pearson Education Limited, Harlow, UK.

7 Sheffi, Y., 2006. The Resilient Enterprise, The MIT Press, Cambridge, Massachusetts, USA.

# RESEARCH APPROACH

The multiple perspectives considered by the State of Logistics survey includes established areas of research such as cost modelling, transport economics and supply chain analysis, as well as emerging research areas such as the role of logistics in economic development. The research methodology reflects this holistic approach, as well as the relative maturity of these research areas. A more formal and quantitative approach is adopted for the development of the cost of logistics, while a more qualitative and exploratory approach is applied to the small business and economic development perspective.

The research approach is summarised in Figure 1.

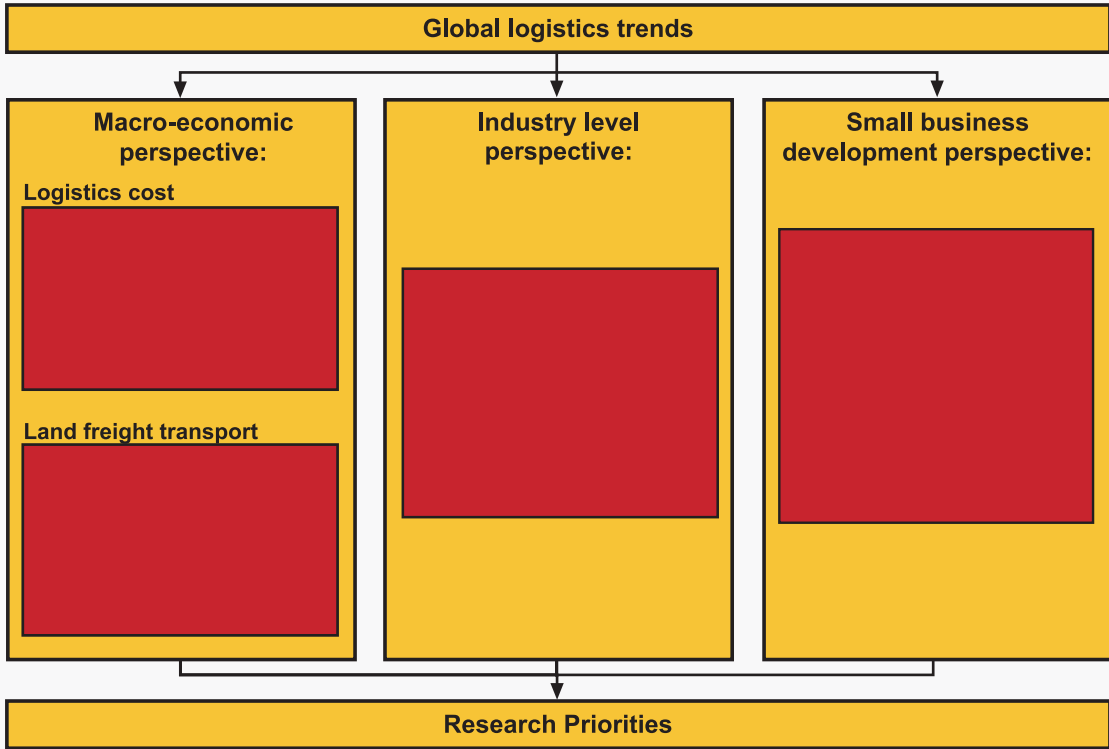


Figure 1: Research approach<sup>8</sup>

8 SANRAL = South African National Roads Agency Limited



# MACRO FREIGHT LOGISTICS' LEGACY TO THE SECOND ECONOMY

Havenga, J.H. and Naudé, A.H.

## Introduction

A major focus of the current government is the development of South Africa's second economy. Growth in the second economy will facilitate the realisation of important goals, such as the creation of employment, growth in the first economy, social upliftment and spatial re-organisation of the country<sup>9</sup>. The question begs, however, whether, after 13 years of liberation, government has made adequate progress on these goals. More pressing for the focus of this publication, however, is the contribution of the logistics community in this regard.

The logistics community should learn from the distant and recent past, and unfortunately the thread is not so golden. History, especially with respect to infrastructure investment, talks about self-interest, political ideologies, mistakes and personal agendas and it is often hard to make sense of decisions that were made in and about the logistics industry. Some of these decisions impact the economy for more than 150 years, and very few have a time-span shorter than thirty years. Perhaps this is the biggest lesson from the past – that short planning horizons in infrastructure development planning create burdensome legacies for future generations.

## Early beginnings

The foundation for South Africa's transport infrastructure was laid in the middle nineteenth century, about fifty years later than in the first world<sup>10</sup>. Transport was slow and painful in those days and people often didn't move much during their lifetimes. Today it is commonplace for people involved in disasters such as shipwrecks to be returned home quickly to their loved ones (and these reunions are broadcast worldwide) even if it took place halfway around the world. It is often forgotten that incidents like the sinking of the Birkenhead close to Gansbaai literally led to situations where Afrikaans-speaking residents of the area who had English surnames could trace their lineage back to soldiers who survived the incident.

The development of transport infrastructure in those times also quickly became a road-rail debate, despite the unambiguous advantage that a steam train on iron tracks had over oxen pulling wagons over dirt roads. The power of politics is reflected in the thought process of those early days:

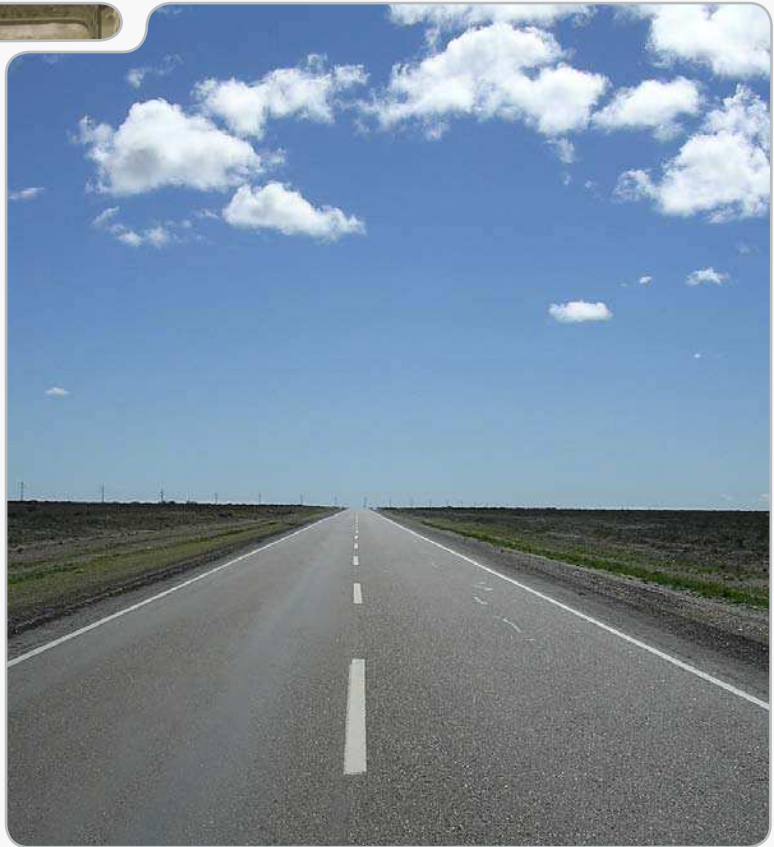
- Transport service providers rallied against a possible railroad (to defend their livelihood) and even organised protests after the railroad started.
- Farmers in the Eastern Free State rallied against the destruction of their "traditional" environment and way of life.
- The Attorney General of the time, the illustrious William Porter, initially opposed the plan to build the railroad.
- The Surveyor General of the first railroad company refused to have his name associated with the venture to build the railroad.

This was at a time when it cost roughly R15 000 and took 65 days to move one ton of goods between the Cape and the Witwatersrand.

Naturally the railroad had to come, but it was built under so much duress that the efficiency of a broad gauge was abandoned for the extreme short-term gain of a 3'6" gauge's cheaper construction costs. This gain is small in initial investment (and only of slight significance for the crossing of mountains which constituted a relatively short part of the journey), but quickly results in no gain at all over an amortization period of 30 to 50 years, and in a massive burden over the 150 years of its installation.

9 Fedderke, J. argues in Sources and constraints of long-term growth, 1970-2000, published in African Region Working Paper Series of the World Bank (No. 94), Dec 2005 that constraints on employment creation puts a break on economic growth (p 22) and Alfsen, K.H. and Thorvald, M. confirms the United Nations sustainability framework that states, inter alia, that uneven distribution of resources between rich and poor threatens global sustainability in "An international framework for constructing national indicators for policies to enhance sustainable development" which is a background paper prepared for the UN Expert Groups Meeting on Indicators of Sustainable Development in New York, 13-15 December, 2005, p5-6.

10 European road infrastructure developed from Roman roads over 2000 years ago, which also had an impact on the rail gauge. However, the current network is only about 200 years old.



## The early nineteenth century

By the 1920s most countries in the world had established rail infrastructure networks that resemble the networks of today. They were usually broad-gauged, relatively efficient, and had road feeder networks that developed around the railroads. This made economic sense as dispersed freight could be collected by road vehicles with a carrying capacity of 10 ton, over distances of up to 150 kilometres (which were expensive to operate in terms of operating costs and manpower). Freight was collated at stations and then long-hauled by 50-ton rail wagons. Distances shorter than 150 kilometre would obviously not require rail transport. Today, in most First World economies, these capacities and distances have more or less doubled. This means that freight over distances of 300 to 400 kilometres could mostly be considered road-only traffic. Rail wagons can carry up to 100 tons and the carrying capacity of road vehicles is limited to around 20 tons. South Africa can not accommodate rail carrying capacity much beyond 50-ton wagons (due to the gauge), while road vehicle carrying capacity is over 40 tons.

The groundwork was therefore laid for one of the most spatially challenged economies in the world (due to the location of South Africa's mineral deposits) to develop an inefficient network platform that has tended to exacerbate rather than ameliorate the inherent spatial inefficiencies.

During the war years the network deteriorated, as was to be expected, and was in major need of refurbishment by the late 1940s. The opportunity presented itself to fix many of the problems in network platform design and some plans were developed, but could a major upgrade of the system be contemplated?

## 1948 - A change in government

Political agendas shifted greatly in 1948 as a new government considered the constituents who had placed it in power. The concept of “development” had an unambiguous gestalt in the (largely urban) first and (largely rural) second economy of the time. The first priority was to solve the “poor white problem” by developing the first economy and creating secure employment for the white constituents who were mainly landless, poor, and poorly schooled Afrikaners. The second, interrelated priority was to promote the further development of a strong rural commercial agricultural sector where farmers could reach national markets easily.

These challenges were solved in the first economy by the further strengthening of the already robust mining sector, government-funded downstream industries such as Iscor (now Mittal) and Sasol and nearly unlimited employment opportunities in government services such as the railways and post office. Commuter systems were required to transport workers in urban areas; and cheap and effective rail systems were required to transport mining commodities to harbours for export, or to the downstream beneficiation centres. The fact that this approach formalised the spatial nodes in the centre of the country (where Sasol, Iscor and many other industries were situated), therefore increasing the spatial challenge, was not taken into account. The fact that long-haul corridors between Cape Town, Durban and Johannesburg would require special solutions (not comparable in challenge to any other country in the world) was also not considered. It was assumed that the rail system would continue to connect the three main manufacturing metropolitan nodes, but no systemic investment for these connections were contemplated, i.e. the design today is almost exactly the same as it was 75 years ago. In contrast, mining transport systems were greatly improved and still receive significant attention.

The second economy of the time required market access for rural areas and therefore cheap transport systems in those areas. Investment in dense rail main corridors with a robust feeder system of road networks and effective trans-shipment facilities would have provided in this need. The problem was, however, that the government’s control over localised road freight was less than over a railroad, and the rail network was therefore enhanced to literally try and reach every “nook and cranny” of commercial farming activities. This clearly lopsided investment strategy had a definite impact on transport regulation as the railroad’s core business in the manufacturing (“first”) economy continued to take strain while road transport operators lobbied for greater freedom to provide the speed and efficiency that the rail system could not match. Road transport systems will under certain conditions always be advantageous, but bulk long-haul corridors often require combined or intermodal systems with equal road and rail investment to reach the highest level of efficiency. This switch was never made.

It is notoriously difficult to obtain rail market share figures dating far back in history and the few attempts that were made all provided different results. As a broad proxy of market share over a long period of time, the railroad’s physical tonnage conveyed can be correlated with the tonnages produced in the agricultural, mining and manufacturing sectors of the economy. This is depicted in Figure 2 .

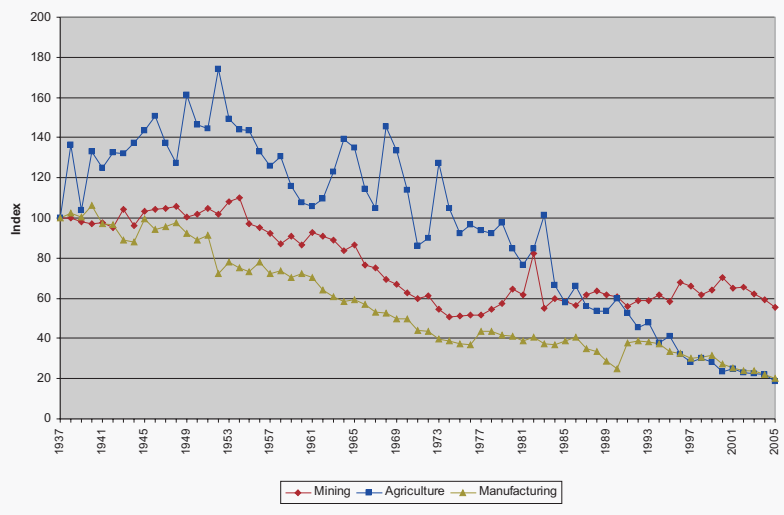


Figure 2: Indexed correlation of the relationship between rail transport and physical production in the economy

The chart clearly illustrates that the correlation grew for agricultural production up to 1952, when it peaked at 60% more than in 1937 and only matched the 1937 levels again in the mid- seventies. Manufacturing more or less always deteriorated except for a small growth period just before deregulation. Mining’s correlation deteriorated during the 60’s and 70’s (this could be attributed to the rise in coal “mine-mouth” electricity generation and Sasol synthetic fuel operations), but then stabilised around those levels. Where the index difference between manufacturing and agriculture peaked at 80% (double) in 1952, the indices crossed during deregulation and are both today at about 20% of what they were in 1937.

Government not only invested more in rail agricultural solutions (rather than rural feeder systems on road and rail long-haul solutions between manufacturing nodes), but used the manufacturing sector’s rail income to subsidise the transport of agricultural products. In this fashion the goose that was laying the golden egg was overstretched, and set up for eventual failure.

## Liberalisation and where South Africa is today

Three major change drivers occurred in the last 17 years, which is also the time period for which much more detailed information is available:

- South Africa voted in a new legitimised government that, through the Reconstruction and Development Program (RDP), insisted on access for all citizens to transport and cheaper (more rail-oriented) transport solutions.
- Transport was deregulated.
- The legal succession of Transnet required the business to balance its own books in a deregulated market, rather than being an instrument of government which balanced the books through price fixing.

If these events are correlated with the demand for freight transport in South Africa in terms of the freight network, they should have led to a set of clearly defined strategies, i.e.:

- Organise traffic around the dense long-haul corridors (the first network and primarily the first economy demand) on rail, with intermodal facilities at the origin and destination nodes. This will relieve corridor congestion, provide more efficient transport solutions and release funds for the secondary network.
- Use these released funds to provide world-class access roads in rural areas that connect rural areas internally and with the main corridors. The areas to focus on should be previously disadvantaged communities, nodes where subsistence farming will develop into commercial farming and where development should be facilitated: primarily the second economy.
- Allow provincial government to deal with urban congestion, but provide back-up research and policy/regulatory support.
- Manage mining commodity transport systems as ring-fenced commercial transport solutions that are self-funded, world-class and don’t cross-subsidise the rest of the network.

The transport demand and corresponding strategies are summarised in Figure 3 below.

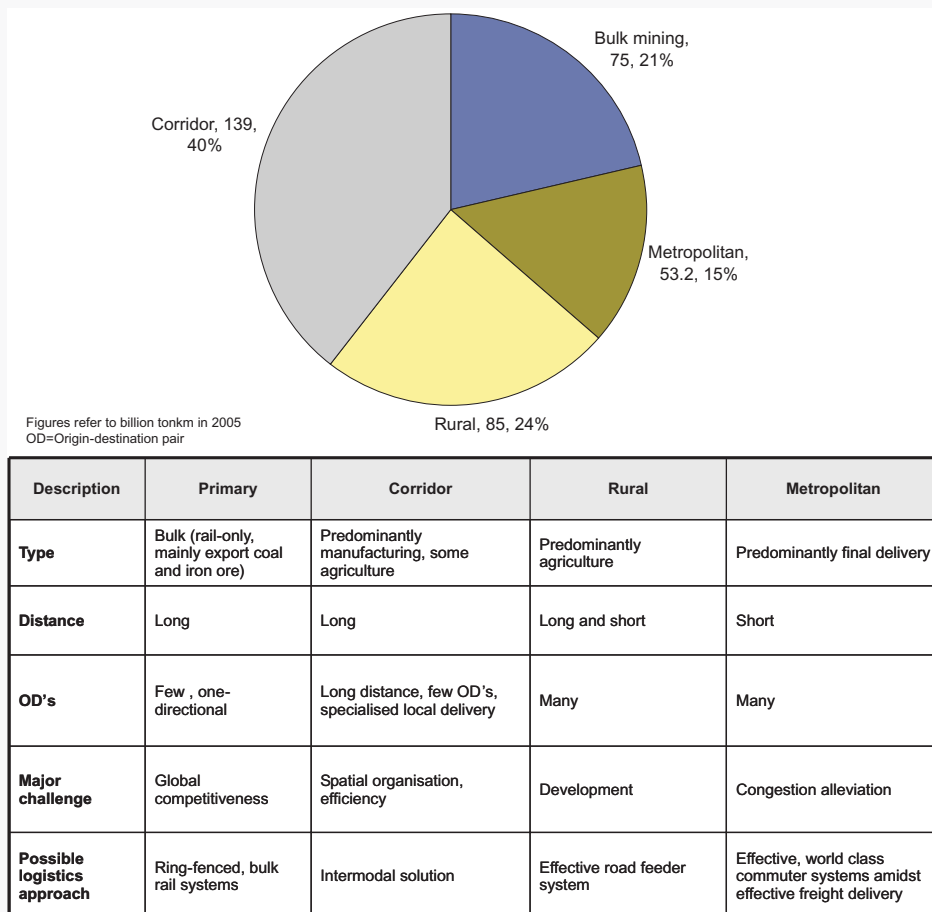


Figure 3: Freight transport demand in South Africa in ton-kilometres

These strategies would have provided the best possible solution for rural areas as the other three demand-side areas would be:

- Self-funding or regionally funded.
- Driven by free market economics, i.e. require minimum intervention.

These policies would have been in line (as far as freight transport is concerned) with government's democratised constituents' requirements and focus could be provided where needed.

The strategies outlined here are a direct derivative from the demand-side, and are also essentially the conclusion of the Moving South Africa project.<sup>11</sup> But did the country achieve these objectives? Current investment in logistics is in essence committing more and more funds into an inefficiently designed primary network between manufacturing, mining and export nodes, because of the poor exploitation of density to achieve mass efficiencies. The remaining rail transport is still cross-subsidised by mining commodities. Urban congestion is only being addressed in a long-term fashion in one area of the country, and our rural network is deteriorating. This means that a set of events is still in place that does not support the second economy, does not provide access to previously disadvantaged communities and will not support the drive from subsistence farming to commercial farming. (The redistribution and land settlement around some of our 50 000 commercial farms is admirable and an important mechanism to redress past mistakes, but pale in significance to the challenge provided by three million subsistence farmers of which at least 30% should be uplifted to commercial farming over the next few years the first is receiving attention, but what about the second?)

## Spatial perspective

The spatial-economic characteristics of South Africa's economy in particular, the extent of inland economic concentration (in and around Gauteng), and the spatial configuration of the main economic activity and logistics corridors (such as between Gauteng and Durban) have a number of important but inadequately researched policy implications, both in terms of strategies to improve the country's overall logistics cost competitiveness, and in terms of the design of possible developmental logistics initiatives. Assuming for the present that developmental logistics initiatives would be particularly focused on the "logistics cost divide": a) in terms of a size or volume dimension, i.e. between large and small or micro enterprises; and b) in terms of a spatial dimension, i.e. between central and peripheral regions; it is important to actually measure (and map) the relevant logistics cost differentials.

Using a combination of freight transport cost models and geospatial analysis systems (developed by the CSIR, the University of Stellenbosch and the Geographical Systems Research Bureau) it has been possible to produce generalised estimates of the transport component of (road-based) logistics cost for the whole of South Africa.<sup>12</sup> Figure 4 (p.10) shows a series of maps, based on systematically varied assumptions about the relevant mix of destinations and the mix of shipment and truck sizes:

- Map 1 shows the results of calculating the road freight transport costs to (and from) the closest *regional market town*, defined as all large or medium-sized towns or metropolitan nodes with more than R 100 million of household income within a 45-minute travel time range.
- Map 2 gives the results of similar calculations undertaken to estimate costs to the closest *medium-to-high capacity port* by implication the closest *transshipment hub* for the import or export of heavy, bulky and/or low-value goods that cannot be economically transported by air.
- Map 3 shows the costs to the closest *major international logistics hub* for low-weight/ high-value goods defined as including all the *medium-to-high capacity port cities* (all with air freight facilities), as well as the Johannesburg City Deep-OR Tambo Airport complex.
- Map 4 shows the combined costs the result of calculating the average cost of a road freight trip to the three types of destinations, giving equal weight to each.

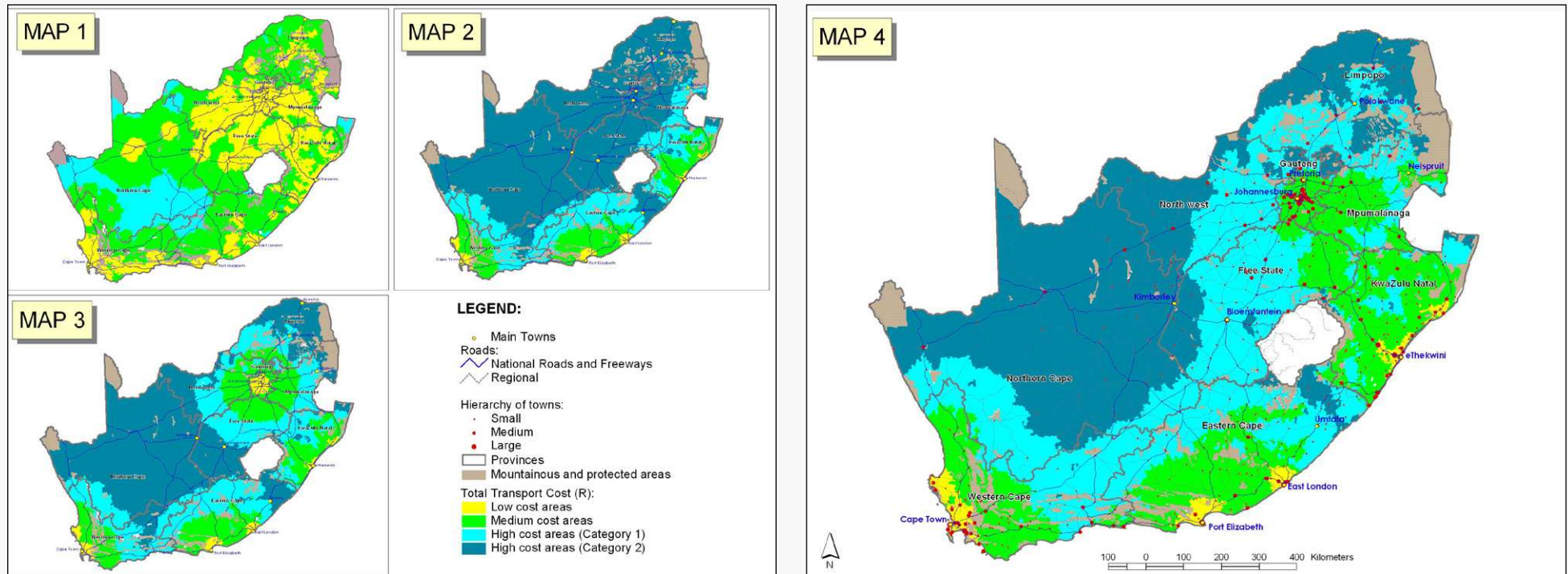
In all cases, the cost differentials refer to the distance and time-related cost of transporting one ton of goods (empty return trip) using a varying mix of truck types: a one-ton truck (bakkie) and a 5.7-ton truck. This mix was systematically varied to allow for the relatively greater prevalence of small enterprises, small shipments, and therefore greater use of small freight vehicles in former rural homeland areas. As a result, the maps indicate that some of these former homeland areas have fairly high transport logistics costs due to a "double divide", namely relatively high degrees of high spatial isolation coupled with the shipment size or volume-related divide (see Table 1 and further discussion of this in the next section).

11 Department of Transport. Moving South Africa, 1998. A Transport Strategy for 2020, Report and Strategy Recommendations, Pretoria, p115-118 and p178-181.

12 Maritz, J., Naudé, A.H., Zietsman, H.L. and Jacobs, N., 2007. A generalised freight logistics cost map for South Africa. CSIR Technical Report CSIR/BE/RIS/IR/2007/0105/B. CSIR Built Environment, Pretoria.



Figure 4: Results of calculating and mapping the costs of transporting a ton of goods to the nearest market town, port and international logistics hub



## Balancing efficiency and developmental requirements

The spatial perspective of South Africa's main economic concentrations, the distribution of high value primary sector activities (agro-forestry, fishing and mining) and the rural second economy are outlined in Figure 5. It also provides a stylised outline of the ideal configuration of the logistics systems that are required to meet the relevant competitiveness and developmental needs of these areas of economic activity and, in so doing, contribute to accelerated and inclusive economic growth.

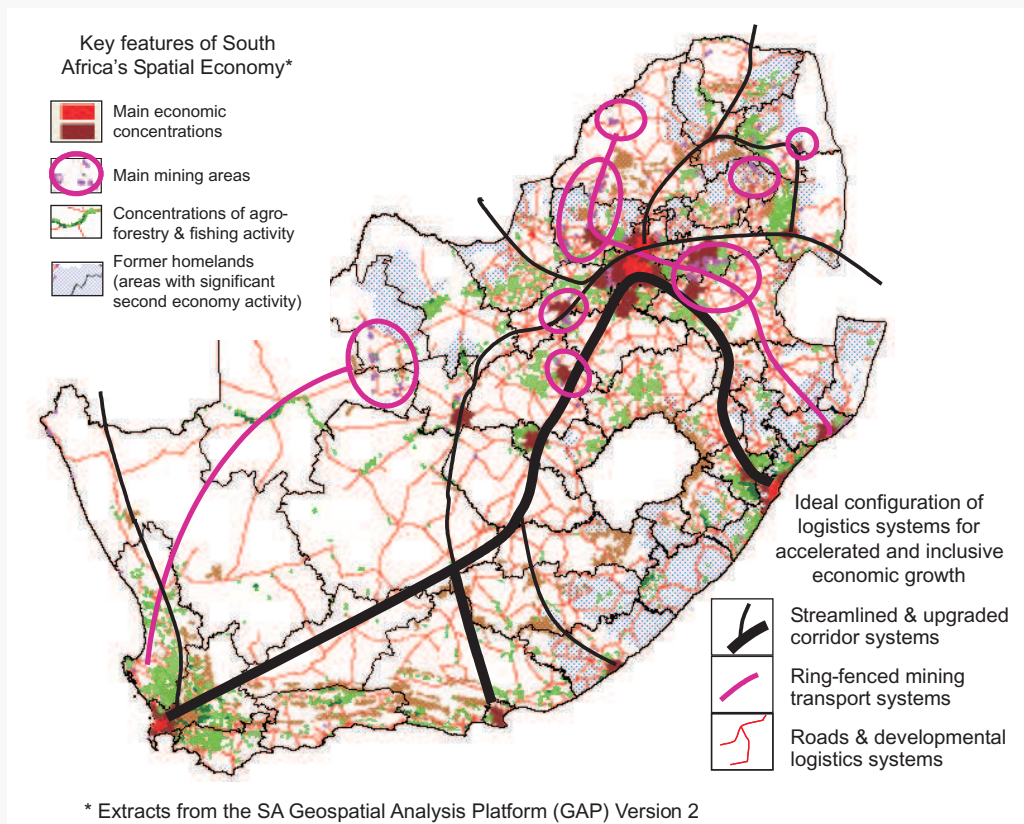


Figure 5: Spatial perspective of the South African economy and an ideal configuration of logistics systems<sup>13</sup>

The preceding discussion has already highlighted the need for streamlined and upgraded freight logistics systems along the main corridors which on the map (Figure 5) are shown to connect South Africa's main economic concentrations and ports of entry. Similarly, the map also indicates the main existing and likely future mining areas, and how these could be serviced by a network of ring-fenced mining transport systems. The remaining areas (which include commercial farming and former rural homeland areas) are shown to be primarily served by roads and (possible) developmental logistics systems. This is however not meant to indicate that developmental logistics interventions should necessarily be undertaken in all of the so-called remaining areas. In many parts of the country – especially the parts with relatively sparse populations and high logistics costs (see Figure 4) – such interventions are likely to have very limited cost effectiveness, and could actually worsen South Africa's overall logistics efficiency and competitiveness.

The relevant general guideline for prioritising developmental logistics interventions should in the first instance be the recently released update of the National Spatial Development Perspective (NSDP).<sup>14</sup> Subject to the principles set out in the NSDP, one could argue that a special priority might need to be placed on the relatively populous former rural homeland areas. At the risk of over-generalisation, these can be generally classed as areas with significant second economy activities.

## The role of developmental logistics

In the current economic landscape, the term "second economy" is loosely used to refer to that part of the economy that is operating informally, and that should be the target of economic development and incorporation into the economic mainstream. This broadly implies the development of productive capacity, and the provision of access to markets. "Second economy" activities are located in both rural and urban areas.

Upgraded access roads and associated developmental logistics interventions could have a highly cost-effective impact on the

13 CSIR Built Environment, 2007. SA Geospatial Analysis Platform, Version 2 Economic Estimates, Pretoria.

14 Republic of South Africa, 2006 (first print, March 2007). National Spatial Development Perspective, Policy Coordination and Advice Services, The Presidency, Pretoria.

mainstreaming of rural second economy areas. These typical “deep rural” or former homeland areas are mostly characterised by a fragile, narrow and vulnerable economic base, caused inter alia by the collapse of labour migrancy as a source of income and capital, diminishing village resource bases and associated livelihood opportunities, and erratic public works employment.

Seen specifically from an economic linkage and logistical perspective, it is important to highlight the sheer physical remoteness and low economic activity densities of the typical deep rural area, its poorly developed road networks, and its under-developed market facilities, storage and other logistical infrastructure and services. For many emerging farmers and rural small, medium and micro enterprises (SMMEs), the implications are that most logistical, marketing and related services (e.g. procuring critical inputs such as seed and spare parts, or transporting produce to markets) are unreliable, ineffective and/or very expensive, thereby marginalising and excluding most from “mainstream” supply chains.

The spatial bias of the logistics infrastructure remains the key constraint in the development of the rural second economy. Upgrading and maintenance of access roads and other rural transport infrastructure are of obvious critical importance, and long market access distances remain a formidable obstacle in the way of increased resource-based economic activity in remote rural areas. These aspects require long-term intervention. In the interim, strategies need to be developed to optimise operations on the limited infrastructure that is available. Such strategies include the harnessing of information and telecommunication technologies (ICT) and better logistical coordination and scheduling.

In particular, considerable savings can be made simply through load consolidation and the use of more economical truck sizes. The cost of transporting grain serves as an example:

Truck Type	Payload (tons)	Cost per ton (Rand)	Cost per bag (Rand)
4x2 Rigid LDV	1.00	218.76	19.69
4x2 Rigid Dropsides	2.30	174.56	15.71
4x4 Rigid Dropsides	8.20	100.43	9.04
6x4 Truck & Semi trailer	27.60	53.19	0.79

Table 1: Illustrative scale of transport cost reductions from using increasingly larger trucks<sup>15</sup>

In developing strategies to optimise operations, two distinct types of contexts need to be considered:

Context	Context description	Strategic approach
Type A	Well developed local farmer or producer organisations/clusters and existing market linkages where low transport volumes and/or high costs are the only major impediments	Logistics streamlining approach: strong transport focus, aimed at improving the infrastructure, coordination and cost-efficiency of freight logistics operations
Type B	In addition to problems of low transport volumes and/or high costs, producer clusters/ organisations and/or market linkages are poorly developed	Economic mainstreaming approach: deploying logistics brokering and infrastructure development as part of a coherent package of business development services

Table 2: Feasible logistics approaches

15 Results of using the Economic Linkage and Logistical Analysis (ELLA) transport cost model to calculate the transport costs of moving grain in 90 kg bags to a collection point, 100km away, considering loading and off-loading times as well as the feasible number of multiple trips per day. (Naudé A.H. and Green C. 2002. Guides for Enhancing Rural LED: Economic Linkage and Logistical Analysis. Report prepared for the Department of Provincial and Local Government by CSIR and the Centre for Integrated Rural Development (CIRD).)

## Conclusion

What are the drivers of the current logistics situation and how can it be turned around? The regulatory framework that led to this situation, as well as the slow progress over the past decade, should be questioned. Stakeholders owe it to the young, liberalised democracy to move faster to achieve the real goals of development and channel our efforts where they are needed. The supply chain fraternity should strive for inclusivity, also for the “forgotten” second economy (as far as freight transport solutions are concerned) and address our spatial challenge with even more vigour.

A large portion of logistics costs in the second economy are “administered”, and results from a poorly designed road network that is not well maintained. While these can be reduced through operational aspects such as consolidation and information sharing, macro-changes can only be made by the regulator.

The logistics community can make a difference and can contribute to the development of the second economy, which is dependent on both long term infrastructure development and a short-term focus on operational improvements. The logistics community is challenged to focus some effort in this area, and to come up with practical solutions over the next few years.

## MODELLING APPROACH

### Modelling approach - Logistics cost model

Botes, F.J., Jacobs, C.G. and Pienaar, W.J.

“Logistics” is considered to be that part of the supply chain process that deals with the transportation, warehousing, inventory carrying and administration and management of physical products between the point of production and the point of delivery to the final consumer. Per definition this excludes the cost of passenger transport and the cost of transport, storage, packaging, handling etc. of mail and luggage, as well as the storage and transport tasks which occur during the production process.

### Study methodology and approach

The Logistics Cost Model employs a “bottom-up” approach to the computation of logistics cost by aggregating detailed commodity-specific data, including throughput, transport and storage characteristics, as well as transport and warehousing unit costs. The aggregation of logistics costs is based on primary input elements (the amount of a specific commodity that is produced) and the cost of performing specific tasks (transport, storage and handling) with respect to that commodity in the logistics chain. Validity of output data can thus be verified at the primary source before any aggregation takes place. This differs from existing methods that extrapolate logistics cost data that were collected by means of non-specific sample surveys.

### Specific data adjustments from previous survey

- **Gross Domestic Product**

The gross domestic product (GDP) was updated from the official figures published by the South African Reserve Bank (SARB)<sup>16</sup>. As is customary, the SARB backdates the updated figures, which are presented in Table 3 below.

Year	Previous SARB figure	Latest SARB figure	% difference
2003	R 1 251 468	R 1 260 693	0.7%
2004	R 1 374 476	R 1 398 157	1.7%
2005		R 1 539 253	

Table 3: GDP at current prices (million)

The 2003 and 2004 models were updated with the latest available figures.

- **Agriculture and Mining**

Volumes for 2003 and 2004 were updated where slight changes occurred (some of the historic agriculture and mining figures were updated by the Department of Agriculture<sup>17</sup> and the Department of Minerals and Energy<sup>18</sup> respectively). However, these refinements left the overall throughput for 2003 and 2004 virtually unchanged.

- **Manufacturing**

Attention is drawn to the fact that the calculation of manufacturing throughput remains problematic, because the official statistics are presented in terms of monetary value (or in some instances in units such as the number of garments) rather than in tonnage. A complex series of calculations is therefore required to estimate the throughput in ton-equivalent of manufactured products. In addition, a “volumetric adjustment” is made for particular items to take into account that the transport cost of these components is based on the volume rather than on the tonnage being transported. It is hoped that future sponsorships will enable a more comprehensive analysis of this sector.

This year’s study focused on improving logistics costs attributable to household and industrial waste, as well as reverse logistics. Disparate information on logistics in the informal sector was also collated to improve the estimated contribution to logistics cost. This was deemed necessary because it is suspected that the transportation cost in this sector is substantial due to both the volumes involved and the fact that transportation in this sector is very inefficient (small loads and inappropriate vehicles).

- **Costs**

Transport cost updates consist mainly of inflationary adjustments for the various modes based on the latest available information.

16 South African Reserve Bank. 2006 *Quarterly Bulletin*.

17 Department of Agriculture, 2006. *Abstract of Agricultural Statistics*. Pretoria.

18 Department of Minerals and Energy, Directorate: Mineral Economics, 2006. *South Africa’s Minerals Industry*. Pretoria.



Storage cost, which includes the storage and on-site handling of freight, was updated with the latest available information. This includes the quay-side storage and handling of freight in ports, including imports, exports and coastal shipping.

The opportunity cost of capital locked up in freight during storage and transport (inventory cost) was updated with the prevalent interest rate during 2005, which was taken as 10.5%. This is a reduction from the rate of 11.5% used for 2004 and 15.5% used for 2003.

## Impact of data refinements on the historical logistics cost

The effect of the above changes on logistics cost are summarised in Table 4.

	2004 data update – 2006 survey	2004 data – 2005 survey	% change
Total Logistics cost (Rand million)	204 388	209 073	-2.2%
Logistics cost - % of GDP	14.6%	15.2%	

Table 4: Impact of refinements on model results (2004 data)

The combined model update and GDP adjustment on logistics cost as a percentage of GDP amounted to a downwards adjustment of 0.6 of a percentage point of the 2004 logistics cost published in the 2005 survey. If the effect of the change in the GDP is removed, the percentage of logistics cost to GDP would be 14.9%. The model-specific effect on the logistics cost to GDP ratio is therefore less than 0.3 of a percentage point downwards, confirming the robustness of the model to measure macro economic logistics cost.

## Modelling approach - Land freight transport model

*Havenga, J.H. and Hobbs, I.E.*

The land freight transport model utilises the South African National Roads Agency's Comprehensive Traffic Observation (CTO) Yearbooks as a basis for the development of a current and historical view of freight traffic flows in South Africa. The model accounts for the differences between corridor, rural and metropolitan freight and the various carrying capacities of the types of trucks that are used. This is then collated and compared to actual rail data to develop views on market shares, corridor densities and overall investment strategies for South Africa.

# MACRO-ECONOMIC PERSPECTIVE

## Logistics cost

Botes, F.J., Jacobs, C.G. and Pienaar, W.J.

Logistics cost in South Africa amounted to R223bn in 2005. Table 5 illustrates no significant difference in the logistics cost over the period 2003 to 2005. It is not advisable to observe trends with such small changes over a short period of time. It is however interesting to note that logistics cost as a percentage of GDP appears to be decreasing. It is unlikely that these changes occurred as a result of improvements in the structural efficiency of the logistics system. It is far more likely that logistics operators are able to better utilise available spare capacity in an environment where the GDP has increased substantially. Logistics cost will have to be tracked over a much longer period in order to make any definite conclusions in this regard. Improvements in the structural efficiency of the logistics system will also only be visible over a much longer timeframe.

	2005	% change 2004 to 2005	2004 <sup>19</sup>	% change 2003 to 2004	2003
GDP (current prices) (Rand million)	1,539,253	10.1%	1,398,157	10.9%	1,260,693
Total Logistics Cost (Rand million)	222,870	9.0%	204,388	9.4%	186,946
Logistics cost - % of GDP	14.5%		14.6%		14.8%

Table 5: Comparison of logistics cost in 2003, 2004 and 2005

The stack elements of logistics cost are depicted in Figure 6. Logistics cost increased by 9% from 2004 to 2005, slightly less than the 9.4% increase recorded between 2003 and 2004. The contribution of the stack elements to logistics cost remained relatively unchanged. The increase in the transport sector’s contribution (which was predicted in earlier surveys) is however clearly evident. The transport sector is more susceptible to “administered” prices (cost elements outside the control of logisticians), and the poor configuration and management of our freight network will continue to drive this trend.

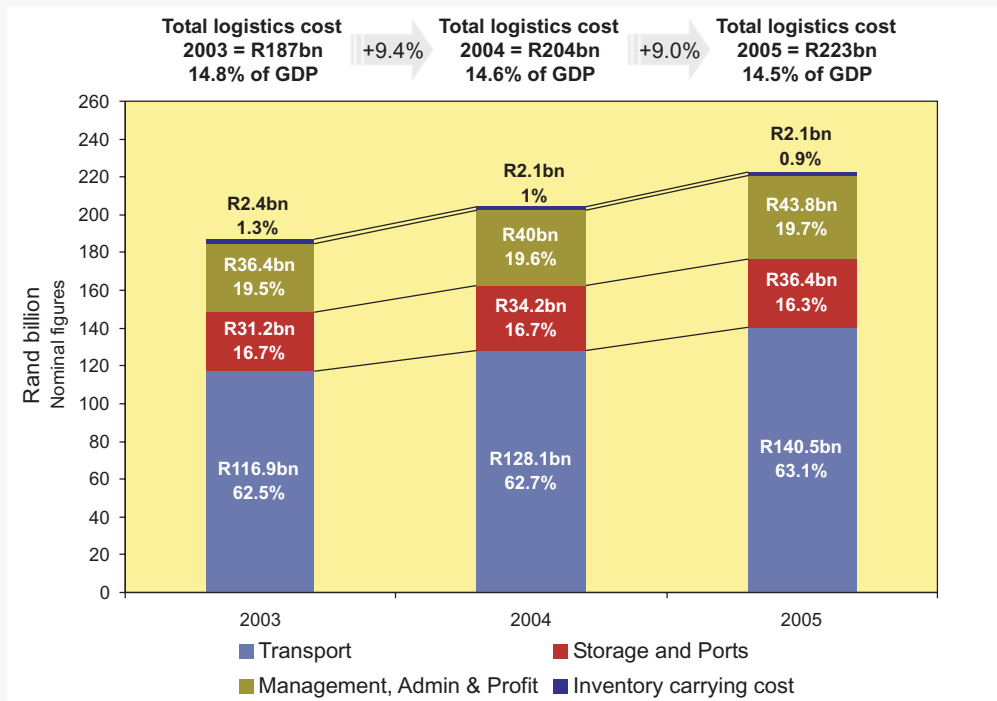


Figure 6: South Africa’s logistics cost stack elements

19 See Table 4 in the previous section for a description of the change in 2004 logistics cost compared to the previous survey

The stack elements of logistics cost for the primary and secondary sectors<sup>20</sup> are depicted in Figure 7 below. In 2005, the primary sector contributed 9% to South Africa’s nominal GDP, and accounted for 19% of the logistics cost. The secondary sector contributed 17% to nominal GDP in 2005, and accounted for the remainder of the logistics cost.

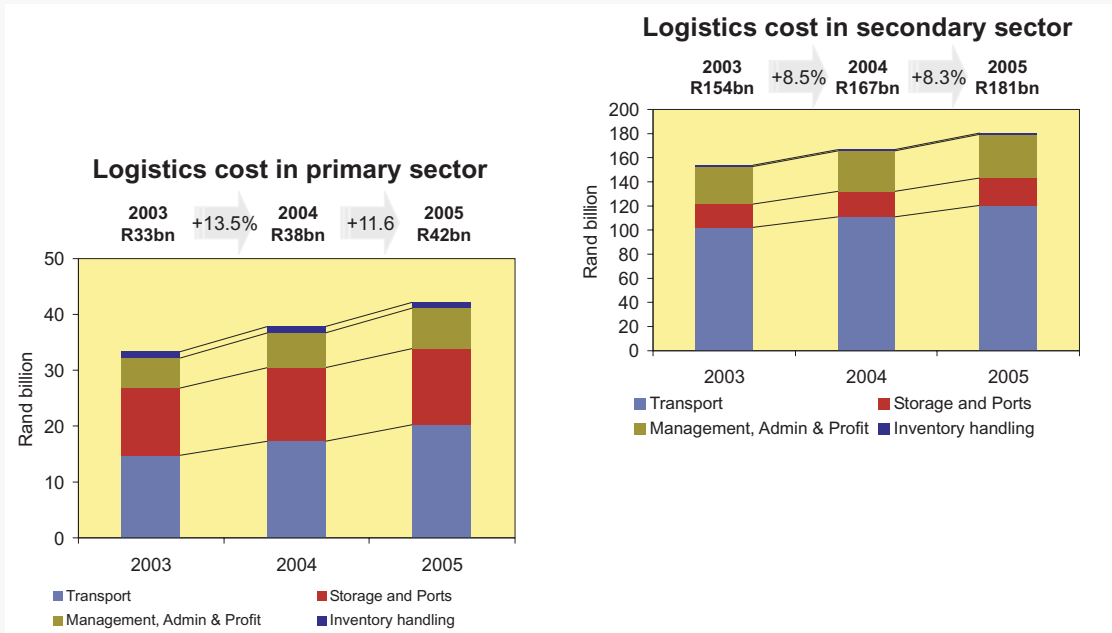


Figure 7: South Africa’s logistics stack elements primary & secondary sectors

Transport remains the biggest contributor to the cost of logistics (and the biggest challenge in South Africa) and as such is analysed in more detail in the following section.

20 The primary sector refers to agriculture and mining (extraction of basic materials), while the secondary sector refers to manufacturing (processing of basic materials).

# Land freight transport

de Waal, S., Hobbs, I.E. and van Eeden, J.

Total land freight transport in the South African economy amounted to 1.4 billion tons in 2005. The split between road and rail, and changes from 2004, is depicted in Figure 8 below.

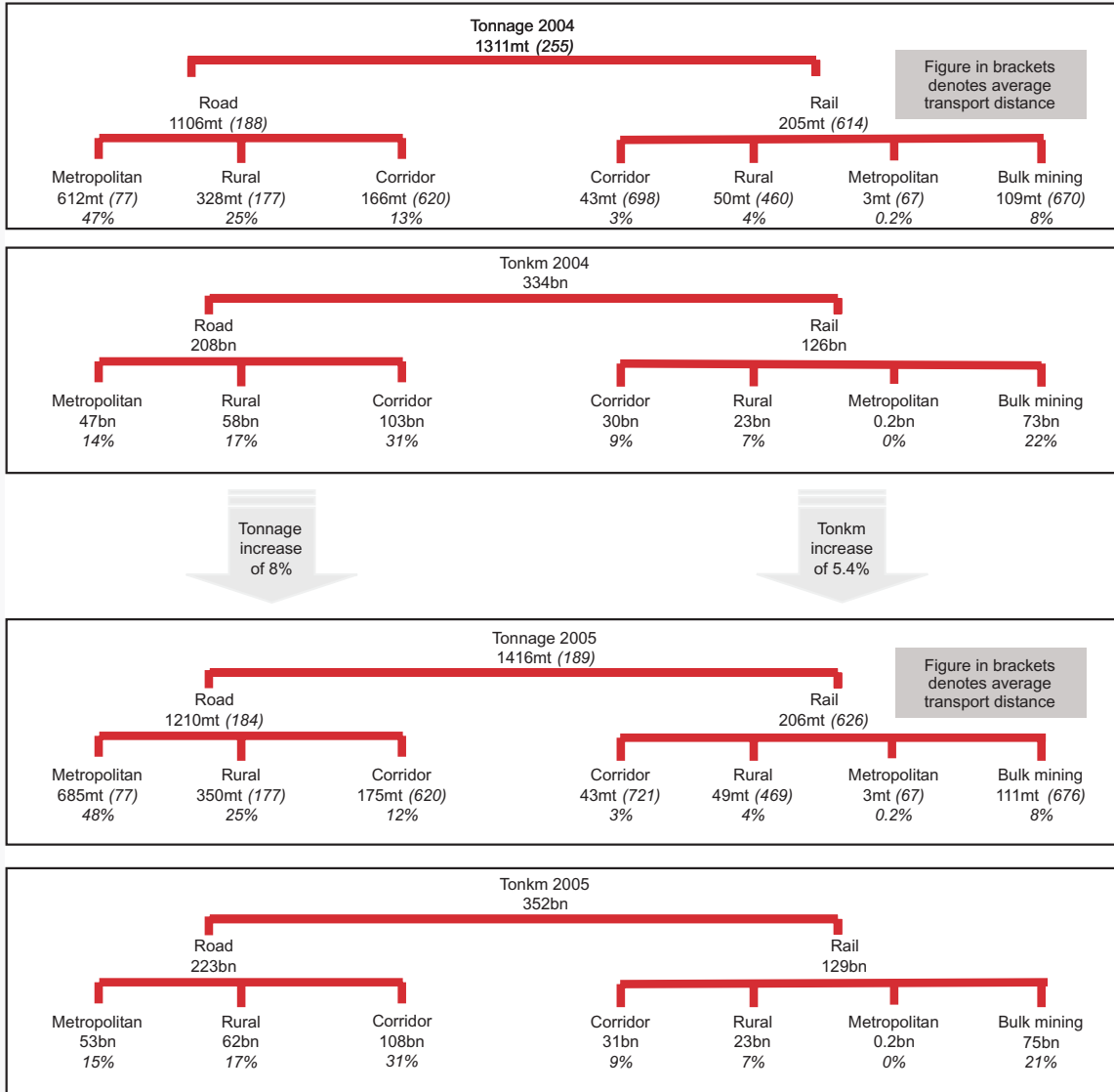


Figure 8: Land freight transport in South Africa (Percentages denote share of total ton and tonkm respectively)<sup>21</sup>

21 Changes in 2004 data compared to that published in the previous survey are attributable to:

- Bulk mining commodities transported on long haul rail corridors remote from road infrastructure, were removed from rail’s corridor figure and included in the bulk mining figure. This enables a better understanding of competitive corridor market share.
- A more robust analysis of allocations between metro, rural and corridor traffic.

As reported in the previous surveys, corridor growth is still captured by road. The messages regarding revolutionary change required in the long haul road/rail relationship and unlocking funds for rural and metropolitan solutions still ring true. Research shows that freight transported in our economy will double, yes **double**, in the next 20 years<sup>22</sup>. If the messages mentioned previously continue to ring true in future surveys, the country will grind to a halt.

What is required now is some collective **P.I.G.**<sup>23</sup> by the decision-makers in this regard this includes government, road, rail and ports. Through **persistence** understand the sustainable long-term infrastructure investment required by SA Inc., knowing that significant growth of freight for transport is imminent the market is out there. Through **integrity** acknowledge and own the various roles in this investment. And have the **guts** to make it happen.

22 Results of a freight research project conducted by Centre for Supply Chain Management (CSCM) for Transnet 2005/6, unpublished.

23 "Think P.I.G. ... P stands for Persistence, I stands for Integrity, and G stands for Guts. These are the ingredients for a successful business..." (Linda Chandler, American businesswoman, Executive and Entrepreneur, creator of the Core Value Training program)



## INDUSTRY-LEVEL PERSPECTIVE

The supply chains of the FMCG industry as well as government service delivery serve to highlight some of the challenges in local supply chains. In both of these environments, goods and services need to be delivered over the entire national geography, and ineffective supply chains directly impact consumer satisfaction.

### Fast-Moving Consumer Goods

Schoeman, C.

Fast-moving consumer goods (FMCG) or consumer packaged goods (CPG) are products that have a quick shelf turnover at a relatively low cost and do not require an extensive decision-making process or financial investment for purchase. FMCG consists of frequently purchased products such as food, beverages, tobacco, household products, confectionary, toiletry, general merchandise, services (butchery, bakery and fresh), perishables, health and beauty products etc.

### Industry Overview

In 2005 South Africa's FMCG retail industry had an annual turnover of R146 billion, growing at a rate of 5.5% annually, with an operating profit of R8.1 billion.<sup>24</sup>

#### Market growth and consumer profile

The potential local consumer base is growing ever bigger. In the first 10 years of South Africa's democracy the population grew by 16%. This figure has been outpaced by the resulting increase of 26% in the number of households, which led to increased spending on household consumables.

South Africa has a diverse population spread over a large geographic region, but the large retail centres are concentrated over only five metropolitan regions and consumer spending power is located largely in the Western Cape and Gauteng. A total of 50% of South African retail sales occur in these two provinces.<sup>25</sup> A recent survey by Statistics SA has shown that the richest 20% of the country's households accounted for nearly two-thirds of total consumer spending, while in 2004, only 55% of black households owned a refrigerator. However, the South African government's income redistribution strategies have led to an increased number of households now falling in middle and middle-lower income groups. South Africa has an extremely dynamic consumer profile,<sup>26</sup> characterised by consumers who are exceptionally price sensitive prioritising value for money as a driver of choice.<sup>27</sup> Therefore, local retail groups make use of limited-time, lower-price promotions with regular intervals, to encourage consumers to purchase larger volumes of products at lower prices.<sup>28</sup>

#### Suppliers and retailers

Even higher than the phenomenal household growth, has been the increase in retail store numbers over the same 10 years. The organised grocery trade sector (found mostly in urban areas) increased by a dramatic 46%. Even now it constitutes a mere 5% of stores, although it accounts for 70% of the country's grocery turnover. In comparison, smaller counter- and self service or traditional stores account for considerably less, but there are huge numbers of these outlets.<sup>29</sup> These independents, rural stores and the informal retail sector are acknowledged as an important delivery channel of goods to customers, with the latter having an estimated turnover of R34-billion. However, this dynamic might change in the future, as corporates are currently tackling the rural and township markets and as more formal shopping centres are being developed in disadvantaged areas in an attempt to adapt to the nation's changing consumer face.<sup>30</sup>

The seven major store groups in this industry are Clicks, Pick 'n Pay, Shoprite Checkers, Spar, Woolworths, Massmart and Metcash<sup>31</sup> and the first five account for 54% of SA's retail sales. The South African trend of establishing shopping malls with a wide range of stores handling specialities, anchored by major supermarket chains, has meant that the majority of shoppers buy their staple grocery requirements from the major chains. In Gauteng alone, the major chain stores move in excess of 1.2 million tons per annum of FMCG products, perishables and food stuffs as well as other products sold at these stores.<sup>32</sup> Pick 'n Pay and Shoprite groups respectively turn over around \$4 billion annually, but globally rank at position 70.<sup>33</sup> (The consolidation in the retail sector is a global phenomenon).

24 AC Nielsen. Retail Index 2005.

25 Consumer Goods in South Africa. Nov. 2005. [www.internationalbusinessstrategies.com](http://www.internationalbusinessstrategies.com)

26 *ibid*

27 AC Nielsen. SA Economic climate boosts FMCG spend. [www.bizcommunity.com](http://www.bizcommunity.com)

28 Consumer Goods in South Africa. Nov. 2005. [www.internationalbusinessstrategies.com](http://www.internationalbusinessstrategies.com)

29 AC Nielsen. [www.fmcg.co.za](http://www.fmcg.co.za) Spend Trends: Exploring retail, consumer and category changes.

30 AC Nielsen, 2004. Retelling retail trends, spends, and dead ends - a South African tale

31 [www.bizcommunity.com/Article.aspx?c=82&l=196&ai=9049](http://www.bizcommunity.com/Article.aspx?c=82&l=196&ai=9049)

32 [http://gauteng.zularock.co.za/gp/industries/wholesalers\\_and\\_retailers/index.xml](http://gauteng.zularock.co.za/gp/industries/wholesalers_and_retailers/index.xml)

33 AC Nielsen, 2005. SA spends big on booze (as reported by Fin24). [www.fin24.co.za/articles/default/display\\_article.asp?Nav=ns&ArticleID=1518-25\\_1833991](http://www.fin24.co.za/articles/default/display_article.asp?Nav=ns&ArticleID=1518-25_1833991)

SA consumer goods manufacturers have consistently delivered far better shareholder returns than their global peers, as well as most other companies listed on the JSE. However, part of the reason for their excellent returns is buoyant market and economic conditions.<sup>34</sup> The major FMCG manufacturers include Tiger Brands, National Brands, Pioneer Foods, Unilever SA, ABI, SC Johnson and SAB. Profit margins on FMCG products are usually low, but they are generally sold in large numbers making a significant contribution to overall retail profit.

## Supply Chain Overview

### **Supply chain distribution structure**

The South African retail trade differs from those of developed countries in its wide spread of stores – both geographically and demographically. Outlets are often difficult to reach, and limited in terms of space.<sup>35</sup> A simplified example of how an SA consumer-oriented supply chain would function is as follows: from manufacturers, products are distributed by subsidiaries or joint-venture partners to a fixed number of distributors who sell to wholesalers and/or retailers who in turn sell to end-customers (there may be more middlemen within the chain, depending on the arrangement worked out by the manufacturer).<sup>36</sup>

Distributors buy and hold stock of a product and in return, are usually granted an exclusive right to sell the product in a particular area or to a particular type of customer.<sup>37</sup> However hypermarkets, located in suburban shopping centres, have disrupted the traditional distribution chain by purchasing directly from manufacturers and bypassing the wholesaler, with low margins achieving high turnover, thereby placing price pressure on all competing outlets.<sup>38</sup>

Inbound delivery to the wholesalers' warehouses is normally done by the manufacturer, suppliers, or contracted hauliers. In addition, third party distribution and logistics companies offer complete supply chain management solutions for manufacturers to reach a widely distributed retailer network. The increase in integrated distribution management companies is largely the result of the difficulty experienced by manufacturers in coordinating deliveries to wholesalers and retailers.

Due to centralisation, most major wholesalers and chains have a wide network of retail outlets/satellite stores, which are supplied from the central warehouses. Distribution from warehouses is generally performed by third party contractors to provide hub-and-spoke distribution systems for the short haul multi-drop deliveries required by superstores carrying a wide product range.

### **Extending the supply chain into Africa**

Competition within both the FMCG and logistics sectors is intense. From the **supplychainforesight** survey<sup>39</sup> it is apparent that FMCG companies are primarily focused on competing with each other, overshadowing the need to collaborate nationally against the threat of new international entrants to the local market, or the need to export their own products. Some local retailers are however waking to the opportunity that Africa presents, (given reliable and effective supply chains) with its consumers in search of product variety and service quality. Of the estimated 7.5 million tons of perishable exports from South Africa, large proportions are consigned to African countries.<sup>40</sup> South African canned and processed foods and beverages make up the major proportion of goods sold in all the southern African countries. International companies will be lured by the size of the South African market and its position as a gateway to Africa. As such, it is imperative for local companies to establish their competitive advantage. Likewise, efficient supply chains open the door on the inbound side for global sourcing of FMCG products to the local market, so local manufacturers are also exposed to international competition.

## Supply Chain Challenges

A 1999 Grocery Industry value analysis<sup>41</sup> found the industry's inventory costs at ±R5.6 billion to be 49% too high, while operating costs amounted to ±R1.5 billion. These high costs are alarming, seeing that retail profitability in the food industry specifically reaches only 3-4%. The study inferred that potential exists to decrease total costs by R2.5 billion – equivalent to a 7.3% price reduction – in effect tripling the bottom line.

34 A recent analysis by Accenture benchmarking the total return to shareholders of seven listed South African FMCG companies against their global peers and the JSE All Share index.

35 AC Nielsen, 2005. Latest consumer trends in SA. [www.fastmoving.co.za](http://www.fastmoving.co.za)

36 Consumer Goods in South Africa. Nov. 2005. [www.internationalbusinessstrategies.com](http://www.internationalbusinessstrategies.com)

37 SA Info. Distribution and sales in SA

38 ibid

39 Barloworld Logistics. FMCG and Retail supplychainforesight survey 2006.

40 Consumer Goods in South Africa, Nov. 2005. [www.internationalbusinessstrategies.com](http://www.internationalbusinessstrategies.com)  
[http://gauteng.zularock.co.za/gp/industries/foods\\_producers\\_and\\_processors/index.xml](http://gauteng.zularock.co.za/gp/industries/foods_producers_and_processors/index.xml)

41 PWC Consulting. CGCSA SA Grocery Industry Tracking Study 1999.

South African retail KPIs lag behind best practices. Local lead times into retail outlets stand at 85.6 hours – the global figure is less than half. Out-of-stock figures of 10.2% run twice as high as global statistics. On top of this major underperformance regarding logistics service delivery, stock lead times and inventories, similar percentages apply to almost every other element of the supply chain, demonstrating its global inefficiency – despite the apparent retail boom of the past few years.<sup>42</sup>

The current state of the SA FMCG logistics system – with the industry incurring billions in unnecessary costs due to inefficiencies – has two implications:

- Companies with considerable opportunities for cost and inventory reduction and customer service improvements are prime acquisition targets for overseas multinational retailers or equity players who add value and sell them on.
- First movers who manage to address the supply chain challenge, will have great opportunity to reduce costs and improve service and consequently gain market share and margin ahead of the competition.

In order to reform the SA retail industry and avoid falling even further behind in the global environment, a large and holistic supply chain effort is required, consisting of an integrated and collaborative approach. Attempts to fix problems such as shrinkage, security, demand forecasting, lead times and other silo-based problems in isolation will yield suboptimal value.

Local retailers tend to oversimplify logistics challenges. For example: some retailers see the supply chain as starting at the back door, while logistics costs are often seen as purely variable – not taking into account that provision for e.g. replacement of ageing vehicle fleets is required. Retailers, as the channel masters in the consumer goods supply chain, are facilitating a consumer demand-orientation which supports the principles of supply chain management.<sup>43</sup> In meeting industry demands, **logistics service providers** and **manufacturers** have to cope with the following challenges while avoiding high levels of cost escalation:

- A 21% **increase in the number of stores** between 2003 and 2006 with declining volumes per store as volume growth does not match distribution activity, leading to smaller drop sizes at a 3% increased drop frequency.
- Flexibility of supply – the need for shorter stock lead times and JIT logistics stock philosophy – as opposed to longer production (more cost-efficient) runs which result in increased inventories, often spread over the distribution network and increased risk of slow-moving stock.
- Improved customer service, which calls for increased skills in selling and merchandising.
- Back door inefficiencies – between 2002 and 2006 turnaround time has deteriorated from 1h41 minutes to 3h21 minutes, exacerbated by smaller back-up areas. The ongoing congestion at unloading and delivery docks is currently being exacerbated by the proliferation of large retail outlets, most of which have inadequate intake facilities for the stocks they carry. ECR SA (IBM). South African Grocery Industry Tracking Study 2004 .
- Ineffective road transport systems – recent proposals to restrict delivery times and to ban delivery vehicles from residential areas at certain times of day could further influence effective deliveries during the period when their customers are prepared to receive goods.<sup>44</sup>
- Store staffing and control constraints, such as limited working hours, legislative restrictions, e.g. one delivery bay per 30 tills, and restrictive delivery windows regarding weekends and public holidays.
- Ineffective reverse logistics – improved stock management, pallet control and swell allowances are required.<sup>45</sup>
- Insufficient investment in training and development of supply chain personnel results in reduced quality of staff, poor systems integration and application and declining safety standards.

Given the immediacy of FMCG needs, “disloyalty” is a key feature in this industry when choice products are not available – the product is simply substituted. The industry is therefore realising that it’s difficult to win in the market on price alone – supply chain speed, responsiveness and flexibility are critical to maintaining a competitive edge.<sup>46</sup>

42 ECR SA (IBM). South African Grocery Industry Tracking Study 2004 .

43 Pienaar, A. and Rossouw, C., 2006. Sales and Operations Planning in SA’s FMCG Industry. ISBN 0-620-36153-0.

44 [http://gauteng.zularock.co.za/gp/industries/wholesalers\\_and\\_retailers/index.xml](http://gauteng.zularock.co.za/gp/industries/wholesalers_and_retailers/index.xml)

45 Imperial Logistics. FMCG Logistics Perceptions, Challenges and the way forward, presentation at the CGCSA Conference 2006.

46 ibid

## Supply Chain Analysis

The FMCG industry has analysed supply chains and developed priority focus areas in various forums. The key inefficiencies as perceived by industry and the prevalent supply chain themes in the industry are highlighted in Table 6 below.

### Supply chain inefficiencies

The major supply chain inefficiencies together with their perceived causes were prioritised by role players in the FMCG industry in a self-analysis workshop<sup>47</sup>:

CATEGORY	INEFFICIENCY	PRI-ORITY	CAUSE
Low transport productivity	Backdoor congestion	1	Poor receiving bay infrastructure
			Poor management/administrative discipline
			Inefficient replenishment policy/merchandising
			Offloading: inefficient planning and operations
			Multiple single consignment deliveries
			Lack of vehicle scheduling and route planning
			Incorrect bar-coding by manufacturers undermine IT initiatives at backdoors causing delays
	Reverse logistics	2	Credit note trading terms: high cost of return items
	Inefficient vehicle utilisation and infrequent delivery	5	Inefficient replenishment policy/merchandising
			Lack of vehicle scheduling and route planning
Sub-optimal distribution fleet configuration			
Road congestion	7	Limited delivery timeframe (security and working hour constraints)	
		Commercial development in high-density residential areas	
		Lack of truck driver skills	
Poor service levels (retailers & distributors)	Skills & compliance shortage	3	Non-compliance to SLAs by retailers & distributors
			Non-compliance to good practice
Inefficiencies of extended supply chain to informal sector (SMMEs)	Sub-optimal route-to-market strategies	4	Commercial viability
			Economies of scale
	Compromised rural deliveries	8	Inefficiencies and non-compliance to SLAs by sub-contracted operators, resulting from compromises required to survive
Suboptimal resource usage	Inventory inertia Product aging	6	Skills shortage, i.e. lack of understanding of common supply chain principles.
			Stockpiling to mitigate variability of demand and supply.
	Duplicate Distribution Centres (DCs) / unutilised warehouse capacity	9	Competition and lack of trust.
			Stockpiling to mitigate variability of demand and supply.
Infrastructure utilisation	Poor rail/port infrastructure	10	Skills shortage, suboptimal utilisation of assets, inefficient processes

Table 6: Supply chain inefficiencies based on FMCG industry self-analysis

47 Volition and CSIR. Johannesburg Freight Logistics Project 2006 for City of Joburg’s Economic Development Unit.

**Prevalent Supply Chain themes**

The 2006 FMCG **supplychainforesight** survey<sup>48</sup> is a reflection of current supply chain focus areas. The aim to increase shelf availability and reduce out-of-stocks (OOS) was rated first and second priority by retailers and FMCG companies respectively. In addition, participants rated planning and forecasting as the greatest challenge to achieving their objectives.

*Availability and out-of-stocks*<sup>49</sup>

Availability is one of the biggest and oldest issues impacting both retailers and manufacturers, and is necessarily so due to the high levels of potentially disloyal behaviour that shoppers display. This emphasises the importance of well-stocked shelves.<sup>50</sup>

A simplified definition for on-shelf availability (OSA) is: *providing the desired product in a saleable condition when and where the shopper wants it.*

Understanding the dynamics and impact of OOS is the first step in reducing them. Understanding buying patterns is the next step. In South Africa purchasing follows the cycles of people’s remuneration. Therefore, out-of-stock at month-end has a greater potential for a lost sale than one in the middle of the month, while stock-outs on weekends are even more detrimental.<sup>51</sup>

When measured along the supply chain, availability deteriorates closer to the shopper. An availability service level of over 90% from the supplier to the retailer (direct delivery or via a DC) can deteriorate by 1% in the small distance from the stock room to the in-store shelf/fixture. This highlights the importance of availability in the last 100 metres.

An Efficient Consumer Response (ECR) SA working group with participants from FMCG companies in KwaZulu-Natal undertook a collaborative drive to improve availability, based on ECR Europe guidelines. They proposed the following seven levers to address the root causes of OOS and improve on-shelf availability: measurement, management attention, replenishment systems, in-store execution, inventory accuracy, promotion management and ordering systems.

*Sales and Operations Planning (S&OP)*<sup>52</sup>

S&OP can be defined as the process that provides a link between business planning and operational tactics.<sup>53</sup> S&OP represents one of the most significant levers for supply chain synchronization/integration as illustrated in Figure 9. It entails demand management (planning to produce to meet demand) encompassing cross-functional business processes (throughout the marketing, finance, manufacturing and sourcing, as well as logistics functions) towards organisational alignment.

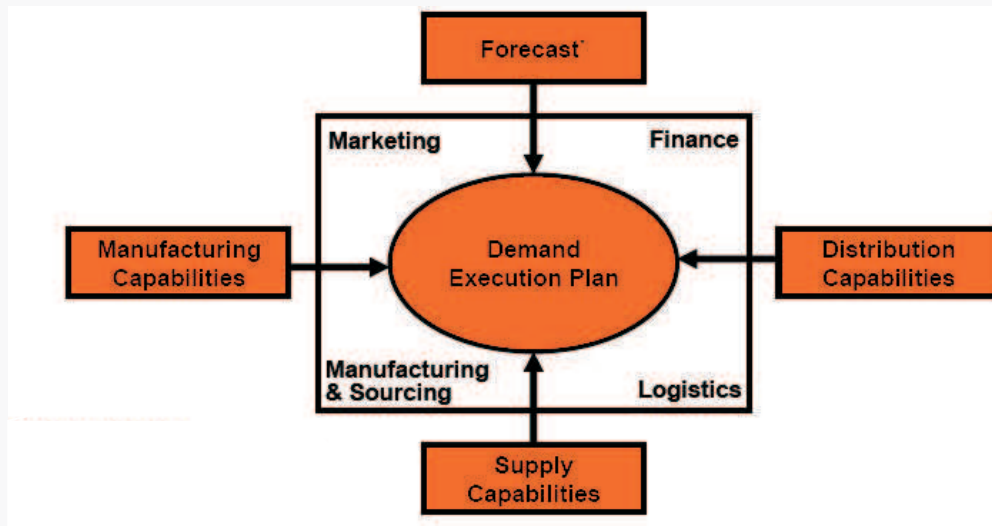


Figure 9: Synchronising the Supply Chain<sup>54</sup>

“S&OP is as much about institutionalizing communication throughout the organization as it is anything else,” says Thomas F Wallace.<sup>55</sup>

48 Barloworld Logistics. FMCG and Retail **supplychainforesight** survey 2006.

49 ECR-South Africa, 2006. Availability: A South African Perspective.

50 Shopper Trends 2005, www.fastmoving.co.za.

51 Chris Olivier. The Marketing Site Out of stock out of business, The Smollan Group. www.themanager.org/Strategy/Out-Of-Stock\_Situations.htm

52 Pienaar and Rossouw, 2006.

53 APICS. CSCP study material.

54 Lambert, Douglas M. Supply Chain Management Processes, Partnerships, Performance. Supply Chain Management Institute. Second Edition (2006). Page 67.

55 S&OP expert in the APICS community.



Research on S&OP in SA's FMCG industry<sup>56</sup> presented at the 2006 SAPICS Annual Conference found that the initial focus of companies implementing it is generally on facilitating a unified, cross-functional plan and process. Only companies that have been involved in S&OP for an extended period consider value chain enhancement and continuous improvement aspects.

Participants rated the following main challenges/constraints to achieving successfully integrated planning and forecasting:

- The shortage of skills to support the (S&O planning) process in the organisation (top constraint for almost all companies).
- Interactions are focused on fire-fighting, limiting the opportunity to align the organisation.
- Organisational leadership issues are rife, including lack of executive alignment and/or an insufficient mandate to conduct S&OP as well as functional dominance.
- IT-related constraints such as poor data integrity in underlying enterprise systems and lacking capabilities of enterprise systems.

A major challenge remains the lack of involvement of financial thinking in the S&OP process. The process remains operational in nature with limited scenario modelling, constraint-based planning and/or links with financial plans.

## Supply Chain Maturity

The 2004 SA Grocery Industry Tracking Study<sup>57</sup> concluded that whilst some leaders have made progress in reforming their supply chains, the industry as a whole had hardly progressed. Leaders have made significant progress in demand management and operational excellence, which have had beneficial results for them and their supply chain partners in reducing operating costs and excess inventory and increasing sales and market share. Within the industry, companies have markedly improved their supply-side processes and internal optimisation, but additional gains can only be realised through collaboration: specifically by optimising across supply chain partners and jointly addressing consumer needs. The gap between leading and lagging companies is widening, making lagging companies' supply chain management shortcomings increasingly obvious to their customers and trading partners. Substantial work is required to implement these collaborative efforts, but in the mean time lagging companies are missing out on the benefits of reduced operating costs and inventories, while pioneering companies enjoy a significant first-mover advantage in growing their market share and/or profitability.

Although the FMCG respondents in the **supplychainforesight** survey paid lip service to their supply chain collaboration goals, in reality implementation is rarely visible. This might be due to a misconception of the true extent of what collaboration entails. The focus for individual supply chain members is often still to increase their share of the pie within the chain – often at a cost to others, for example: retailers as orchestrators or channel masters putting the price squeeze on manufacturers in return for shelf position or floor space. In a mature supply chain the aim should rather be to search for long-term sustainable relationships and growing the market share together.

A joint effort at identifying industry-wide supply chain inefficiencies is a first step in mobilising the industry towards collaborative solutions. The process towards resolving these challenges needs to be driven and committed to by the industry, and responsibilities, performance measures and costing structures need to be defined. In some cases a pilot has merit in proving feasibility of proposed solutions. A strong industry representative body such as CGCSA could be very valuable in unifying stakeholders to take ownership of such initiatives.

## Conclusion

Consistent logistics themes in FMCG are measurement and implementation. ECR initiatives such as the 2004 SA Grocery Industry Tracking Study reflect an industry focus on measurement and benchmarking, with the development of standardised KPIs and scorecards. The industry's challenge now is to "implement logistics (*specifically collaboration*) strategies within a developing economy".

Collaboration as a concept is well understood by supply chain partners. The challenge is to alleviate inefficiencies as highlighted by measurement and benchmarking through the implementation of key collaborative efforts that meet joint objectives. This type of collaboration is based on agreed performance measures and requires incentives for people to work towards common goals, as well as equitable sharing of mutual gains. Although a number of pilots bear evidence of more integrated supply chains, significant effort (and often investment) is required to move from partial to full implementation and realise potential financial benefits.

Experience has taught that companies do not overcome their resistance to information sharing (often in an attempt to maintain their 'competitive advantage') and buy-in to such initiatives without a compelling reason. This is provided by the threat of new international entrants to the local market and global sourcing of products. In the face of this challenge, no un-networked individual company will be able to stand its ground, but collaborating supply chains will survive and flourish, by jointly serving the increasingly demanding and sophisticated South African consumer's needs.

<sup>56</sup> Pienaar and Rossouw, 2006.

<sup>57</sup> ECR-SA. SA Grocery Industry Tracking Study 2004, IBM Business Consulting Services.

# GOVERNMENT SERVICE DELIVERY

King, D.

## Introduction

Government service delivery in a constrained environment is critically dependent on supply chain efficiency and innovation in service delivery supply chains. The Department of Public Service and Administration (DPSA) introduced the concept of *Batho Pele*, "people first", with the release of the White Paper on Transforming Public Service Delivery in 1997. The aim of the White Paper was to provide a policy framework and a practical implementation strategy to guide the transformation of public service delivery. Government reaffirmed this commitment to better service delivery with the introduction of the *Batho Pele* Revitalisation Strategy in 2003. *Batho Pele*, in short, is an initiative to get public servants to be service orientated, to strive for excellence in service delivery and to commit to continuous service delivery improvement. Ten years on from the release of the White Paper, many improvements in service delivery have been made, but government still struggles with some issues as highlighted in the White Paper. The public's perception of government service delivery is still generally poor. Perceptions include inequitable distribution of public services, especially in rural areas; lack of access to services; lack of transparency and openness; lack of accurate and simple information on services and the standards on which they are rendered; and lack of responsiveness by public servants.

## Key Industry Challenges

One of the key challenges government faces is to change the perception of the public regarding government as a poor service supplier. A key issue is the lack of services or poor access to services. The DPSA cited in the Service Delivery Review<sup>58</sup> that despite impressive improvements in the provision of access to government services through a range of platforms, a need remains to address access to services in an integrated and holistic manner. Thusong Service Centres (formerly known as Multi-Purpose Community Centres - MPCCs) are one of the ways in which government is trying to integrate service delivery and make it more accessible to citizens.

A Thusong Service Centre (TSC) is a one-stop service centre providing information and services to communities in an integrated manner through the development communication approach.<sup>59</sup> These centres provide a hub of activities and a variety of services through local, provincial and national government, as well as other service-providers like NGOs, parastatal and private businesses. The key to the success of these centres is that the focus should be on the customers and what they require. Centres operate within a framework of *Batho Pele* principles and values. This means that communities around the service centres identify services offered by the centre based on their needs. By the end of March 2007, 96 Thusong Service Centres had been established by government.



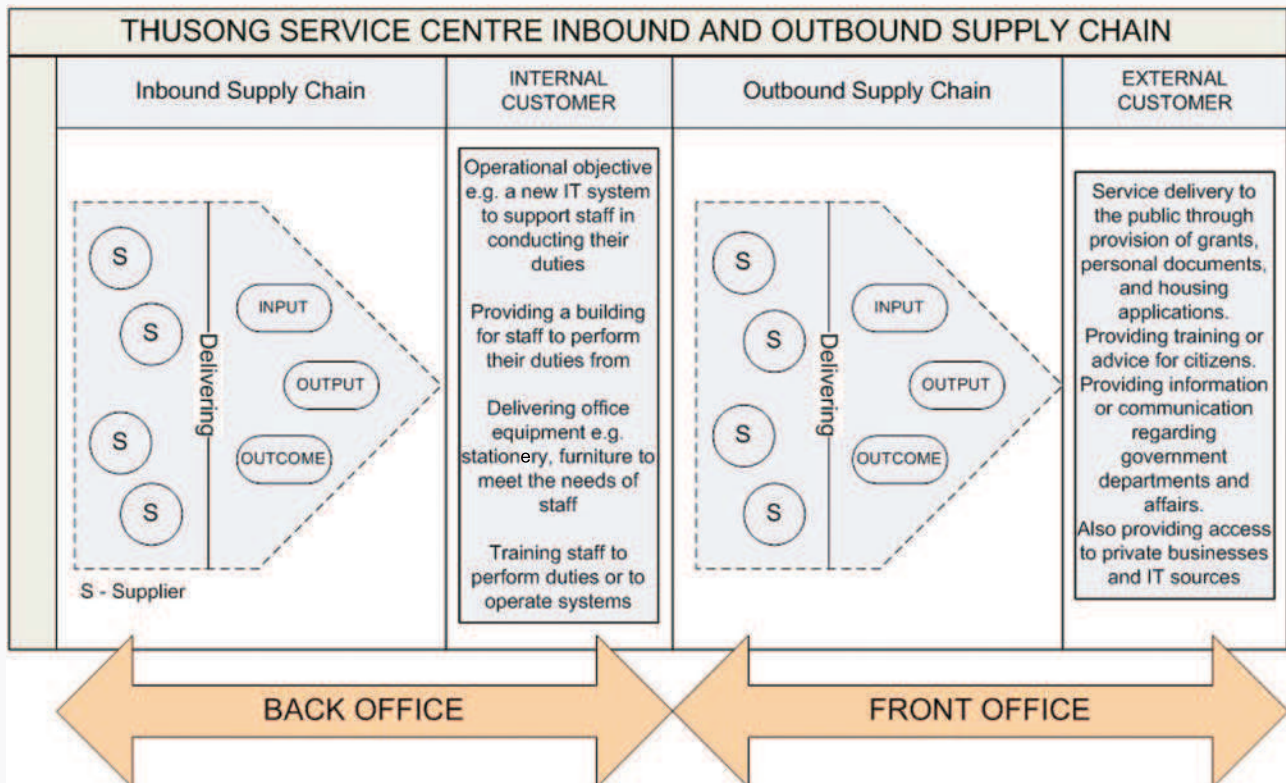
Figure 10: TSCs located in Gauteng

58 Department of Public Service Administration, 2006. Service Delivery Review Vol 4 No 3, Lessons from Canada.

59 <http://www.thusong.gov.za/>

## Key Supply Chain Challenges

The supply chain of a Thusong Service Centre can be defined by the following figure<sup>60</sup>:



- The Outcome of a project is the contribution it makes towards the goal of a government department at the TSC. An outcome may be the achievement of a KPI target e.g. processing a certain number of ID applications per month.
- Outputs are intermediary objectives that support the delivery of outcomes. Improving the current IT system at a TSC can be referred to as the output of a project.
- Inputs secure Outputs. In an IT project these may include the hardware itself (laptops, screens etc.), off the shelf software, additional work such as the design of databases and spreadsheets. Normally many inputs are required to secure an output.

Figure 11: The Thusong Service Centre supply chain

The Service Delivery Review<sup>61</sup> cites that the public service has not completely internalised the critical role that service points play in the service delivery supply chain. The back office function is not always fully aligned with the front office function and in some cases neither of these are functioning optimally or effectively. If the customer is the most important person in the supply chain, the “moment of truth”, where the customer receives the service, should be the main focus of all involved, from the policy makers on national level to the person sitting behind the counter at a service point. The Thusong Service Centres can act as a benchmark for other service delivery projects in that it can show via its successful implementation how cost savings can be achieved whilst also delivering service improvements that result in greater value for government and the citizens it serves.

60 Office of Government Commerce UK, 2005. Adapted from the Supply Chain Management in Public Sector Procurement, www.ogc.gov.uk.

61 Department of Public Service Administration, 2004. Revitalising Public Service Delivery. Service Delivery Review Vol 3 No 3.

## Supply Chain Innovation

A key benefit of TSCs is the provision of access to information technology (IT) in the form of telecentres that provide access to the internet and offers computer training to the public. Worldwide the importance of eGovernment (electronic government) in customer service delivery has been recognised and promoted as the way in which government can be brought closer to the people it serves, and countries like Canada and Singapore are leaders in this field. The South African eGovernment strategy is still in the early growth stage with the launch of the Batho Pele Gateway Portal in 2004 and is slowly moving from a purely informational platform to an interactive platform. The lack of access to internet services for the majority of people and the high cost of IT in South Africa is hampering this growth, and a different approach is necessary in the interim. According to a survey done by Accenture in 2006<sup>62</sup>, 90% of South African respondents felt confident using cell phones and 84% were comfortable using SMS services. Mobile technology could thus be a key in addressing government's slow response rate to citizen requests and improving access to government services. The Thusong Service Centre initiative could provide a platform for future incorporation of this technology, thus enabling the overall government supply chain to be shortened considerably and realising the aim of "bringing government closer to the people".

62 Accenture, 2006. Leadership in Customer Service, Building the Trust, High Performance in Government.

## SMALL BUSINESS DEVELOPMENT PERSPECTIVE

Naude, A.H., Ralehoko, E., Meyer, I.A. and Marais, M.A.

The second economy will in the short term continue to operate in an environment where infrastructure will remain a constraint to efficiency. In this scenario, strategies for improving operations on existing infrastructure is required. However, such strategies need to be cognisant of the specific logistics challenges of the context within which they operate. Due to characteristics such as the low volumes of supply chains, these challenges are often very different to those encountered in the first economy.

### **Reducing the logistics divide: strategies for improved operations**

Two strategic approaches to low-volume supply chains have been defined, namely a logistics streamlining approach and an economic mainstreaming approach (as introduced in the section on “The role of developmental logistics”).

The constellation of problems that are typical of a context where volumes are low, costs are high and clusters and market linkages are poorly developed (i.e. an environment that could benefit from economic mainstreaming) is outlined below:

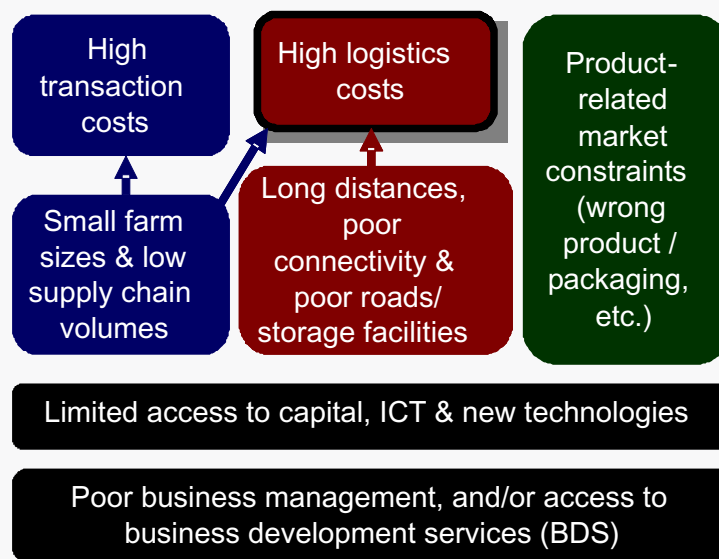


Figure 12: Constellation of factors inhibiting the mainstreaming of resource-based second economy enterprises in remote rural areas

The two intervention approaches can be further elaborated as follows:

- **Logistics streamlining approach:** *strong transport focus*, aimed at improving the infrastructure, coordination and cost-efficiency of freight logistics operations by, among others:
  - Development of transport booking offices and/or transport/logistics brokering services;
  - Establishment of storage facilities or logistics depots;
  - Introducing omnibus transport operations, aimed at utilising the same vehicles and/or services for small freight and special passenger transport operations;
  - Capital subsidies and adapted regulations to facilitate the use of safe multi-purpose freight and transport vehicles;
  - Contracts and/or vouchers for selected special transport operations, such as scholar transport and patient transport operations.
- **Economic mainstreaming approach:** *strong business development services (BDS) focus*, aimed at deploying logistics brokering and infrastructure development as part of a coherent package of business development services and other measures aimed at developing viable rural enterprise clusters, and linking them to mainstream supply chains and markets.

Figure 13 provides an overview of the cornerstones and related key success factors of the economic mainstreaming approach as developed by Naudé et al.<sup>63</sup> The first cornerstone is the development of business intelligence networks, where empowerment or promotion of infopreneurs could be a key catalyst. This then provides a basis for identifying existing as well as potential users of developmental logistics and other business development services. Importantly, some form of BDS subsidy

63 Naudé A.H., Van Rensburg, J. and Mashiri, M., 2006. Roadmap for promoting, developing & deploying developmental logistics as a key rural development driver in South Africa. (Report for Department of Transport).

mechanism would be justifiable in all instances where the costs that could be recovered (e.g. through user changes) are less than the cost of providing the service, and the value of the wider developmental benefits. Effective establishment of so-called clusterpreneurs (a concept which was first devised by UNIDO as part of their cluster and network development methodology) or business networking agents could then assist with the development of enterprise clusters, associations, cooperatives or other forms of local business organisation (see third cornerstone).

The last cornerstone involves the development and/or streamlining of supply chain linkages (including logistics and market linkages). If a strongly organised enterprise cluster already exists, and the members are also located in the same general area, they could potentially make their own arrangements to share transport costs and undertake other logistics streamlining actions (such as the development of logistics depots belonging to the association or cooperative). More complex situations involving enterprises from different clusters might however require the development and use of *logistics brokering services*.

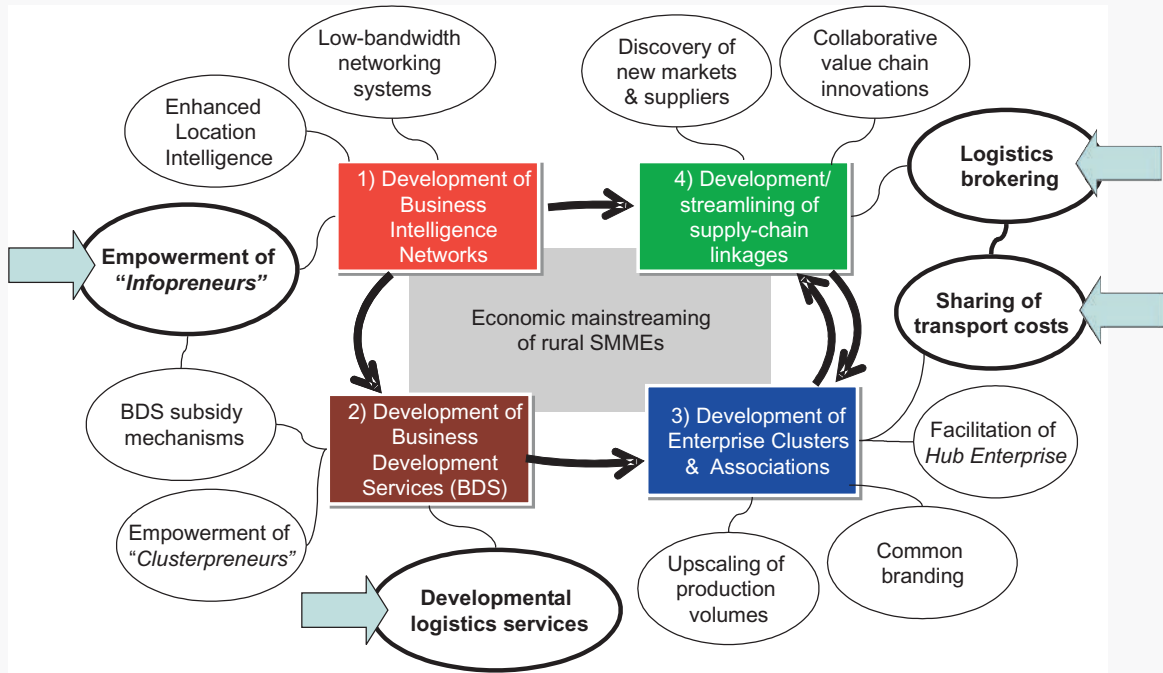


Figure 13: Cornerstones and associated interventions for successful rural economic mainstreaming<sup>64</sup>

64 Copyright: A Naudé, CSIR 2006



## Implementing strategies to improve operations: Case studies

Pilot implementations to improve small business procurement and logistics are underway in a number of different contexts. The aim of these implementations are to provide platforms and mechanisms for the sustainable reduction of logistics cost, and improved access to markets.

Local best practice in emerging farmer development<sup>65</sup> as well as initiatives to support rural spaza retailing, demonstrate the application of the various strategic approaches to logistics development:

Context	Strategic Approach	Best Practice Examples
Case 1	Logistics streamlining approach: strong transport focus, aimed at improving the infrastructure, coordination and cost-efficiency of freight logistics operations	<b>Emerging farmer development in Prince Albert</b> The town's economy is driven by irrigation farming with a high potential for fruit farming. The establishment of a cold store in town was aimed at resolving complex logistical problems of peak season (export) fruit production.
Case 2	Logistics streamlining approach: strong transport focus, aimed at improving the infrastructure, coordination and cost-efficiency of freight logistics operations	<b>Emerging farmer development in OR Tambo district municipality</b> Various fragmented development initiatives aimed at skills development are integrated and enabled by the development of innovative logistics solutions.
Case 3	Logistics streamlining approach: strong transport focus, aimed at improving the infrastructure, coordination and cost-efficiency of freight logistics operations	<b>Emerging farmer wool supply chain</b> Upgrading and construction of wool sheds in communal areas, and the integration of emerging farmers into the infrastructure of the commercial supply chain to enable market access.
Case 4	Economic mainstreaming approach: deploying logistics brokering and infrastructure development as part of a coherent package of business development services	<b>Emerging farmer sugar supply chain</b> Industry collaboration takes place throughout the value chain, from growers to millers. Emerging farmers are incorporated into the activities, investment and training programmes of the industry and are groomed to produce quality sugar cane. Outsourced support services and mentorship from commercial farmers is associated with land reform.

Table 7: Case studies reflecting different strategic approaches

<sup>65</sup> National Department of Agriculture, Marketing Directorate, 2006. Assessment of the Status of Agro-Logistics Strategy in South Africa. Report prepared by CSIR, Agri-Africa Consultants and USB-ED.



## Trading in a constrained environment: survival strategies

The strategies outlined above require a top-down, integrated and coordinated approach to solution development. In practice, small businesses are also developing their own strategies to survive in a high-cost environment. Two case studies focusing on the business environment and logistics challenges facing spaza shop owners were conducted in the Western Cape. Two spaza shop owners were interviewed, one based in a more purely residential township (Kayamandi) and the other based in a more established township that has greater commercial presence (Phillipi).

### Durra Cashstore in Kayamandi

Kayamandi is a mushrooming informal settlement that is two kilometres away from Stellenbosch and has about 12 000 inhabitants which represent 20 percent of the population of Stellenbosch. Access to town is restricted by a railway line. It is inhabited by mostly migrant workers who work on the farms and in farm-related industries such as wineries around Stellenbosch. This leads to a highly seasonal customer demand.

Durra Cashstore operates from the owner's home in the newer residential area of Kayamandi, which consists of blocks of two and three-roomed flats. The owner relies on the store to provide for his family of four. The shop uses what would have been the kitchen, and trading space is hence a limitation to business growth.

The customers mostly buy ingredients for preparing meals (bread, eggs etc.) and do so early in the morning or late at night. People buy from the shop since it is close to their homes. Consumers are price sensitive and prefer to buy everything from one shop, which means that the owner has to stock a variety of goods at a competitive price. Stock such as large maize meal bags is bought weekly from a wholesaler that is 25 km away and that caters for small retailers by providing them with an access card. Perishables and smaller items are bought in Stellenbosch. Transport and storage of bulky items is a problem, since it requires access to a bakkie and to storage space.

The settlement of non-South Africans in the area has introduced new competition. Newcomers adopt strategies of collaboration on various aspects. They provide greater product variety by sourcing items from another shop if they do not have it, thus retaining the customer's business. Transport costs are reduced by doing bulk buying for several shops. There was no evidence that the South-African shop owners are emulating these strategies.

### Spazas in Phillipi Township

Phillipi is one of the most densely populated townships in Cape Town, surrounded by Khayelitsha and Crossroads. There is a sufficient supply of public transport and nearby new business centres such as a shopping mall in Khayelitsha. There is a variety of businesses that compete against and complement each other: different sizes of spaza shops, supermarket-like shops (that act as wholesalers to small shops), and specialised businesses such as fisheries and fast foods outlets.

The major challenges facing spaza owners in this environment is the customer's ability to make use of the available transport to buy directly from wholesalers at low prices and to get to shopping centres that offer variety. Spaza owners who have to use public transport cannot compete, since they have to pay separately for the transport of large items such as 50 litres of paraffin. As in Kayamandi, the South African spaza owners claim to have lost business to non-South African spaza owners that do manage to stock larger items (presumably through collaboration strategies). Spaza shops do benefit from the direct delivery of cooldrinks and bread, and business tends to shift towards these items. This trend is accelerated by the increase in food-related businesses in the townships which increases the sale of complementary goods and products: fisheries and fast foods increase the sale of bread and drinks.

Spaza shop owners will remain under pressure if they do not innovate. The difference between the prices of goods in supermarkets in town and the spaza shops in the townships is mostly justified by consumer transportation costs, and if this factor is reduced, spazas will decline. Spaza customers complain about a lack of business expertise of spaza owners in general, but in particular that of the South African owners.

## PERSPECTIVE ON THE FUTURE

Hobbs, I.E.

The CSIR and its associates contend that the logistics industry is a key enabler of future economic growth, and that evolution of the industry is dependent upon all stakeholders fulfilling their appropriate roles. The following actions are pivotal to sustainable change:

- The strategic focus within the transport portfolio of the **Department of Transport (DoT)** needs to be balanced across all the transport disciplines, and dedicated resources need to be assigned to ensure that the national freight logistics strategy remains relevant and that a measurable implementation plan is accepted by all stakeholders. Rigorous tracking of the plan should be implemented, with timely adjustments when circumstances demand. Sustainable long-term infrastructure investment decisions should be driven without being deterred by short-term emergencies.
- **DoT** should establish and maintain a useful information base from which both macro-economic and industry-level decisions can be informed.
- The **research and consulting fraternity** has a role to continuously highlight the lack of information and strategic co-operation in the industry, and to lobby for a macro economic understanding of the industry by all stakeholders, within which all research and consulting projects can be conducted. Researchers and consultants should interpret information strategically and understand the impact of micro-level recommendations on the macro economy. A standard reporting framework with regards to quantitative data is required to ensure that data sources can be integrated and that repetition of work is eliminated. Where not bound by confidentiality agreements, research must be shared as widely as possible.
- By sharing non-competitive information, **industry** can contribute to enhance global competitiveness.
- Collaboration between **established industry clusters** and **logistics service providers** (with the understanding of the macro economic impact of their actions) can further streamline the major supply chains in the South African economy. This will ensure stability and provide a platform for the economy to realise the economic potential of both established and upcoming industries and industry players.
- Pro-active engagement amongst **upcoming industry players** will contribute towards freight consolidation and facilitation of logistics service provision.
- **Established and upcoming industries** have a role to engage in order to transfer learning, enable an understanding of the impact of their logistics decisions on each other, and thereby facilitate logistics service provision.
- **Logistics service providers** have a role in enhancing competitiveness by understanding which global practices/solutions will work in the South African economy and pro-actively lobbying with government and industry to establish these practices and invest in these solutions. Pro-active engagement with industry to develop innovative solutions will further contribute towards competitiveness.

