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Analysis of Kenya's transport system as service provider and gateway to the Northern Corridor

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ANALYSIS OF KENYA'S TRANSPORT SYSTEM AS SERVICE PROVIDER AND GATEWAY TO THE NORTHERN CORRIDOR

By

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DECLARATION

I certify that all the material in this dissertation that is not my own work has been identified, and that no material is included for which a degree has previously been conferred on me.

The contents of this dissertation reflect my own personal views, and are not necessarily endorsed by the University.

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ABSTRACT

Title of dissertation: **Analysis of Kenya's transport systems as service provider and gateway of the Northern Corridor**

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This dissertation is a study of the transport systems in Kenya (Port, Rail and Road). The study seeks to look at how these systems are run in relation to offering transport services to the satisfaction of the users. A brief look is given on the current operating environment, the various institutions charged with giving services are identified, and throughput of the port is given and compared with other ports that are potential threats. The author has examined the capacities of these modes and what they offer to the domestic and landlocked countries. Analysis is made of the shippers' expectations of the service providers as critical factors in choosing a particular transport mode.

The study identifies drawbacks in the transport system, and customs and other factors that have hindered the smooth flow of information and cargo to and from the owners rendering the systems uncompetitive. In particular, the customs clearance of goods as a way of simplifying procedures is highlighted. Particular analysis has been made of factors that may influence the cargo owner or carrier to opt for another port and the concept of multimodal transport is introduced to help in networking rather than working in isolation as a solution to offering efficient and expedited services to the users.

Conclusions are made in the last chapter as well as recommendations on the suitable measures that could be undertaken to improve these systems in order to give Kenya a competitive edge in the transport industry.

KEY WORDS: Transport, Customs, Costs, Analysis, Competition, Customer Satisfaction.

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List of Abbreviations

ACIS	Advanced Cargo Information System
ASYCUDA	Automated System for Customs Data
BIF	Bond In Force
CFAs	Clearing and Forwarding Agents
Dar	Dar es Salaam.
DRC	Democratic Republic of Congo
EARH	East African Railways and Harbours
EARC	East African Railway Co-operation
EDI	Electronic Data Interchange
HGV	Heavy Goods Vehicles
ICD	Inland Container Depots
IDA	International Development Agency
IMF	International Monetary fund
KNSL	Kenya National Shipping Line
KPA	Kenya Ports Authority
KRA	Kenya Revenue Authority
KRC	Kenya Railways Corporation
Ksh.	Kenya Shilling
KTA	Kenya Transport Association
MSA	Mombasa
MT	Metric tons
MTO	Multimodal Transport Operator
NCTA	Northern Corridor Transit Agreement
NVOMTO	Non Vessel Operating Multimodal Transport Operator
RORO	Roll on Roll off
TEUs	Twenty Equivalent Units

THA	Tanzania Harbours Authority
TRC	Tanzania Railways Corporation
TTCA	Transit Transport Co-ordination Authority
UNCTAD	United Nations Commission of Trade and Development
URC	Uganda Railways Corporation
US$	United States Dollar
VOMTO	Vessel Operating Multimodal Transport Operator

CHAPTER 1

INTRODUCTION

Kenya, a transit country in the East African region is endowed with a coastal line that has a natural harbour serving the land-locked countries of Uganda, Burundi, Rwanda and Democratic Republic of Congo (DRC). Kenya serves the Northern Corridor, after the 1985 Northern Corridor Transit Agreement (NCTA) on trade was established. The port of Mombasa has gained the status as the gateway to the northern corridor countries providing shipping activities and has extended its services to the customers by the opening up of the Inland Clearance Depots in Nairobi, Kisumu and Eldoret towns.

The Kenya-Uganda railways were built a hundred years ago with the aim of opening up the East African hinterlands for trade. Today, the rail network, together with road transport have turned out to be the major modes of transport in the region. They (road and rail) account for about 70 % of the total cargo transported within the region and 94 % of the passengers ferried, while 30 % of cargo is carried either by air, pipeline or sea. (*The East African, 1999).*

It is through these systems that inter networking patterns of the movement of cargo have emerged within the region which depends on road and rail to meet the needs of the business community. The most important routes for the transport of cargo are the Kenya-Uganda railways that link Kenya to Uganda. Mombasa road runs alongside the

railways serving a wide area extending to Uganda, Rwanda, Burundi, Northern Tanzania and the Democratic Republic of Congo.

1.1 Aim of study

The fast developments in industry and technology in the countries of the northern corridor have outgrown the capacity of the Kenyan infrastructure. This has led to violation of the maximum load limit and hence the collapse of the roads and this in turn has contributed to a strain on the budget allocation and extra costs are passed to vehicle owners through road and petrol levies. Over-dependence on road and rail transport has exposed traders to losses due to the climatic (El nino) changes that set in and destroyed the infrastructure. There are slow but on-going rehabilitation projects to improve the infrastructures. Seaports have been developed with the hope that they will be able to generate income and become sustainable. There are many problems associated with how these infrastructures are run and these have in turn affected shipping activities.

The purpose of this study is to analyse the transport systems in Kenya and the problems, which have hindered the 'flawless and seamless' flow of cargo to the consignees in Kenya, and the countries served by the northern corridor. These problems could threaten the port of Mombasa, as the gateway of the northern corridor since these may prompt the shipper/ the cargo owner to opt to use other routes. This could be because the shipper is not satisfied with the quality of services of the port, the documentation procedures and problems encountered while moving this cargo to the final destination either by using road or rail.

The author's choice of topic was influenced by the conviction that growth in the shipping industry relies very much on the sustainability of the different organs (for instance, ports, lean customs procedures, interconnectivities between road and rail etc.). These organs are the ones that facilitate the movement of goods from the shipper to the

consignee by use of Multimodal Transport Operators. These systems cannot work in isolation to sustain and satisfy the needs of the customers.

1.2 Scope and methodology

This study has been developed through the analysis of the data that was collected from different organisations charged with offering transport services. The author availed herself of the annual reports of the rail and port institutions and literature developments in transport (sea, road and rail) in Kenya. In addition to materials from the library, the author made research on journals, periodicals and daily national newspapers on issues affecting the port and transport industry to the users' satisfaction. Data was also collected from field studies in transport and logistics companies, shipping companies in as well as seminars and lectures conveyed/conferred at the World Maritime University. Computer spreadsheet method was used where necessary to make comparisons of statistical data.

Though the study was successful, the author was faced with problems of accessibility to statistical data of relevant information from Durban in South Africa to compare the road and rail costs and transit times, having made several attempts by email and fax. The different representatives approached for information were not willing to give data freely, especially the tariff, as this is seen to be a threat to their businesses on their competitors and, therefore, the ones who volunteered asked that the tariff should not be publicised.

The study starts with an introduction of the developments of the infrastructures of port, rail and road systems and the current operating environment. Chapter two examines the port, rail and road infrastructure in detail, analysing the port throughput in comparison with the ports of Durban and Dar es Salaam, deemed to be the major competitors. Analysis of the rail performance, giving descriptions of the other bodies that are involved in the facilitation of these processes, is given. Chapter three gives a preview of

what the shippers expect of transport operators in relation to different parameters that will influence the modal choice.

Chapter four takes up the analysis of the drawbacks in the port, road and rail and customs procedures described as 'bottlenecks' that have hindered the smooth flow of information and cargo with a view to discuss measures that could facilitate the movement of cargo.

Chapter five analyses the costs that are incurred in moving both the domestic and transit cargo from the ports through the road/rail or combined to the destinations in comparison with the ports of Durban and Dar es Salaam. Analysis is made of the inland transport costs as compared with those of Tanzania, Kenya's major competitor. The study looks at ways by which these transport sectors can reduce costs by combining the transport services and hence the concept of multimodal transport and multimodal transport operator is introduced. The last chapter gives the author's conclusions and recommendations that could facilitate trade and cargo movement.

1.3 Current operating environment

The study was carried out in Kenya during the break in December 1999. At this time, Kenya is undergoing many changes. The economy is not doing well and institutions are on the verge of collapse because major donors like IMF (International Monetary Fund) have withdrawn funding of some institutions due to mismanagement, lack of accountability and corruption. Some institutions, for instance the KRC, are in the process of being privatised because they cannot raise money to run the railways sustainably. The road infrastructure is collapsing and needs major rehabilitation and expansion. The port of Mombasa on the other hand, has made enormous changes of management for the last two years and has been inefficient in conducting the business.

CHAPTER 2

PREVIEW OF THE TRANSPORT AND PORT SYSTEMS

The ports in East Africa continue to play a significant role in the movement of exports and imports and thus opening up the region to international trade following the liberalisation of economies of the countries in the region.

Uganda has a major port under the Uganda Railways Corporation (URC) on the shores of Lake Victoria (Port Bell). Ferry services on Lake Victoria provide intermodal transport from the ports of Mombasa and Dar es Salaam to Port Bell in Uganda. Lake Services increasingly play a major role in the movement of transit cargo with Lake Victoria serving both the northern and southern corridors.

Mombasa and Dar es Salaam are the two ports serving the East African region, the hinterlands of Kenya, Tanzania, Uganda, Rwanda, Burundi, the north-eastern part of the Democratic Republic of Congo, Zambia and Malawi. The port of Mombasa serves Uganda, Rwanda, Burundi and DRC, while Dar es Salaam serves the same countries including Zambia. Some Zambian cargo moves through the port of Durban in South Africa giving the port of Dar es Salaam competition, while the other upcoming ports of Beira and Nacala give competition on Malawi based cargo.

The East African countries export mainly primary products (agricultural) and import machinery, electronics, petroleum products and foods to offset the food shortages.

The ports of Mombasa and Dar es Salaam serve the hinterlands by networks of land transport systems, mainly road and rail and to some extent lake services and pipeline that take cargoes to their final destinations. 70 % of the imports and exports through the port of Mombasa are hauled over road, while 80 % of the total imports into Uganda are moved into the country by road. This clearly shows that inland transport is important to the shipping industry. This means that the status of the road and rail networks have a great effect on the quality of intermodal services the ship owners could give to the customers. The conditions in the hinterlands have an effect on the turnaround time and therfore, efficient utilisation of resources.

2 .1 Transport infrastructure

The first jetty at Kilindini was to be used mainly for the discharge of materials imported for the building of the railway line (then known as Uganda railways) through Kenya to Uganda. When the rail line construction was taking place in Kenya, there was need for a port to discharge materials for construction. Development of port facilities followed in earnest as dictated by demand. The port of Mombasa can be classed as a multi-purpose port that has no special area for handling transit cargo. The port ownership and cargo handling operations are vested in the organisation.

The transport infrastructure is centred at the port of Mombasa. There is a good connection of the port to its hinterland by a well-developed road, rail and pipeline transport. The port of Mombasa is strategically situated to serve the rich commercial, agricultural and industrial hinterland of Kenya and the transit countries. The port of Mombasa offers transit facilities for handling both imports and exports and hence, it is considered a transit area where imports are received, stored awaiting clearance and moved by importers /their agents and exports are received for shipment. In handling these imports/exports in the port, other stakeholders are involved and their performance has a direct bearing on the efficiency of the port. For instance, the off take of imports

from the port is largely dependent on both the rail and road transport modes. If these aspects are incapacitated in any way this will interfere with the movement of cargo from the port.

2.2 The Port infrastructure and equipment

The port of Mombasa is under the management of the Kenya Ports Authority (KPA) a parastatal body of the government of Kenya. Under the KPA Act (cap.391), KPA is mandated to maintain, operate, improve and regulate the ports situated on the eastern coast of Kenya. The port of Mombasa is furnished with up to date equipment and facilities. It has a natural harbour, so the berths do not need to be dredged too often. It has well established quays and capability of handling ships of all kinds and sizes. In 1998, the port handled 1564 deep-sea vessels, all ships, were on international voyages each with average port days of 4.28 per ship.

The port of Mombasa has the following facilities,

- 13 deep - water general cargo berths, 3 deep - water container berths forming a fully-fledged container terminal with capacity to handle 250,000 TEUs per year.
- one berth with conveyor belts for handling soda ash.
- Bulk oil jetties.
- Berths for handling cement, bulk molasses and tallow, edible oils and other bulk liquids.
- 58 travelling cranes, 42 mobile cranes and one floating crane. In addition the port of Mombasa offers ancillary services such as ship repairs, bunkering, ship chandling, customs, security, health and immigration services. By comparison, the port of Dar es Salaam has 11 deep-water berths and three of these are container berths with an annual capacity of 120,00TEUs. The container terminal has two ship to shore gantry cranes each handling five rubber tyre gantry crane. Other terminal equipment include portal cranes, yard cranes, forklift trucks, front loaders, tractors and trailers.

The port of Durban is a full service, general cargo port and handles 20 % of the total traffic in South Africa. The port handles 5,000 commercial vessels yearly and brings into South Africa 26 million tons of cargo. The port of Durban being a hub port has 57 deep-water berths serviced by 21 terminals and 8 of these are container berths. The container terminals handle about 880,000 moves yearly making 14 moves per hour compared to Mombasa port that is currently making 5 moves per hour. Durban does a lot of transhipment to both ports of Dar es Salaam and Mombasa while some cargo discharged at Durban, if ferried through inland transport, is destined to the Land-locked countries served by both Tanzania and Kenya. The port operates the passenger, container, RO-RO, break-bulk and timber terminals and the rest are privately operated.

2.3 Cargo throughput

Throughput of cargo at the port of Mombasa has been, generally speaking, a function of the economic situation of the countries that use this port, the performance of the inland transport and how competitive it is in comparison with the other ports in the same region.

2.3.1 Total cargo traffic

For the last five years, the port of Mombasa handled on average 8.3 million tonnes per year. The total cargo throughput increased from 7.9 million tonnes in 1993 to 8.56 million tonnes in 1998, an increase of 7.1 % over the period. The highest recorded was 8.69 million tonnes that was handled in 1996. Imported cargo grew by 4.1% during this period while there was a drop of about 22 % in the volume of export cargoes in the same period. This decline in the port freight activity can be associated with the disruption of transit traffic due to global recession and civil war in the region, especially in the hinterlands of Rwanda, Burundi, DRC and Southern Sudan. For instance, when war broke out in DRC, its government reviewed Mombasa as a traditional route for Eastern Congo bound cargo. Table 1 below summarises total cargo throughput at Mombasa

between 1993 and 1998. Mombasa port handled a total of 8.5 million tonnes of cargo in 1998 against 8.44 million tonnes handled in 1997, this reflects an increase of 1.4%.

Table 1

Total cargo traffic (1993 – 1998)

YEAR	TRAFFIC(DWT)	CHANGE%
1993	7,997,000	
1994	8,345,000	4.35
1995	7,973,000	-4.46
1996	8,694,000	9.04
1997	8,442,000	-2.9
1998	8,559,304	1.39

Source: KPA annual bulletin of port statistics, 1998

2.3.2 Dry bulk cargo

For the past five years, the port of Mombasa handled an average of 5 million metric tonnes of dry bulk cargo while the port of Dar es Salaam handled an average of 1.8 million metric tonnes and Durban handled 28.5 million metric tonnes in the same period.

Table 2

Dry Cargo Traffic in the three ports ('000) Metric tonnes

	Mombasa	Dar	Durban
1994	4,257	2,071	25,000
1995	4,355	2,085	26,250
1996	4,908	1,666	31,500
1997	6,164	1,836	30,200
1998	5,721	1,820	30,800

Source: Consolidated Statistics

As can be seen above, cargo traffic is steadily increasing at the port of Durban compared to Mombasa while it was decreasing at the port of Dar es Salaam

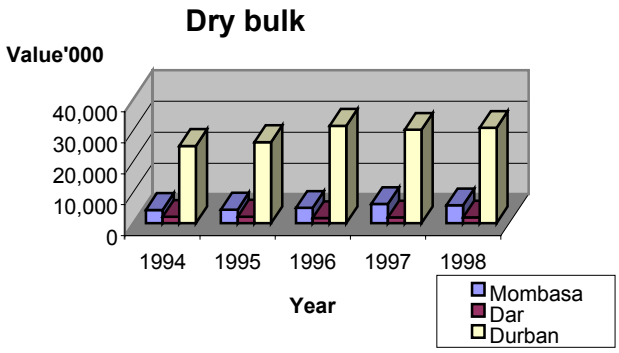


Figure 1

2.3.3 Transit traffic

Transit traffic is increasingly becoming a major component of total port throughput. The port enjoys a large percentage of the market share of the transit traffic generated in the region over the other competing ports. When it comes to handling of transit cargo, in case of general cargo the transit cargo is stacked in the sheds separately from the local cargo. There are no dedicated facilities for the containerised transit cargo.

Transit cargo declined due to civil war/instability in the Democratic Republic of Congo and the embargo that was imposed on Burundi. Transit cargo was 1.13 million tonnes in 1998 compared to 1.34 million tonnes in 1997. A decline of 15.7% or 0.21 million tonnes was recorded (see appendix 1 for full details to different countries).

Transit traffic had grown rapidly through the port for the last five years reaching its peak at 2.8 million tonnes in 1996 compared to 1.9 million tonnes in 1995. There was, however, a decline of approximately 53 % in 1997. This was because goods landing in Mombasa had to pass through Uganda and Rwanda, which were viewed by DRC as hostile because of the presence of their troops in the nation. This gave the Ports of Dar es Salaam, Beira and Durban a favourable position with regard to cargo moving to DRC.

Uganda, which imports goods through the port of Mombasa and sells in Central Africa, had to cut down imports owing to the fall in business in these countries.

Table 3

Transit traffic (1993-1998)

YEAR	TRAFFIC(MT) Mombasa	CHANGE%
1993	1,126,431	-
1994	1,710,342	51.84
1995	1,936,787	13.24
1996	2,837,197	46.49
1997	1,342,554	-52.68
1998	1,126,832	-16.01

Source: KPA annual bulletin of port statistics, 1998

Amongst the transit countries, Uganda is a major user of the port of Mombasa accounting for about 23 % of the port's total transit traffic. This is likely to increase in future due to the country's continued recovery from the effects of war. Ugandan traffic through the port of Mombasa rose from 303,200 tonnes handled in 1991 to over one million tonnes in 1995. The Uganda traffic through the port of Mombasa still stands at one million metric tonnes compared to 95 000 metric tonnes through the port of Dar es Salaam though there are rumours that Ugandan traffic through Dar es Salaam increases by 10,000 tonnes a month.

2.3.4 Container traffic

Container traffic through the port has been rising steadily over the years from 144,137 TEU in 1993 to 248,451 TEU in 1998 an increase of 72.16 % over that period. The figure stood at 230,698 TEU in 1997 and 248,451 TEU in 1998, an increase of 7.7 % over 1997. Container statistics for the imports stood at 118,651 while the exports were

116,537 TEU in 1998. Transhipment was at 13,263 TEU, a drop of 8,138 TEU from the 1997 figure. The increase in container traffic through the port can be associated with growth of containerisation in East Africa.

Table 4

Container Traffic (1993 – 1998)

YEAR	TRAFFIC(DWT)	CHANGE %
1993	144,137	-
1994	160,293	11.2
1995	200,537	25.1
1996	217,028	8.2
1997	230,698	6.3
1998	248,451	7.7

Source: KPA Annual Bulletin of Port Statistics, 1998

A comparison made on container traffic between the port of Mombasa and the ports of Durban and Dar es Salaam, shows that, in 1998, the port of Durban handled about 80,000 TEUs a month, while Mombasa and Dare es Salaam handled on average 20,000 TEU and 9,000 TEU a month respectively. The container traffic in Durban has increased rapidly over the years and this is because the port has a better availability of equipment and a capacity to handle one million TEUs in a year while Mombasa has a capacity to handle 250,000 TEU in a year.

Table 5

Comparison of Containerised Cargo

	Mombasa	Dar	Durban
1994	160,293	90,450	780,000
1995	200,537	98,559	890,000
1996	217,028	98,906	940,000
1997	230,698	103,461	980,000
1998	248,451	109,528	980,000

Source: Consolidated statistics from the three ports.

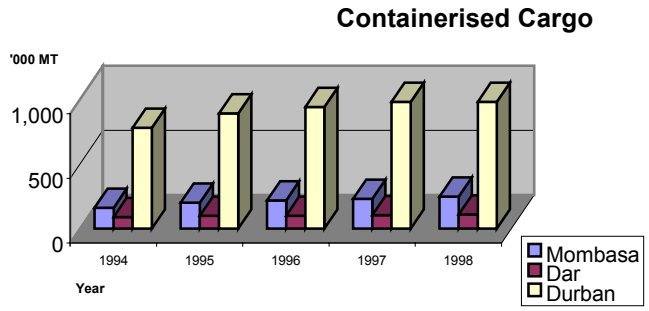


Figure 2

2.3.5 Port productivity

The productivity of a port is very much dependant on several factors, among them are the number of people that are employed in a gang, the type of cargo handled, the condition of the storage area, the stowage factor and the type of cargo that is being handled. The major indicators for productivity will in this case be the gang productivity.

The gang output for both general and containerised cargo has an average of 247.4 tons per gang per shift. The container productivity in Mombasa has gone down and it stands at 5 moves per hour compared to Dar es Salaam with an average of 9 moves per hour and 14 moves per hour for the port of Durban. There are, however, promises that the container moves will be improved to 10 moves per hour in Mombasa. The results are yet to be realised.

Table 6 below shows different productivity factors at the port of Mombasa for the berth occupancy for both general cargo and containerised cargo.

Table 6

Productivity trends in Mombasa (1994-1998)

Productivity Factor	1994	1995	1996	1997	1998
General cargo Tons/gang/shift	230	253	257	247	250
Berth occupancy (%) Container	71	77.8	69.4	69.7	65.3
Berth occupancy (%) General cargo	70.3	60.7	49.3	66	63.1

Source: KPA Bulletin of Port Statistics, 1998.

2.3.6 Inland clearance depots

In recent years the port of Mombasa has developed rail served Inland Clearance Depots (ICDs) in Nairobi with a capacity of 180,000 TEU per annum, Kisumu with a capacity of 15,000 TEU per year and Eldoret towns of Kenya. These depots are connected to the main port by road and rail. The aim of these extensions was KPA's need to bring its services closer to the port users from the hinterlands upcountry and the landlocked countries with the dire need to cut down costs of transport.

The ICDs offer services similar to the main port but they are mainly for the distribution and consolidation of cargo. The forecasted economic benefits of these ICD's are:

- To hold in custody any container loads that were not cleared or moved to the stacking pack.
- For storage of empty containers and to carry out repairs of these containers.
- To ease congestion at the main port by serving the Western Kenya region, Northern Tanzania, Uganda, Rwanda, Burundi, northern DRC and southern Sudan.
- Help reduce container dwell time.
- To reduce transport costs and increase competition.
- Generate employment.

- Market the port of Mombasa and save port users travelling time and expenses.

It is surprising that despite the fact that these depots are well known to most people, most customers prefer to clear their cargo from the main port.

2.4 The rail network

When the East African Community collapsed, Kenya Railways Corporation (KRC) was formed as a parastatal organisation for the provision of rail and marine services. The railage of goods and passengers in Kenya is still under the monopoly of KRC, following its constitution under the KRC Act ch.397, more than two decades since KRC took over from the defunct East African Railway Corporation (EARC) in 1978. The company is currently legally exempt from the provisions of the State Corporation's Act.

Performance of the rail transport sub sector is dependent on the management of KRC that has been greatly criticised as a 'money-guzzling' organisation. This is based on the argument that the corporation freight tonnage has drastically fallen over the years and stood at 1.6 million tonnes per year in comparison to 4 million tonnes reported in 1990/91. Passenger volumes have reduced as a result of the increased competition from the bus operators. In an attempt to survive, the corporation has been restructuring the work force to maintain a productive workforce of about 8,400, which now stands at 14,900.

This is the major outlet from the port of Mombasa. It has a network with a capacity to move heavy and bulk cargo inland and over long distances since it is a cheaper mode of transport. Rail transport provides an important and strong link between the producing and the manufacturing centres. These links are inland container depots on the one hand and ports on the other hand.

It has a network of 2,114 km of track centred on the main route from Mombasa to Nairobi and Uganda. The main line is 1083 km from Mombasa via Nairobi to Malaba linking Uganda Railways. Principal lines are Nakuru to Kisumu 216 km and Voi to Taveta 128 km. There are minor branch lines to Nanyuki 235 km, Nyahururu 77 km, Solai 42 km, Kitale 64 km and Yala/Butere 69 km. There are 198 locomotives in total both mainline and shunting locomotives, in the fleet run by the Kenya Railways. Of these, 44 are inconsequential having been stabled because repairs are very expensive and the wagon turnaround currently stands at 28 days.

Table 7

Wagon Availability

Wagon Type	Total Number
Covered(Goods)	2,942
Oil Tank	471
Livestock	268
Open high sided	552
Open low sided	1,305

Source: KRC annual reports 1996/97

There are a lot of inefficiencies that can be associated with its inflexibility, poor management, ageing infrastructure as well as short-comings in the maintenance programmes of its rolling stock of both line and equipment and is, therefore, on the verge of collapse. These are discussed in depth in the preceding chapters.

Magadi soda, a soda ash manufacturer in Kenya is a major customer of KRC. They have an established privately owned line of 146 km managed by Magadi Rail but is serviced by the KRC holding lines between Konza and Magadi and run trains between Magadi and Mombasa. Magadi rail pays KRC trackage rights and hires locomotives from KRC to supplement their owner user wagons. Other major customers of Kenya

Railways are Insteel (K) Limited, Roofing (U) Limited, MetalBox (K) Limited, Galsheet (K) Limited, Mukwano, Transami and freight forwarders.

The KRC implementation of the UNCTAD's advanced cargo information system (ACIS) programme of the rail tracker system has 15 remote data capture terminals installed throughout the network to track cargo movements.

2.4.1 Sharing of facilities and the use of block trains

KRC and Uganda railways have worked out an operating system between the two corporations detailing the operational working relationship between them. The interchange of wagons and locomotives, hire charges and bias for setting transit tariffs are outlined.

KRC operates block trains from Mombasa to Kampala (Uganda). This is where a full load is moved all the way as a whole unit without breaking it or marshalling. This ensures faster transit times and easy monitoring of the train. Running of block trains also facilitates faster wagon turnaround and better utilisation of resources.

2.4.2 The rail tracker system

This is a system that enables the tracking of loaded wagons from the origin to the destination. It enables the monitoring of a customer's goods from the port of Mombasa to Kampala. Rail tracker is a wagon-tracking programme that provides an accurate online report regarding each loaded wagon at any time on its journey. This system enhances security of transit traffic enroute. The railway police are connected to the rail tracker to check the sensitive goods. This system has not reached out to the general public or cargo interests because of the heavy costs involved.

2.4.3 Inland waterways/ marine services

Lake Victoria is an important conduit for transit traffic to and from the landlocked countries. In Uganda, maritime transport services, provided under the Uganda Railways Corporation (URC), contribute 40% of the local revenue to the corporation. The wagon ferries on Lake Victoria are used for both cargo and passenger transport.

The Railway Corporation also governs the network via Kisumu onto Lake Victoria, an inland waterway, by wagon ferries tapping the market. The wagon ferries on Lake Victoria link Kisumu and Mwanza to Port Bell in Jinja. According to the annual report, (KPA p.8, 1997), the lake Victoria business is loss making with limited capacity. Both the passenger and cargo ferries are on the decline and, as a result, there is a small drop in the earnings on the waterway business. The ferries do not have sailing that are guaranteed on a time schedule, hence unreliability/inflexibility of this service. There is ongoing consultancy with International Development Agency (IDA) to see how the business can be sustained.

2.5 The road transport

Most transport users have turned to the road system as the rail network is on the verge of collapse. Road transport, being of a recent origin, is being used on a large scale and is the backbone of the country's transport system for the carriage of high value general cargo. It plays a major role of complementing other modes, by distributing and collecting cargo to and from consignees/consignors not directly connected to rail or inland waterway. Most traders prefer to use the road because of the amenity en route and its quicker transit time.

This is the most flexible and commonly used mode of transport in the region and it offers transport services for both cargo and passengers and is very well interconnected. Road transport is in the hands of private operators provided mainly by Kenyans who

own trucks for transport and trade. The truckers are under an umbrella organisation of the Kenya Transport Association (KTA). The main road network is about 151,585 kilometres, of which 8,600 kilometres is tarmacked, 27,000 kilometres is gravel and the rest is earth. 12 % of the total network are international/trunk roads, 14% are primary roads and 67 % are secondary and minor roads while 1% are special purpose roads. The major routes are Mombasa to Isebania to Mwanza and Birahamulo through Tanzania to Rwanda (1864) kilometres and Burundi (2156) kilometres with a transit time of 20 days. Another route that has a good potential and could be cost effective if well developed is the road /rail from Mombasa to Kisumu and Kemondo bay to DRC, Rwanda and Burundi, giving good intermodalism options.

The main routes for road transport from the port of Mombasa to the hinterlands and land-locked countries are Mombasa-Malaba-Kampala (mostly known as the great north road), Mombasa-Busia-Kampala, Mombasa-Isebania, through Tanzania to Rwanda and Burundi.

2.6 Air transport

Air transport is used for the high value and sensitive cargo as part of the logistics management and just-in-time inventory. The high cost of this type of transport is compensated by the low inventory that is kept in store, which reduces money locked in working capital.

Kenya is served by four airports of international nature, located in the towns of Kisumu, Jomo Kenyatta International Airport in Nairobi, and Moi International Airport in Mombasa and lately Eldoret International Airport in Eldoret. The Kenya Airports Authority, a parastatal body of the Government of Kenya, manages these airports. The main kind of freight concentrated in air transport is horticultural products, mainly to Europe. Jomo Kenyatta International Airport has a large concentration of airfreight and

a fully computerised freight terminal managed by Kenya Airfreight Handling Limited, a subsidiary of Kenya airways.

2.7 The Kenya pipeline

This is a parastatal body of the government of Kenya that was founded in 1973. The main objective was to establish an oil pipeline network. It pumps 66671cu.metre/minute through Mombasa to Nairobi, Nairobi to Eldoret and Sinendent to Kisumu at 2500 cu.metre/minute. Kenya Pipeline charges a client tariff, a return on capital for reinvestment. It also offers Oil Marketing companies a mode of transporting petrol products.

2.8 The Northern Corridor Agreement

International law, through the relevant United Nations conventions, provides the land-locked countries with the rights of access to and from the sea, as there is a need for these countries to safeguard their security and their domestic markets. There was a need for arrangements for co-operation between land-locked countries and transit countries both formal and bilateral as well as regional transit agreements and this is what brought about the Northern Corridor Transit Agreement (NCTA).

NCTA was signed in Bujumbura, Burundi in 1985 and thereafter ratified in 1986. The signing of this agreement took into account other regional arrangements like the Preferential Trade Area that was transformed into the Common Market for East and Southern Africa (COMESA) treaty recently. Transit Transport Co-ordination Authority (TTCA) programs are in total harmony with other regional and intergovernmental organisations and COMESA.

NCTA has nine protocols that consist of provisions laying down the principles relating to

- The right for the member states to transit through the territories of other member states.
- Identification of transit routes and facilities.
- The use of maritime port facilities.
- Customs controls, documentation and procedures.
- Transit transport operations by road and rail.
- Handling of dangerous goods.
- Assistance of foreign transit agencies and employees of member states.
- Third party motor vehicle insurance.

This agreement expresses the good will and commitment to a regional approach in facilitating the smooth flow and cost effective movement of transit goods along the northern corridor. So far, the agreement has improved allocation of resources, and competition among the regional trade community. Activities of different players, governments, and donors from private sector have been facilitated through co-ordination.

NCTA addresses such main issues as the free competition from other member states by promoting market oriented policies and practices and restructuring of the transit transport sector within the northern corridor. It offers a framework for mobilisation of resources for the rehabilitation and maintenance of transit transport infrastructure within member states.

NCTA has a provision for the control of the overloading of heavy goods vehicles (HGV) and sets axle load limits and HGV technical specifications throughout the sub Saharan region. This has come into force in Kenya and there are installations of weighbridges and the exercise to impose heavy penalties for overloading. It helps member countries to harmonise and streamline road traffic legislation and sets a forum for discussing and

sorting out issues pertaining to logistics of transit cargo along the northern corridor and finally to the simplification of transit documentation.

2.9 The Kenya Revenue Authority

This is a crucial government parastatal body, which holds the customs and excise departments. Revenue collected from customs duties constitutes the largest single source of income to the Government. A complicated custom tariff has been created to protect indigenous industries and charge custom duty on imports and generate resources for Government expenditure. Many bureaucratic formalities have been created which the importer/export has to fulfil before a consignment is imported or exported. Customs procedures have been blamed for the slow and unsafe movement of goods to and from the ports. This is discussed in detail in chapter 4.

CHAPTER 3

ANALYSIS OF THE SHIPPERS' EXPECTATIONS OF SERVICE PROVIDERS

3.1 The port users' satisfaction

Although ports have existed as gateways of countries, beyond this, their role is to provide services to their customers. Such services will imply efficient and productive cargo transfer to and from a ship. One of the ways of achieving this is by the port management to maintain high levels of efficiency at work and their equipment. The major port users will consist of shipping lines, importers, exporters, or CFAs as their representatives, who will expect effective and efficient operations in the port because these factors will affect the final costs of cargo.

The port is therefore expected to have an operational aim to give a sufficient level of services at the lowest cost. This service level will include ship and inland transport handling rate, cargo handling at the port and better port charges and protection of the goods against theft.

Due to changing technologies, the ports should adapt to these changes to maintain their efficiency and their customers. It can be noted that port capacity and efficiency can be achieved by standardisation and maintenance of cargo handling equipment to meet the demands of various types of ships and carrying out of periodic technical surveys of equipment procurement to assess if old equipment should be done away with or replaced by modern and efficient ones.

3.2 Concept of transport

It is clear that movement of goods does not really change the appearance of them. Many people do not think that moving an object from A to B is adding value to it. It is

important to note that the goods are of little or no value unless they are available at the right place, at the right time and in the right form.

Transport plays an important role in facilitating trade even though it bears a heavy cost. There are effective requirements of quality and management of quality services. In the past, the transport companies were production oriented and a minute number of them have made efforts to make their services focused on the customer and the market. Today, we can see that companies are requiring more specialised logistics solutions. Companies are working hard to increase the speed of throughput and to reduce unnecessary use of resources. This implies that the suppliers have to make more frequent deliveries in small quantities and perform these deliveries on short notice. This is a challenging task to the transport providers.

The major functions of transport, as will be discussed here, will include the flow of information in connection with the transport and the physical movement of goods, that ensures that goods are moved to their destinations. This is where transport costs are accounted for and customer care is catered for.

The input involves transport directly from the customer (sometimes using a freight forwarder as an agent) to the ship's terminal. Multimodal transport may not always satisfy the customer/shipper; the fact that there are shifts from one mode of transport to another may mean that the goods will take a longer time to reach the customer.

In the present time, we can see that most transport services are becoming more and more customer oriented, moving goods on demand and, therefore, the transport providers have to offer customer designed transport. What is important to note is that different customers have different needs and, therefore, require to be treated differently. For example, there could be customers who want to pay as little as possible for a transport

service paying no due regard to the time consumed on the way. On the other hand, time may be a critical factor when choosing the transport mode to use. Some customers will make more demands than others will and this means that they are willing to pay for the services. It is important to see to it that the customers, who demand less service, should pay less. A transport provider must be able to meet the different needs of the different customers.

Mueller states that any shipper makes tradeoffs between price and delivery speed. If the shipper needs an urgent delivery the next day, he is willing to pay a higher price for expedited service, whether by air or over- the- road. Service quality, however, is what the shipper is least likely to be willing to trade off. The quality of service and its reliability is what most shippers would wish to have (*Mueller, 1999*).

3.3 Frequency and flexibility

Individual customers will require a high degree of flexibility of transport service to meet their needs and supply and distribution of goods will need to adapt to these processes. If road haulage can be improved in Kenya, given that it is in the hands of private operators, it would meet the Just-in-time and door-to-door services could be provided to the customers.

A transport network moving on a regular basis will make it more available to the shippers to adapt to. A road haulier will provide a high flexibility compared to rail. The trucks do not have scheduled departure times and they simply pick up any type of cargo and start their journey. Rail transport on the other hand waits for cargo to fill the wagons, which gives limited services from the port to the hinterlands. In this case the customers in Uganda can only take their cargoes to and from the port of Mombasa two times in a week when the blocks trains are operational.

Road transport moves cargo daily from the port, so if the port was to be operational both day and night it would ease congestion at the port. Rail transport, on the other hand, does not offer attractive transport choices to destinations over the northern corridor since the availability of this transport is poor, giving road transport a stronger edge. If the rail transport can improve the services by increasing regularity and using less time, it will have improved economic effects. First of all, it will save the time for ship turnaround and give the customer an improved transport package.

Frequent departures of a transport mode will satisfy or impress the shippers. In this case, if the service is well co-ordinated with connecting services and offer high frequencies of departures, the services would be flexible and, therefore, increase the capacity of transport. It can be seen that some transport modes are neither reliable nor flexible, they have poor connectivity. A shipper will want to use the most reliable and flexible mode in terms of price, schedule, delivery speed, frequency and route.

3.4 Reliability

From the author's point of view of the road and rail networks in Kenya, the rail service is a less reliable service provider when compared to road services. Because of the slow wagon turnaround and poor schedules, which are not available to meet the customer's, demands, delays are rampant giving an impression of low reliability. Rail reliability can be increased by the Kenya Railway Corporation making agreements with truckers to move more cargo/offer substitute transport in case problems arise, or by them purchasing more wagons.

3.5 Door-to-door services

Rail transport is a very inflexible mode of transport compared to road. The rail network's final destination is either at the ICD or rail terminal while road transport delivers the goods at the customer's doorstep. Even though times have changed the rail

capacity has not, and with no lines having been extended to the customers as yet, road haulage still takes the lead in offering door-to-door services in Kenya. The customer would therefore prefer to buy road transport because of the assurance of his goods being at his doorstep when he requires them. It is important to note at this juncture that customer satisfaction encompasses complete door-to-door service including positioning the cargo units, trucking, cargo handling, insurance, customs clearance, administration and cargo information.

3.6 Time

The value of time has greatly increased in this era. It is often said that time is money, therefore, a saving in time always constitutes a saving in money. The customer would demand that the goods reach him at the right time so that they do not lose their value. The road haulier can more easily give such an assurance, given that the truckers can easily access the customer's premises. The nature of rail network will consume time because of double handling of the cargo to the customers' doorstep by trucks.

Transport costs can be minimised or reduced by reducing the railage or haulage time, or minimising the turnaround time at the port through speeding up of both the customs and documentation procedures and reducing the hinterland lead time. Other ways that a good transport time would be achieved is by using standard containers. In addition, improving the shore and cargo handling equipment and systems, improving the handling time at port and working more hours in the day, will also achieve a better transport time.

Road transport, in most cases takes lighter and more valuable cargo. Some customers/cargo owners will tend to have valuable cargo and will look for the fastest transit times; in this case, they will use road haulage rather than rail. Also in movement of perishable goods to and from the hinterlands, e.g. fruits, vegetables, fish, dairy

products etc, most customers would prefer to use the road haulage because it is a fast mode.

3.7 The costs for transport

Customers demand the right cost of transport service and if, for instance transport time is longer for rail than road, it is expected that the cost for rail will be lower than the cost for road transport. Most customers who are price sensitive will be the ones who have low value cargo and they are also less sensitive to the transit time. They will tend to look for the cheapest mode of transport. However, rail services may not be able to accommodate all the customers owing to its diminishing infrastructure as discussed in chapter 4.

Cost constraints may force most customers to consider the option of changing between different modes of transport. Some customers prefer to use rail for the long haulage and road to the interior, to distribute the costs economically between the two modes, where road is often considered to be the more expensive mode. The costs may be cheaper or higher when switching between these two modes of transport.

3.8 Safety and security

Customers normally require their cargo to arrive in good condition. For the service provider on the other hand, delivering the cargo in this condition reduces or eliminates his liability altogether. If safety of transport would be analysed in terms of accidents, both the road and rail are prone to accidents. Long distance road hauls contribute to a lot of road traffic accidents mainly because the drivers are fatigued or the vehicles are aged or not well maintained. Accidents on the rail, especially derailing, are rampant in Kenya because of the factors explained in the next chapters.

Damage to cargo can occur during shifting of cargo from one mode to another. This is common with rail cargo owing to its inflexibility. The efforts that can be made to reduce the damage may have an impact on time and costs since expensive handling equipment will have to be purchased and this will make the combined transport less attractive. Customers expect that the damage caused to the cargo is minimised by an improved quality of handling and that cargo handling becomes less exposed to human error.

Security, on the other hand, raises the question of how safe the customer's cargo is on the road or rail or even at the port. There have been many recorded incidents of short landed cargo, pilferage and theft, on the highways more than the railways. The customer will expect that his cargo be in the right form/condition/amount. Theft is rampant at the interstate checkpoints and especially when cargo documents are not in the right order and hence the cargo has to be withheld for a longer time till the right documents are processed. This is discussed further in the next chapter.

3.9 Environmental impact

People are becoming more and more serious and strict on the environment in which they dwell. Road haulage pollutes the environment both in terms of noise and air by emitting wastes. The carriage of dangerous cargo in these modes may have an impact on the environment if an accident occurred. Kenya and countries around the Great Lakes region are not very conscious about the environment, although there are set regulations on the carriage of dangerous goods, especially on the road network. The costs for carriage of these goods will be higher because of the danger they may pose to nature and environment.

Damage to the environment has increased as a result of emission of wastes and expanding land transport in order to cover the demand for additional transport capacity. The relative energy consumption of a truck is higher compared to rail. The railway lines

would be more cost effective if they were well developed because it is friendlier to the environment because it has less emissions that pollute the air, lower energy consumption and a lesser increase of infrastructure in comparison to road.

3.10 Government policies

The government's decision to increase capacity on the road or rail requires a lot of investments. One thing to note is that the deterioration of the road and rail networks is due to the poor management of the structures as well as the lack of capital to maintain these transport systems. The government collects petrol levy from the users but it has not been able to maintain these networks, nor is it accountable for the money. The rail on the other hand has never expanded even with the need for customers to use it. If the government were to get funds to maintain these transport systems it would take a long time to recover capital for these investments which have a poor return on investments. The interest rates would cover a large portion of the annual costs of these systems.

3.11 Value added services

"…The shipper is demanding value added services" (Mueller 1999 p.381). The satisfaction of the customer relies on the `value for money ´ or the quality for cost. Value added means the value newly created due to an economic activity. The ultimate customer service level is the one that will give the customer maximum value added. (*Ma, 1999*). To provide value added services, the shipper will expect the transport operator to give such services as sorting of goods, storing and labelling them, consolidation of services, warehousing, logistics planning and intermodal inland co-ordination between different players, for instance the shipping lines, road and rail carriers etc.

From the customers' point of view, it is much easier to buy road transport for transporting goods. This can be achieved by offering a comparable level of

convenience, which means taking care of the complete transport from the time the customer calls for transport until the final delivery at the receiver's end. Customer satisfaction should comprise a full door-to-door transport including positioning of cargo units, trucking, cargo handling, insurance, customs clearance, administration and information.

3.12 Technology

The shipper will demand to get information on the state of the cargo routing, transit routes etc. This will be effective if the technology is implemented in such a way that it is able to track cargo movement from the port through the different modes to the customer. The rail tracker system is quite effective in tracking the movement of cargo through the rail. The customers can access through their computer networks and be able to see where their cargo is. The road tracker network has not been implemented yet in Kenya and this has made it difficult for the customers to know the status of their cargo.

Today, there is an advanced use of communication technology for moving information from one place to another. This ranges from phone, fax, e-mail, Internet and Electronic Data Interchange (EDI). The customers expect that these services would be extended to the customs for clearance of goods as soon as they arrive at the port.

Mueller *(1999 p. 381*) Summarise these expectations by giving the seven R's. This means that the customer needs to get his right goods, at the right time, on the right schedule, at the right form, in the right quantity, right price and right place. Transport or logistic companies should strive to be customer focused. The deciding factor will be the company's ability to execute the business process to deliver the value and quality his words promise. This calls for a logistics process to satisfy the customers and gain a competitive advantage. Improving the service quality increases customer satisfaction and builds customer loyalty. No company can cover the entire logistics supply chain by

itself because it consists of suppliers, producers, distributors and consumers. What is important is to weave all these parties together into an efficient transport network that provides superior services.

CHAPTER 4

DRAWBACKS IN THE PORT, ROAD AND RAIL SYSTEMS

The chapter examines the drawbacks in all the systems from port, rail and road systems and ineffective ways in handling of cargo. Transport corridors are important for the countries, especially those with the disadvantage of being land-locked. Slow growth of foreign trade in East Africa is responsible for the slurred growth of services. The fact that there are modern ships with high speed and a high carrying capacity of goods enhances external trade. A large amount of money has been invested in many projects whose goals are to enhance transport corridors.

4.1 The Port

The problems at the port of Mombasa seem to be as old as the port itself. As the Port of Mombasa strains to keep hold of its long enjoyed position as East Africa's star port, there are still many issues to be resolved. These range from ageing equipment, inefficient management, corruption, lack of maintenance policies and spare parts and inefficiency that have influenced the transit time, the costs in transport and the customer's expectations, which have threatened to drive away business further south.

4.1.1 Management of the port

The major problem could be the way the port is run. In some countries, such as China, the management of regional ports is put under the jurisdiction of the provincial or municipal governments and substantial autonomy is granted to individual ports in arranging their day to day running of services. In Kenya the case is different, the administration of the port of Mombasa, for instance, is directly under the supervision and the influence of the state machinery overseeing the parastatal institutions, under the control of the central government, and under the ministry of transport and

communication.

The government, however, removed KPA from the Corporation Act giving KPA management a free hand in handling its day to day operations. This has, however, not worked well because major decisions concerning the authoritys' operations and management are still made within the central government. This has weakened KPA's ability to adjust to the fast growing forces of change in the market.

4.1.2 Cargo handling equipment

The maintenance of equipment is very important for the port. It is important to note that the condition of the equipment at the port has been a major concern. The port faces many deficiencies of equipment in the capacity and the productivity of this cargo handling equipment. This has led to vessel delays and longer dwell time of cargo that on most occasions leads to congestion of the port.

The port of Mombasa uses old and outdated ship to shore gantry cranes in the handling of cargo. This equipment often breaks down and the replacement or refurbishment of the cranes has been an issue of contention in the port. Taking of preventive measures other than basic measures to maintain the equipment is crucial. There is an overly low supply of equipment and spare parts, which are expensive and this slows down the work. Basic levels of maintenance of the equipment have resulted in congestion. The frequent failure of equipment has in turn had an effect on dwell time and productivity. The operations in the handling of containers in the port are slow and inefficient. One major concern is the container handling equipment that has slow speed. This has forced some vessels to use their own gear to discharge cargo at the berths near the container terminal, causing delay.

Another issue with the equipment of the port is that the stock is not adequate when it

comes to capacity. The port has old inventory of equipment whose performance is low because of age. Because of inadequate numbers, it is difficult for the port to service the equipment under increasing port business.

A comparison of the productivity levels of the ports of Mombasa, Dar es Salaam and Durban reveal the following:

Table: 8

Comparison of Productivity levels

Productivity Factor	**MSA performance**	**MSA target**	**Dar**	**Durban**	**Recommended**
Berth occupancy	64 %	-	55 %	50 %	50 %
Dwell time	22 Days	10	36 days	3 days	3 days
Moves/SSG/hour	5	15	9	14	25
Lifts/ship hour	13	20	13	25	25

Source: Consolidated from THA and KPA bulletins, 1998

When there is need for cargo handling operations, especially when transferring cargo from either the quays or yards and loading into trucks or rail wagons, there is always a shortage of equipment.

The labour force is faced with challenges as a high degree of technical expertise and skills bear a yardstick in measuring their productivity and efficiency. Gangs, who do not have good skills for the specialised maintenance and operation of the equipment, usually perform the cargo handling. The dockers have very little motivation to work and they are not well supervised and organised. This has affected the way they handle the equipment and barring the way the port equipment is performing.

The annual capacity of the container terminal is 250,000 TEUs when it is assumed that

the dwell time is 10 days and containers are stacked three high. In 1997 and 1998 the cargo through the container terminal was 230,698 TEU and 248,451TEU, which gives a utilisation level of 92% and 94% respectively. The recent utilisation explains why there have been high levels of congestion as can be seen in the port by the containers being stacked in non-specialised areas.

The procedures at the port of Mombasa are very slow and ineffective. The movement of cargo from the port to road transport requires 23 steps of processing documents, ranging from discharge to the shed, billing and collection of revenue, and delivery of cargo to the gate. These steps exclude the customs procedure, which has 24 steps of its own, as will be seen later in this chapter. The procedures lengthen cargo dwell time, increase the charges at the port and also increase the probability of damage to and pilferage of cargo.

Repetitive checking of papers and cargo by different authorities is very common involving physical verification, checks and cross checking of these documents, which consumes a lot of resources and time. This is because of the lack of information flow between the port users.

4.1.3 Pilferage and lack of security

The management at the port, coupled with political interference with operations of KPA, has played a major role in the decline of services and overall credibility. These range from the inadequate system of security, to ineffective handling etc. Reports have indicated that in 1995, KPA received Ksh 80 Million worth of claims lodged by shippers while the claims for missing cargo between 1991 to 1995 was US$ 2.7 million *(Liganga, 1998, 7).*

Containers packed with high value goods are known to vanish from the port. Most observers have had the view that customs verification has favoured the schemes of

corrupt officials and thieves', intent on lifting valuables from the containers. Customs officials verify containers by seeing what has been declared and ensuring that import duties, sales tax and other duties payable to the government are correct. A merit 'men of ill' tend to have, is when during verification, security seals are broken, goods checked and the seals are replaced by Customs. These entities will notice this lax security and take full advantage of it, after all, the only evidence of security is the seal. It is worth mentioning at this juncture that apparently officials undertake no such verification at the port of Dar es Salaam. It is also very easy for businessmen and officials to collude and falsify documents to have the goods smuggled out of the port. This happens when there is collaboration with the security that arranges to smuggle the goods out of the port without the right papers.

The problem gets worse when the port authority does not help the shipper by giving supporting documents to the loss or damage to get compensation from the insurance. The above problems can be solved if KPA embarks on computerisation and tracking of cargo and containers. The computerisation of the port that started some time ago is still not complete.

The 'sandwiching' of cargoes, that is, storing of both general cargo and containers at the same place at the port makes it difficult for the cargo to be traced or monitored. At the port the containers will be found packed in the available space almost everywhere amongst other general cargoes. This makes it easier for the cargo to either be damaged or be pilfered without it being tracked.

4.1.4 Surcharges and delays

KPA's inability to streamline services at the port results in a crisis causing delays and congestion. When shipping lines incur such costs they pass them on to the shippers in the form of surcharges making the Northern Corridor less competitive.

This has led to persistent calls by the shippers and other players in the industry to improve the operations.

To press for efficiency in cargo handling at the port, shipping lines introduced a delay surcharge. This surcharge is aimed at helping them recover losses caused by delays. The delay in berthing ships is attributed to the long time it takes to discharge cargo. Congestion, however, is attributed to damaged road infrastructure, the rains and on going rehabilitation of some of the berths. The core problem, however, is the equipment availability and serviceability and poor management. This has an impact on both the shippers and owners in costs and some of them have resorted to use other ports.

4.1.5 Stuffing and stripping

Another cause of delay can be associated with the operations related to the stuffing and stripping of containers where the exercise is done in the open area. When it is rainy weather the exercise cannot be done since it relies on good weather conditions. The procedures with the KPA, customs and the police have very many unnecessary checks before cargo is delivered from the port. The hours for working are not harmonised between these regimes and as the police only work between 8:00 AM and 5:00 P.M verifications of containers can only be done between these hours.

The dwell time in the port is long, which results in delays and congestion. At the moment the dwell time is approximately 22 days, which is explained to be as a result of formalities at the port and dilapidated rail and road networks as well as the shippers' or cargo owners' delay in lodging of documents for the clearance of cargo.

Congestion at the port will occur when the there is a lot of undelivered cargo at the port piling up and the pace at which this cargo is discharged from the vessels is higher than the pace of delivering it out. Mombasa has a record of port congestion because the port

does not have a capacity in space for storage of cargo and working space. Because congestion at the port is occurring frequently, the port should have contingency plans to curb or eradicate congestion from recurring.

4.1.6 Communication

Lack of communication regarding movement of cargo in port constitutes a problem. Port users have discussed inadequate interactions between themselves and the port authority because they are not well informed in advance of any changes to adjust their logistical activities. Information is usually passed through circulars, often delayed/not in real time. Shippers loose out in knowing the status of their cargo. It is common for a shipper to expect the arrival of a container, which is awaiting clearance in a terminal over a week.

There is also a great lack of proper co-ordination of activities between the port users, especially the shipping lines and clearing and forwarding agents. This is due to the poor distribution of their offices. The distance between the revenue offices of KPA and customs is about 4 kilometres, while the shipping lines and clearing and forwarding agents are located in town. The offices have poor telecommunication facilities for the co-ordination that should link them to KPA and the customs offices. Time spent to move from one office to another to be able to complete procedures that cost the cargo owners time and money.

4.2 Customs

The general purpose of various customs transit procedures is to provide the evidence that the goods have not entered, wholly or partially, the market of the transit country without paying duties and taxes (*Multimodal Handbook 1995, p.74*).

Customs apply measures on local and transit cargo, for instance bond verification, use of

customs seals, escort of goods and a time limit of 90 days for the export of these goods. To start with, the time limit is currently too short given that the present documentation procedures at the port are long. The customs procedures at the port are problems related to the organisation of the services provided by the customs and especially in the road traffic at the borders, which have got high traffic levels, for instance, the borders of Namanga, Busia, Malaba and Isebania. The customs offices do not have sufficient infrastructure to serve the increasing volume of cargo traffic. Customs officials lack adequate training and morale, hence they are very inefficient. There is great corruption in this particular sector that needs to be eradicated.

Delays in documentation mainly occur when documents are lodged with the customs authorities that are reluctant in performing their duties. According to Mboya, in his survey of the ports of Mombasa and Dar es salaam, an average of 60 % of total documentation time was taken up by customs (*Mboya, 1994 p.105*).

4.2.1 Customs bond

Insurance plays an important role in the provision of security required by the Customs and Excise departments in the processing of goods imported into the country for their disposal in the process of being moved to the hinterlands. This security is an indemnification of the revenue against the loss by reason of the improper use of the taxable goods and the possible non-payment of the proper duty. This is a guarantee to ensure that goods are properly processed and that any default, renders the guarantor liable. This kind of situation is not good for the importers, since the customers' money /investment is intended to yield some income and the fact that capital is tied up freezes the earning power and attracts an interest rate in case the funding was subject to overdraft conditions. Furthermore, the procedure for signing and sealing the bond is a very long process to the customers.

4.2.2 Documentation procedures

Societe General due Surveillance in Kenya does pre-shipment inspection of cargo. The main aim is to ensure that the correct value for import duty is assessed as soon as cargo arrives. The minimum taxable import goods in Kenya is done at USD $500 in value of the goods. When one submits documents to the pre-shipment inspection company, one gets a copy of a Clean Report of Findings issued with a Tax Assessment Notice to be lodged with the customs.

4.2.3 Customs clearance procedures

The custom forms used here are the following:

- C34 for transit and entry inward. This is used for goods arriving from the sea and includes the landed value of the cargo (CIF) and assessment of excise duty and VAT payable.
- C35 as transit entry outward for goods leaving the country via the sea.
- C 35A is a COMESA document that takes the place of the road manifest.
- C36 bond cancellation voucher lodged after transit goods have left the country.

The Clearing and Forwarding Agent (CFA) undertakes the declaration on behalf of the shipper to the customs. The CFA attaches the Bill of Lading and supplies invoice, copy of packing list, copy of logbook (in case of motor vehicles) and Mombasa Port Release Order (MPRO) containing CIF value, weight and volume, and date of arrival, which enables the port revenue office to calculate port charges. These are supporting documents to the appropriate entry forms prior to lodging the documents at the customs long room transit section in Mombasa. For transit cargo the CFA pays the Bond in Force (BIF) that constitutes the Excise and Duty and Value Added Tax as security bond before release of cargo by customs.

4.2.4 The Customs long room

The CFA lodges the documents and they are received at the transit counter. Entry details are keyed in the computer and a pool number is allocated to each transit entry. The examining officer allocates entries to Declaration officers. At declaration, the entry is checked to confirm tariff, duty paid and BIF. If these are correct and the BIF is sufficient, the entry is passed and given to an allocating officer who numbers the entries upon confirmation of the BIF register balance and the CFA gets a copy. The messenger delivers the entries to the collection clerk dealing with transit goods for approval.

The entries will then be passed to manifest officers in accordance to the ship's manifest where, if they correspond to the details, they are stamped and are forwarded to the Customs Distribution Office. The procedure takes on average five days.

4.2.5 The central distribution office

The senior collection clerk receives the entries accompanied by a set of MPRO and supporting documents listed for the purpose of making returns to the commissioner of customs. These documents are passed to the releasing officer who determines whether the cargo will be released directly, stopped for verification or sighted and released after ascertaining that the seal is intact. The CFA collects the forms and dispatches them to KPA port accounts where the entries and memos will be dispatched to the various sheds.

4.2.6 Customs verification

The verification for the transit cargo mainly involves sighting of containers and ascertaining that the seals are intact. The CFA arranges containers for verification and informs the parties involved during the verification exercise. The parties involved are the customs, Kenya police, KPA security, Criminal investigation officers and special branch and anti-narcotics who sight them and sign copies of MPRO. The CFA takes a

copy of the MPRO for onward releasing at KPA police station and loading bay clerks and gate pass officers and cargo is ready for delivery. It has been observed that the exercise of getting a customs official to undertake verification is difficult as they are also used for the local verification process, which is lengthier.

Analysts have concluded that with a computerised system, documents would be lodged straight into the computerised system with software that would calculate the rate for duty and VAT. Other charges for storage, penalties, handling etc would automatically be worked out. With EDI and a modern computerised system, a CFA would access KPA and lodge his documents on screen and take only the original documents for verification and stamping. This would save shippers a lot of time. This calls for the computerisation of customs and implementation of ASYCUDA.

4.2.7 The Automated System for Customs Data (ASYCUDA)

This is a computerised customs management system that covers foreign trade procedures. It handles manifests and customs declarations, accounting procedures, and imports and exports and transit procedures. It has a transit module developed by the ASYCUDA project to enhance the control of transit traffic by customs. It makes it possible for the principal, surety and designated sureties to keep track of consignments that they have guaranteed.

By enforcing customs control and monitoring of the reception of customs duties, it will increase government revenue. The clearing conditions for trade will improve since customs computerisation and rationalisation speed up clearance of goods and reduce delays in deliveries. This, as a result, reduces the overhead costs, which affect the cost of imports and price of exports.

4.3 Police Convoy System

Transit cargo is subject to random verification by the Customs and Excise departments. The containers that are verified are delivered without the original seals affixed from the place of origin. The customs, however, fix customs seals to replace the broken ones. When cargo is released from the port, it is the duty of the police to escort it from Mombasa to the borders and from the borders onwards to the other exit border points for transit to their destinations in the hinterlands/land-locked countries. These convoys are supposed to ensure that the transit cargo is not pilfered or diverted into the local market. This objective has clearly not been achieved yet since a lot of the cargo ends up in the local market. Furthermore, it has been argued that people (military personnel/police), who do not understand the documents that accompany the cargo, man the police roadblocks. The escort takes off on particular days of the week and more so there are delays in changing escort security personnel. This is a cause of delay in delivery of cargo since it hinders the smooth movement of transit cargo instead of facilitating it.

4.4 Diversion of transit goods

This happens when there are weak customs procedures and fraudulent practices involving the players ranging from importers, port officials, customs officials, escort police, insurance firms, CFAs and transport operators. Importers, trying to evade duty, declare their goods as transit cargo. Subsequently they divert these goods into the local market at fairly cheap prices. This can happen when the insurance companies provide fake transit bonds or fraudulent CFAs provide fake documents as evidence that they comply with the clearance and export of transit cargo, while in collusion with customs officers or importers. These goods are diverted into the local market when officials involved are bribed to provide fake documents.

The time limit for re-export of transit goods and cancellation of the bond is a maximum of 90 days. According to the law, there should be no extension of this period and the

goods can be seized. The customs have interpreted this law to their benefit. The customs officials can delay and prevent the processing of transit documents, which leads to seizure of goods and hence they are diverted into the local market.

Transit cargo can also find its way into the local market when dishonest traders and officials delay the processing of extension dates. The customs do not have an efficient mechanism of dealing with extension requests. Traders will divert cargo with the excuse that the cargo is likely to be depreciating if they wait for extensions to be effected. These goods are sometimes released into the local market before duty and taxes have been paid.

To survive the rules regulating imports, traders have found it favourable to declare their cargo as transit cargo to evade duty and then divert it into the local market at favourable prices, all at the expense of the local industries. This greatly defrauds the Government of revenue. The law states that the trader can only be allowed to divert cargo into the local market upon payment of duty and taxes, but this law has greatly been misused by officials, who allow cargo owners, willing to divert cargo, to do so.

4.5 The Road

The state of the trucks or trailers used on the Kenyan roads is poor. Most of them are old or often worn out quickly because of the roads and high tonnage they carry, yet they are not well maintained. Though there are continuous checks by the police, they have not managed to ensure well-maintained vehicles. Most trucks are purchased in the second hand markets. The Mombasa-Nairobi highway was built 30 years ago when traffic was low, with the heaviest trucks carrying approximately 7 tons. Today the trailers carry about 30 even up to 60 tons and hence there was a need to have regulations to limit the load.

The drivers employed on the roads for long hauls move for many days and nights and get exhausted on the way. Some of them have no experience moving such large vehicles on the main roads and all these factors combined have an effect on the road carnage. Deterioration of the roads due to El nino and a poor road maintenance policy is a burden because of cost in the transport industry due to heavy maintenance costs. The Mombasa highway, a major link to the interior and neighbouring countries for trade, was acutely damaged. Government bodies in the road sector have started putting things together to plan, rebuild and repair these roads. Donors have come up with specific conditions to be met by the Kenya Government before they can release funds. These conditions include forcing transport operators to comply with the axle load limit and a commitment by the government to engage contractors who can carry out a thoroughly good job.

An issue affecting the rehabilitation of the road sector is the misuse of funds allocated for this very purpose, which goes hand in hand with the type of personnel given the task of overseeing the implementation of the rehabilitation projects. The narrow highways and potholes due to overloading have caused major towns to be cut off and transport and freight services almost grinding to a standstill. To ensure competitiveness of the goods within and outside the region, there is a need for measures to avoid overloading of Heavy Goods Vehicles (HGV). Transport providers have been forced to control the carriage of cargo to save Kenya's battered roads, hence the axle load limit.

4.5.1 The Axle Load Limit

The axle load limit came into effect in October 1998 under the traffic act cap.305 implemented in totality to ensure that overloading is eliminated. Another reason for implementing the Axle Load Limit was the donor pressure to ensure further road funding as they were funding roads that were rapidly wearing out. Weighbridges were, therefore, constructed at strategic places to check that overloading. These weighbridges, though functional, have been subject to corrupt officials accepting bribes to allow

overloaded vehicles to pass through. There is reluctance of the administration to sack or take punitive measures against these officials or enforce discipline on the transporters.

Due to the axle load limits most transporters are only interested in light containers leaving the rest to be carried via railways. Even though axle load limits have been put in place, some ungenuine transporters, who use old and overloaded vehicles, divert to different routes to avoid the weighbridges. Furthermore, poor siting of the weigh bridge stations have allowed overloaded vehicles to destroy the roads before they are checked. This calls for axle limit control to be done at the beginning of the journey.

It is important to note that the law has not been applied with respect to impounding of overloaded vehicles due to the lack of packing facilities, need for presence of cranes to offload overloaded vehicles and absence of customs personnel etc. Furthermore, offloading of excess load could also lead to theft or dumping of transit goods. Prevention of overloading will mean that the roads will be spared from destruction and truck operators will benefit from reduced turnaround times and reduced vehicle operating costs. Axle load limit control can be improved by involving the private sector in enforcement of axle load limits because the problems being faced are blamed on corruption in the public sector.

4.6 The Railway and Inland waterway

The general performance of the Kenya Railway Corporation being experienced since 1995 can be explained by the dilapidated railways networks, aged locomotives and rolling stock and a very large workforce that has resulted in poor financial, commercial and operational performance. Some other factors that have contributed to this state of affairs are market fragmentation and the competition from road hauliers.

The Malaba –Kampala line, which brings in between 60 and 70 per cent of

Uganda's imports from Mombasa, is in need of repair. The *El nino* related rains of 1997/1998 affected some key sections of the line, which the EU promised to fund. The rail between Malaba and Kampala is used not only for Uganda's imports and exports but also transports goods for Rwanda and the Democratic Republic of Congo (*Mutumba ,2000*)

Analysts have pointed out that the biggest constraint facing the corporation is the 'relegation of sound business principles to the periphery, as political expediency reigns supreme'. It is argued that KRC's executives are appointees of the Executive and that, though this intention may be good, they may not have the managerial independence to operate free from political pressure. There has been a steady decline in revenue earning at KRC as a result of poor performance of the freight business, which is the main revenue earner for the corporation. Technical and operational constraints have resulted in reduced traffic movements (*Profound, 1998*).

4.6.1 Infrastructure

The maintenance of infrastructure is constrained by the lack of equipment, shortage of gang strengths and rails and also insufficient engineering train time. This has had an effect on performance. The level of availability of the signalling and telecommunication network is deteriorating. This is an essential part that has been ignored, hence shortage in transportation, lack of spares and vandalism by the public of vital components. A recent study shows that factors hampering the marine services were the nautical charts and sailing directions on the marine services in Lake Victoria that have not been updated since 1956. Maritime facilities on the lake were set up under the East African Railways and Harbours (EARH) corporation, which ceased to exist after the break up of the East African community. The radio communications on the lake are at present not satisfactory because the frequencies used for ship-to-shore and ship-to-ship were inherited from EARH and are outdated. The comprehensive system of buoys and

beacons, which were erected on the lake early in the 20th century, is still being used, though the number of vessels plying the lake has considerably increased.

4.6.2 Locomotives and rolling stock

The constraints on the budget and long lead time in procurement and supply of spare parts and other factors have negatively affected the maintenance quality as can be deduced from the table below.

Table 9

Commercial performance

	1995/96	1996/97	Change(%)
Tonnes('000)	2,059	1,621	-21.3
Tonne-km.(million)	1,338	1,068	-20.2
Passenger journeys('000)	1,939	1,981	2.2
Passenger-km,(million)	385	393	2.1
Freight trains	47.4	47.7	0.6
Passenger trains	56.4	56.2	-0.2
Wagon turnaround(days)	16.3	22.1	35.6
Wagon unit-load (tonnes)	15.4	13.8	-10.4
Average net trainload (tonnes)	396	270	-32.1

Source: KRC Annual Reports 1995/96

The tonnage hauled and tonne kilometres were affected by transit traffic that declined by 23.5% from 530,645 tonnes to 405,845 tonnes. The decline in transit traffic is attributed to the disruption that came about by the wars in Rwanda, Burundi, DRC and southern Sudan. It is, however, notable that passenger journeys and passenger kilometres improved. An important factor is that the ageing trains are not able to cope with the demand.

The performance of locomotives fell between 1995/96 and 1996/97. The drop in availability is due to long lay off of locomotives, mainly the lack of spare parts. It is worth noting that locomotive reliability, wagon availability and locomotive kilometre improved.

Table 10

Locomotives and wagon performance 1995/96

	1995/96	1996/97	Change %
Aggregate kilometre(million)	5.6	5.9	5.2
Km/available locomotive day(Km)	204	191.4	-16.2
Locomotive availability(%)	47.8	43.2	-9.6
Locomotive reliability:(km/failure)	2,551	3,160	23.9
Wagon availability	64.5	66.5	3.1

Source: KRC Annual reports (1996/97)

The operations and performance along the single metre gauge railway system gives that the freight tonnage on the railway network fell by 21.3 % from 2.1 million tonnes in 1996 to 1.6 million tonnes in 1997. The revenue earned from the freight transport dropped to K£ 142.4 million in 1997 from K£ 156.7 million in 1996.

4.6.3 Human resources

The corporation's competitiveness depends largely on the utilisation of staff and their innovative capacity. KRC has been vigilant in recruitment, deployment, training and retrenchment of its staff. It reached a time when they could not control employment, hence the need to reduce the number of staff, as most of them are not productive, and remain with a lean number that is productive. There have been a lot of problems since KRC is not able to pay the retirees' benefits. Furthermore, the withdrawal of an existing bonus scheme contributed to low morale of the staff resulting in reduced output by the workers.

One major constraint in lake shipping, domestic as well as international, as per the results of a study carried out by UNCTAD, is the acute shortage of qualified deck officers. According to the study, Uganda has no training and maritime policy and no formal marine training school, while Kenya relies on the training school in Dar es Salaam *(Ochieng, 2000*).

KRC contracts leasing of wagons to a few agents, which gives these agents a monopoly. This does not encourage competition with other interests. The few agents are the companies that can afford to maintain the wagons. This is seen as a way of sidelining the small indigenous companies.

Drawbacks in both port and transport systems are both physical and non-physical in nature that frustrate traffic flow and cause unnecessary delays. This calls for measures to be undertaken to streamline and to reduce the documentation procedures, especially for transit cargo. These systems work in isolation and there are many problems faced by the cargo owners when need arises to transfer between these modes. There is reason to believe that intermodal transport, if well developed, will improve the transport. There are growing levels of congestion on the highways, especially on the main Mombasa - Nairobi highway.

CHAPTER 5

COST COMPARISON OF PORT, ROAD AND RAIL

The purpose of this chapter is to examine the costs that are incurred in shipping in moving goods from the ports through transportation to their destinations. The costs are either those incurred by the importer/ exporter or the CFA and transport company in their effort to move cargo. The author examines the costs at the port of Mombasa in comparison to the ports of Dar es Salaam and Durban on port charges and shore handling to be able to see which of the three competing ports is cheaper for the shipper. On the transport side, the author examines the costs incurred by the shipper to move cargo from the ports of Mombasa and Dar es Salaam to the hinterlands and land-locked countries and especially Uganda. Particular comparison is made on the charges by the CFA and the shipping lines and on the turnaround time of the ships in the different ports.

5.1.1 Port charges

The charges analysed here are those that are charged on the ship and are payable by all ships entering the ports. The port of Durban charges about US$ 2 per ton for the port dues while KPA charges US$ 10 or 500 % more. The wharfage charges on imports for the port of Dar are 1.5% ad valorem and 1.25% ad valorem on domestic and transit cargo respectively. Charges for exports on both domestic and transit cargo are 1% ad valorem. Durban on the other hand charge a minimum wharfage of US$ 30 /ton and up to a maximum of US$ 1,286 per harbour ton. For imports Durban charges 1.78 % ad valorem prorata basis and 0.89% for exports on free alongside ship value (FAS). Wharfage on containerised cargo for a 20´ is US$ 160 for exports and US$ 240 for

imports and US$ 420 for a 40´ for the port of Dar es Salaam both imports and exports. Durban charges US$ 28 and US$ 48 on a 20´and 40´respectively. This shows that Dar is more expensive compared to Durban. It is important to note at this juncture that the port of Mombasa eliminated wharfage charges from the tariff and they are not, therefore, applicable at the port of Mombasa. It is difficult to give a comparison because the basis of charges in these ports is not the same.

5.1.2 Customs /Shore handling charges

Customs verification of the containers at the port of Mombasa costs US$ 75/TEU for both domestic and transit cargo while it costs US$ 180/TEU for domestic cargo and US$160/TEU for transit cargo for a 20' in the port of Dar es Salaam. This shows that the port of Dar es Salaam is five to six times more expensive on customs verification as compared to Mombasa. Durban on the other hand charges US$ 6 and US$ 12 for the 20´and 40´containers, respectively, only a fraction of the cost in Mombasa.

KPA charges double the storage charges at the port of Durban. Half the charges for storage are levied when dealing with containers for export. Storage charges at the port of Dar es Salaam are US$ 15 and US$ 30 for the 20´and 40´containers but the advantage is that while KPA gives two free days' storage, Dar es Salaam gives a free period of five days. However, Dar es Salaam is more expensive compared to Durban and the port of Mombasa.

The port of Durban applies terminal handling charges for imports and exports of US $ 55 and US$ 82 for the 20' and 40', respectively while the port of Mombasa charges US$ 45 and US$ 38 more for the 20' and 40', giving a 29 % and 18 % difference on 20' and 40' containers, respectively.

Table 11

Comparison of Handling and Customs charges

Activity	Kenya		Tanzania	
	20'	40'	20'	40'
FCL(Domestic) cargo	150	180	90	135
Transit cargo	100	120	80	120
Stripping/Stuffing	50	100	70	140
Empty Containers	60	72	10	20
Customs Verification				
Domestic cargo	75	150	180	360
Transit cargo	75	150	160	320

Source: THA tariff 1995, KPA tariff, 1995.

The port of Durban handles a lot of transshipment activities because it is a hub port, which is neither KPA's nor Dar es Salaam's core business. Because of these facts, few comparisons can be made with these ports. The terminal handling charges for containers that are shipped coastwise between the South African ports are only available on application and it was not possible for the author to collect the information. From the above analysis the port of Durban is the cheapest while Dar es Salaam is the most expensive among the three ports.

5.2 Stevedoring charges

Stevedoring refers to the moving of cargo to and from the hold of the ship by a stevedore both for imports and exports. The stevedoring charges are the rates for loading/unloading and stowing, (as the case may be) a ship (*Brodie, 1997*). These charges are paid by the shipping lines of the conference lines and, in the case of the vessels that are on charter, they are settled either directly by the shipper or it can be done through the CFA.

According to the tariff as quoted, 'The Stevedoring charges are levied on standard 20' I.S.O units that are handled to and from a ship, and are raised per move. The 40' containers are levied at a higher rate' (*KPA bulletin of Port statistics, 1998*) as shown on the table below. For the port of Dar es Salaam, stevedoring of transshipment containers stand at US$ 90 for a 20' and US$ 135 for a 40' container. This rate is for the inward and outward operations and are paid in full amount by the inward vessels, while the container berth charges are US$ 80 and US$ 120 for a 20' and 40' respectively. The port of Mombasa is cheaper than the port of Dar es Salaam. When a shipper or carrier intends to choose a particular port they will also want to look at other parameters as are discussed below.

Table 12

Comparison of stevedoring charges

Activity	**Rate per Move in $**			
	Dar es Salaam		Mombasa	
Stevedoring	20'	40'	20'	40'
Discharge, loading, shifting within hold or on deck.	240	420	100	120
Containers handled via conventional ship.	-	-	120	144
Containers handled on Roro	-	-	75	90
Stripping and stuffing	70	140	50	100
Stripping and re-stuffing for transshipment.	90	135	100	200

Source: THA tariff 1995, KPA tariff 1995.

5.3 Transit time

In this highly competitive environment in which many companies are operating, people are not only paying attention to the production costs but also to the time the goods are received. We realise that many companies are adopting Just-In-Time (JIT) inventory systems and therefore it is important that these goods are cleared and delivered quickly.

If the port, road and rail systems were to attract customers and survive this competition, they have to create a system that will ensure speedy clearance of cargo at the port and establish an effective inland transport system to the destinations.

A consultative meeting on the movement of transit traffic along the northern corridor that was held in September, 1999 at the KPA headquarters established that it takes 28 days to clear and transport transit cargo through the port of Mombasa. It takes 13 days longer than the port of Dar es Salaam, which only takes 15 days to clear transit cargo and move it for transport by rail to Kampala. The table below shows the kind of activities undertaken to move cargo through different organs.

Table 13

Transit times between Mombasa and Dar to Kampala.

Activity	**Organ**	**no.of days**
Long room processing	KRA	5
Revenue office	KPA	2
Verification	KPA/KRA	4
Loading	KPA/KRC	3
Mombasa-Malaba-Rail	KRC	6
Delays in Malaba	KRA/KRC	3
Delays in Tororo	URC	3
Tororo- Kampala	URC	2
		Total=28

Source: Consultative meeting, 1999

In the same meeting, it was also observed that KPA was less expensive in total costs by US$ 322 compared to the port of Dar es Salaam. Clearing of goods through the port of Mombasa is cheaper compared to Dar es Salaam port. It costs US$ 832 to clear and

transport a 20' container from Mombasa to Kampala. It costs about US$ 1,534 to clear a 20' container from Dar es Salaam to Kampala, comprising US$ 180 Tanzania Harbours authority fee, US$ 200 clearing agents fee. The transit times that are discussed here are those affecting transit cargo.

While Mombasa may seem cheaper than Dar es Salaam, shippers are more sensitive about delivery time. At this juncture it is important to note that there are more steps on documentation and verification of domestic cargo than transit cargo so the transit times for clearance and transport of domestic cargo are even longer for Kenya.

5.4 Turnaround time

This is the time that a ship will spend in the port. It includes the service time, that is the time the ship stays berthed and between berthing and departure time and, the waiting time. Turnaround time is counted from the arrival of the ship in front of the port until its departure and this is after the ship leaves the limits of the port. This is a good parameter of measuring the efficiency of the port and the costs that may be triggered or are associated with it other than the normal port costs.

Table 14

Comparison of Turnaround time

Years	**Mombasa** (Days)	**Dar es Salaam** (Days)
1995	4.34	4.55
1996	3.57	3.6
1997	4.70	4.0
1998	4.72	4.0

Source: KPA annual bulletin of Port Statistics, 1998.

THA Port Statistics, 1997.

The performance of the two ports is approximately four days and the two ports may be

having the same operational problems and this is not representative to show the competitive advantage of the port of Mombasa. There is a difference in the number of ships calling in the two ports. Mombasa handled a total of 960 deep-sea vessels while Dar es Salaam handled 801 vessels, hence Mombasa handled 159 more vessels in 1998.

5.5 Road freight rates

Road freight rates are the costs charged by the transport companies to move cargo to the hinterlands and the forces of demand and supply determine these rates. The truck owning companies will give lower rates to shippers who have large consignments, are frequent and loyal customers as compared to the shippers who are infrequent and with small consignments. The rates are also affected by the availability of return cargo (back haul), competition from other modes of transport, especially the rail and the lake and to some extent the pipeline, and the state of the roads. The prices for the road transport may vary up to 25% depending on the trucking company the shipper chooses to use.

For the road transport operator to realise a profit of the service as a product he is offering, he has to use strategies to cut down on the costs. The transport costs to different destinations do not necessarily reflect the distance covered but rather the route used. This is because some routes are longer but easily accessible and convenient in the sense that the procedures, police checks, axle limits and security do not cause longer delays and inconvenience.

The rates that are discussed below will include both domestic and transit cargo. They include the rates for containers and general cargo and to some extent petroleum products and dry bulk cargo, in this case coffee. The rates quoted are from the CFAs, transport companies and shipping lines. Kenya has cheaper rates when comparing the ton/kilometre with Tanzania. It costs 0.1006 t/km to move general cargo from Mombasa to Nairobi with a distance of 487 km, while it costs 0.125 t/km to move general cargo

from Dar es Salaam port to Dodoma which is fairly the same distance. The distance from Dar es Salaam to the landlocked countries is shorter compared to Kenya, but when it comes to the ton per kilometre rate Kenya is cheaper.

Table 15

Road Freight rates from Mombasa and Dar es Salaam

From Mombasa	Distance(KM)	Gen. Cargo ton	Ton/km rate	20' US$	40' US$
Nairobi	487	49	0.1006	871.4	1,607
Nakuru	643	63	0.0980	1,081	2,016
Kisumu	836	81	0.0969	1,373	2,600
To Uganda					
Kampala	1,150	156	0.1357	2,352	4,704
Tororo	945	128	0.1354	1,932	3,865
Jinja	1,069	145	0.1356	2,175	5,800
To Rwanda					
Goma via R. Inshasa	1,745	237	0.1358	3,555	9,480
Kigali	1,742	218	0.1251	3,272	6,545
Bujumbura	2,045	278	0.1359	4,170	11,120
From Dar to					
Dodoma	479	60	0.125	-	-
Arusha	647	80	0.123	-	-
Kigali	1149	200	0.174	-	-
Bujumbura	1164	200	0.172	-	-
Mwanza	1178	100	0.085	-	-

Source: Tanzania Hauliers Association 1999, Kenyan CFA, 1999

Comparing the distances to Kigali, it costs 0.1251 t/km from Mombasa while it is 0.175

from Dar es Salaam while it costs 0.1359 t/km from Mombasa and 0.172 from Dar es Salaam to Bujumbura. There are remarkable differences in the freight rates that cannot only be explained by the difference in distance on different routes covered. Competition between the different modes of transport and other influencing factors like the state or actual condition of the roads, the number of police check points on the way, the axle load limits and finally security are the real determining factors.

5.6 The Rail freight rates

These are the rates used by the transport companies that have sub-contacted from the KRC to move cargo to the hinterlands. KRC transports both transit and domestic cargo. This service is not flexible since the shipper or the consignee will have to sub-contract one leg to receive his goods at the doorstep. Moving of goods to Uganda, for instance, all by rail, the main routes that can be used are from Mombasa via Kisumu rail/lake and Mombasa via Malaba to Kampala.

Recently, in October 1999 KRC announced special rates for moving transit containers from the port of Mombasa to Malaba/Kisumu for Kampala. Using KRC on the Kenyan leg and URC to Uganda does this service. The rates are only concessional to Uganda since there is no direct connection to Rwanda or Burundi or DRC and they have to use road transport.

Table 16

Container freight rates from Mombasa to Uganda

Weight	KRC($)	URC ($)	Total($)
upto 24 tonnes 20'	840	430	1270
upto 30 tonnes 20'	1,000	675	1,675
40foot	1,680	860	2,540

Source: Rates from CFA, 1999

Important to note is that these freight rates are not inclusive of the demurrage charges

that range between US$ 300 to US$ 650. Compared to the road freight rates it is cheaper to use the railway systems but then the rail gauge at the borders is not the same so the trains will have to change cargo at the border, which consumes a lot of time. Other factors that will affect costs are the quality of service and transit time.

Table 17

Rail costs on general cargo from Mombasa to Kampala

	KRC ($/tonne)		**URC($/tonne)**	**Total ($/tonne)**
Mombasa-Malaba/Kisumu	42	Malaba/Kisumu-Kampala	22.5	64.5
Nairobi-Malaba/Kisumu	31	Malaba-Tororo	11.5	42.5
Mombasa -Malaba	38	Malaba-Jinja	20.5	58.5

Source: KRC Tariff, 1998.

It costs US$ 64.5/tonne to move general cargo from the port of Mombasa to Kampala by combining the two railways lines and US$ 42.5 from the same origin to Tororo and US$ 58.5 to move cargo to Jinja.

The containers destined to the upcountry side of Kenya by rail are quoted mostly to the ICDs. For a round trip from Mombasa to Nairobi and back to Mombasa (empty container) it costs about Ksh.36, 500 and Ksh.70, 000 to transport a 20' and 40' respectively. The round trip loaded on both ways will cost Ksh. 40, 000 and Ksh.80, 000 for the 20' and 40' respectively.

The rates quoted by one of the local companies offering transport services to Kampala in Kenya and Tanzania quotes the tariff below. From the table below it is cheaper to transport general cargo through the port of Mombasa to Kampala compared to through the port of Dar es Salaam, which is US$ 10/tonne or 15.6 % more expensive. On the

other hand, the port of Mombasa is more expensive to use when moving containers to Kampala which costs US$ 262 and US$ 526 more on a 20' and 40' respectively.

Table 18

Comparison of Rail freight rates to Kampala.

Dar to Kampala	**TRC($)**	**URC($)**	**Total($)**
General goods	37	27	64
Containers(TEUs)	724	429	1,153
Containers 40'	1,450	855	2,305
Mombasa to Kampala	KRC($)	URC($)	
General goods	42	12	54
Containers(TEUs)	1,015	400	1,415
Containers 40'	2,031	800	2,831

Source: Tariff from CFA in Kenya**.**

As seen earlier KPA has got longer transit times and it is more expensive. These could be the reason why most shippers from Uganda are shifting to the port of Dar es Salaam.

Another comparison that has been analysed is the Uganda coffee exports through the ports of Mombasa and Dar es Salaam. Coffee constitutes one of the major exports from Uganda to the port of Mombasa but some coffee goes through the port of Dar es Salaam as well. The port of Dar es Salaam is more expensive to use to move coffee from Kampala by US$ 0.84/tonne, giving a difference of 1.69 % but, it is also cheaper to move coffee from other regions of Mbale and Kasese to Mombasa, which are US$ 5.84 and US$ 0.89 cheaper respectively. With the rates as shown below, the shipper will have to look at other factors like the security of the cargo and transit times.

Table 19

Coffee Exports from Kampala

To Mombasa	URC	KRC	Total ($)
Kampala	16	33.6	49.6
Kasese	32	33.6	65.6
Mbale	13	33.6	46.6
To Dar port	URC	TRC	
Kampala	16	34.44	50.44
Kasese	32	34.44	66.44
other	16	36.44	52.44

. Source: Consolidated rates from a CFA in Kenya

Finally, it is worth comparing the fuel imports from both the ports of Mombasa and Dar es Salaam to Uganda, by rail. It is apparent that through all the routes to Kampala, it costs US$ 51 and US$ 52 to move the oil products by URC and TRC respectively. Kenya is cheaper and this is because of the strategically placed ICDs in Eldoret and Kisumu and the competition from pipeline.

The rates from the transport or CFA companies vary very much. They cannot be used sufficiently to do the comparisons. It is, therefore, the shipper who has to decide which other parameters to look at when deciding which route and mode of transport to use as analysed in the next chapter.

The observation here is that compared to road and rail/inland waterways freight rates the road freight rates are higher than rail or combined rail and inland waterways rates. This is because they have different operational needs, but it is important to note that the road is advantageous because it offers door to door services. Tanzania has got a better connection of railways compared to their counterparts in Kenya. Road transport is more

expensive than rail. The road transport rates are not consistent at all. The market forces of supply and demand determine the rates. This makes it very difficult for the customers who need consistent services and loose a lot of money because of the unpredictable ways that the rates change.

5.7 Clearing and Forwarding costs

Clearing and forwarding agents are very important in facilitating the movement of goods through corridors between the port and the shipper or the consignee. In Kenya basically, the CFAs will give their rates on the basis of the cost, insurance and freight (CIF) value of the goods the fee is between 1-2 %. A few of them will give the charges based on the weight or volume of the cargo while some others will quote a flat rate for the consignments.

Bond in Force (BIF) compensation will be charged by the CFA for facilitation of the security bond in transit and also recovery of the insurance premium or bank guarantee interests paid by the CFA. This can range between 0.55% 0.25% of CIF in Kenya and Uganda respectively and it is calculated as a percentage of the BIF and this depends on the relationship of the shipper to the CFA, who may sometimes give a flat rate for the consignment.

Another cost that will be footed by the shipper is the commission for documentation and handling, customs clearance and warehousing and monitoring of the movement of the cargo to the consignee or port or warehouse. The CFA may arrange for transport services and even pay the container demurrage charges to the shipping line on behalf of the consignee/shipper. Sometimes these costs are given as a rate depending on the complications encountered in clearing of the cargo, warehousing and transportation.
Some CFAs are international and own trucks and they subcontract with the KRC, so they offer combined transport.

5.8 Container related costs

The transportation of containerised cargo through the northern corridor has become very important, as there have been measures to raise the current standards in the carriage of such containerised cargo.

Containerisation is an advanced concept of palletisation and unitisation of cargo with the aim of making cargo handling easier and hence reducing the costs as these cargoes are carried in boxes that have standard dimensions and will allow mechanical handling and transfer to different modes of transport. This has got a lot of benefits including among them quicker handling, fast turnaround of the transport units, facilitation of the customs procedures, easier control of inventory, easy tracking of containers and reduction of damage to the goods by minimising pilferage and loss of cargo during transit. They offer minimum costs of storage and suit door-to-door transport and multimodal transport, which includes the use of combined bills of lading of transport.

5.8.1 Container demurrage charges

Most shipping lines in Kenya give a period of free days of 14 days for dry cargo and 7 days for reefer cargo during which the importer should collect, deliver and return a container to the shipping lines. After these free days the shipper is charged a fee per day as demurrage for the container.

Because of the problems with transport and the procedures at the port these free days sometimes expire before the container even leaves the port which highly costs the shipper. In Tanzania, the importer gets 7 free days for the Dar es Salaam bound cargo, 14 days for the upcountry cargo and 21 to 30 days for the cargo to the land-locked countries of Zaire, Rwanda and Burundi.

In Kenya, the recommended free days allowed is 30 days for Uganda bound containers, 40 days for containers bound for Rwanda, 45 days for the containers destined for Burundi and 50 days for containers destined for DRC. The charges per day per TEU range between US$ 4 and US$ 10 for these containers.

It is clear that these rates supersede the rent of a container per TEU per day, which stands at US$ 3.5. This does not give a clear picture of conducting business. These charges are raised to discourage the importer from holding the containers for long. The charges increase with time.

5.8.2 Container deposits

Before the carriers release containers to the shippers for inland transportation, they require the shippers to give a guarantee by depositing money. The shipping lines have introduced a condition that requires a shipper to give full replacement for the value before being allowed to proceed with the container. This deposit, on average, amounts to US$ 320 for 20 footer and US$ 640 for 40 footer. Some carriers would require that they get the replacement value plus the usual deposit.

The shipper is reimbursed immediately the container is returned, but this may take time, especially when they have to undertake repairs at the shipper's expense and the cost of repair is deducted from the shipper's deposit less the demurrage incurred (if any) for repairs and cleaning costs. In Tanzania, most shipping lines waive the container deposits that cost between US$ 200 and US$300 per container to attract more customers.

Certain factors influence the cargo owner to choose a particular mode of transport or to combine. Most customers are forced to use the road for short hauls while they combine rail/lake and road on the long distance voyages where these modes are used

complementing each other on voyages on which they can be utilised efficiently and economically.

With the advent of door to door services, the transportation of containers needs a well-planned and integrated infrastructure. The East African region has not been able to establish a transport system where all the transport units are unbroken, each transporter is specialised in a particular segment (unimodal). This has greatly accelerated the costs of transport to the shipper. There is need for control on the transport operators on these segments since multimodal transport will facilitate movement of cargo by a total and reduced transport cost. This is because they will be under the responsibility of one Transport Company, the MTO.

The goods should, therefore, move smoothly from the shipper's premises to the consignee. The shippers want a range of capabilities offered to them from the principal providers that is, from the sea transport to the door. Intermodal deliveries in a one stop shopping where the customer will expect that all these capabilities will be under the control of a single provider. Cargo owners would want to have a single source of accountability or liability for the outcome. This challenges the service providers to offer access to all the modes of transport, which will give the cost trade off of these modes and give a combination that will be most efficient as part of the distribution pattern.

5.9 Multimodal Transport

The United Nations convention on multimodal transport of goods defines multimodal transport as

> The carriage of goods by at least two different modes of transport on the basis of a multimodal transport contract from a place in one country at which the goods are

taken in charge by the multimodal transport operator to a place designated for delivery situated in a different country' (*Multimodal Transport Handbook, p.13*).

And a Multimodal Transport Operator (MTO) is

> Any person who on his own behalf or through another person acting on his behalf concludes a multimodal transport contract and who acts as a principal, not as an agent or on behalf of the consignor or of the carriers participating in the multimodal transport operations, and who assumes responsibility for the performance of the contract.'

There are different types of MTOs defined by the type of contract they hold. This gives rise to MTO operating ships and those not operating ships hence the Vessel Operating MTO (VO MTO) and Non Vessel Operating MTO (NVOMTO). The NVO MTO may be able to arrange door to door transport of the cargo and use more than one mode of transport. They may own one means of transport and subcontract the other or they may own no means of transport but subcontract for all the modes and offer an exclusive transport service to their clients.

This type of MTO avoids investing in any type of transport and they are able to choose the types of transport or even combine different modes giving the most economic and efficient way and are therefore able to meet the needs of the customers. The work of a NVO MTO entails organisation that is efficient and reliable, and control of a huge volume of cargo so that they are able to subcontract on competitive terms for these modes.

The MTO issues a multimodal transport document, and this shows that they accept a certain amount of liability and ensures that clients are protected against claims arising from the liability.

This is good because only a single company is in charge of the whole transport and it has a capability to move cargo between different modes ensuring there are no delays, and long transit times and also reduces costs by offering door-to-door services.

CHAPTER 6

CONCLUSIONS AND RECOMMENDATIONS

Kenya's infrastructure is inefficient in many ways. No transport industry in Kenya is reinvesting at a level sufficient to maintain its assets. As a result, infrastructure is deteriorating and the fleets are ageing. Deterioration of the infrastructure and equipment contribute to low speed, low delivery and high rates of accidents.

Capabilities in the transport policy making and management are weak at all levels. The capabilities of the public and private sector transport operators have been blunted by Kenya's political and economic isolation and by the poor profitability of many industry sectors causing under investment in skills.

Furthermore, the present system has not been able to give the right incentives and signals to transport operators, for instance, poor enforcement and overloading of trucks have led to damaged roads, high rates of accidents and underegulated operation.

Containerised traffic faces long delays and is at the breach of capacity restrictions at the container terminal. Inland intermodal links and terminals have poor transfer times and service. General rail freight levels of service are poor. In road transport, while operators are relatively efficient and give a good service, truck overloading and long driver hours are common and this has increased the risk of road damage and accidents.

There are a lot of delays associated with the movement of cargo and recorded long transit times. This is because of the long procedures at the ports, customs, and poor communication networks and infrastructure of the intermodal linkages.

A constraint to the effective management of business is the complexity of document handling. The efficient and quick turnaround of ships depends to a large extent on the speed and ease at which the documents are handled and this has been made more difficult by the number and non-standardisation of these documents and procedures used during processing and handling them. The customs procedures in particular have created delays in the flow of cargo at the port of Mombasa due to the high number of documentation that is required for processing them and the examination of these goods and at the releasing points which have become disincentives and bottlenecks to fast movement of goods which has resulted in shippers losing money.

The Port of Mombasa is associated with problems ranging from outdated and poorly maintained equipment, cargo thefts to damage and port delays. This, as a result, causes congestion and delays making the cargo to be of less value in the international market.
Poor communication and information flow inhibits traffic flow. There are apparent unreliable means of communication between the port and its users (customs, KPA, CFAs) and the inland communication that delays the transport information and documentation.

Although there is a definite problem of infrastructure and superstructure, this hardware is not the contending issue, the problem is connecting the processes. Transport companies in Kenya need to focus more on connectivity and continuity of these processes. These are customs clearance, reliability and availability of transport, and port processes at the disposal of the customer and awareness of the customers' needs by appreciating the customer as an important entity who needs to be treated diligently.

Promotion of institutional development

The reform of the present institutional inadequacies is of fundamental importance in improving the efficiency of ports. The relationships between the port authority and the

government and its departments need to be improved and the regulatory control to be eased to provide greater autonomy and operational freedom, since the government's delegation of authority has resulted in excessive control.

Upgrading of the infrastructure

The constraints posed by the poor infrastructure are one of the causes of slow movement of cargo to their destinations. Inadequate and inefficient operations in infrastructure lead to high costs of transport and communication, which in turn make the imports and exports to be expensive and uncompetitive. The government and all the concerned bodies need to undertake an upgrading program of the infrastructure on the port, rail and road. These will facilitate both domestic and transit cargo movement.

Change in the Government roles

The government has been the major controller of the many components of transport and trade. There is increasing concern over the management of institutions and the decline in services that are offered by these institutions, which have led to low growth and lack of sustainable development in these institutions. This can be corrected through public sector reforms, backed by commercialisation and privatisation, outsourcing and training of the public service to adapt to the needs of a competitive market.

This can be achieved by redesigning the national transport system and building up a business environment that Kenya should seek to establish while the government's ability to influence the performance of the transport system should be limited to policy setting. The major decisions on investment and operations should be made at the company level (though the government should regulate some firms) since it is business that will be charged with meeting the needs of the customer.

Privatising of Activities

The main and important parastatals in Kenya's transport sector are the KRC and KPA that have critical roles to play in Kenya's economy and on the economy of other countries in the great lakes region, namely Uganda, Rwanda, Burundi, Southern Sudan and the DRC. In this view, their current and unsatisfactory operational and financial performance is a concern to the government and the countries served by the northern corridor.

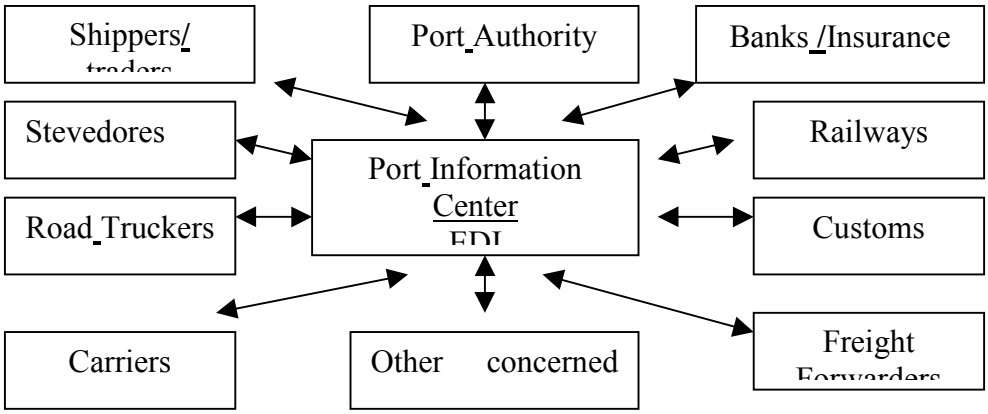
For the past several years, there have been indications that the government is moving towards privatisation of these transport sectors. These include contracting and outsourcing of specific functions, for instance, locomotive rehabilitation and maintenance, leasing out of specific lines' equipment and leasing of some activities at KPA, for instance, the container terminal and the Grain bulk terminal etc. This kind of privatisation will increase profitability in the privatised companies, a drastic reduction of cashflow from the government to the firms and increased creation of employment. It is the author's opinion that the port of Mombasa has an advantage of being behind in the privatisation process of the port industry since they can study the experience of other ports which have gone through the process and avoid structural problems experienced by such ports.

The government now needs a comprehensive strategic policy for privatisation, which should include reduction in public expenditure on the two corporations, and promotion of the public sector to participation and improvement of the services by allowing the private sector to invest in improvement and rationalisation. This can be done by putting emphasis on service improvement rather than on ownership. The institutions need to retain their core businesses and outsource the rest for proper management. For any port reform to be introduced successfully, it is important that the authorities and the

employers to ensure that the employees are involved in the early stages of the reform process and through the entire restructuring.

Information Technology

In the trade that involves many parties to receive, transfer, check and file the information that is relating to the goods, there is a need for proper management of the information flow. There has been a very slow and outdated way of doing this work manually making it prone to a lot of error and costs that are involved in passing this information. The advent of computers, which have prompted the use of Tele-transmission, has made it possible to transmit and process the information by the establishment of an Electronic Data Interchange (EDI) for the port and its users and a Management Information System (MIS) for the port workers. Developing a number of systems to link the branches of the company and the counterparts and their operational partners does this. KPA could be the ideal Company to develop EDI and to link and ease the information flow to all the port users.



Source: Basic elements of port operation notes p. 16

This will improve the flow of information and allow and facilitate the border controls and improve the customer service. The diagram above demonstrates how the EDI will influence the information flow.

The EDI will save on clerical costs by avoiding the re-entry of data, improve information management and data exchange and allow quicker and safer processing of invoices, among other things. Another model that should be implemented at the port is the MIS for the port workers for proper accountability at all levels to give proper service to the customers.

Cargo Owners' Representation

Cargo owners are the major customers in shipping because they are the ones who provide cargo to allow trade. These customers do not have any representation in any kind of decision making. The cargo owners need to form an organisation to represent them with the ship owners, conference lines and port authorities on matters of common interest, for the consideration and discussion of the problems that affect them.

They need representation in matters regarding freight rates, port charges, port facilities, availability of shipping space and frequency of sailing and the terms of shipment, and finally to consider the problems that are faced by the shippers regarding inland transport, packaging for both export and import etc.

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APPENDIX 1

Transit Traffic: 1994- 1998 (tonnes)

		1994	1995	1996	1997	1998
Uganda	Imports	710,707	910,221	962,317	594,948	650,529
	Exports	204,893	145,622	250,441	276,570	191,529
	Total	915,600	105,843	1,212,758	871,518	841,901
Tanzania	Imports	138,464	75,662	344,142	64,980	40,987
	Exports	9,344	15,696	19,462	23,830	16,714
	Total	147,808	91,358	363,604	88,810	57,701
Burundi	Imports	35,231	45,172	12,113	0	1,167
	Exports	1,065	3,056	859	0	0
	Total	36,296	48,228	12,972	0	1,169
Rwanda	Imports	169,373	474,851	769,853	155,443	83,306
	Exports	8,593	18,718	25,61	11,519	11,066
	Total	177,966	493,569	795,614	166,962	94,372
Sudan	Imports	69,692	25,576	10,686	20,075	51,832
	Exports	0	0	951	0	330
	Total	69,692	25,576	11,637	20,075	52,162
D.Rep. Congo	Imports	226,236	116,222	259,337	93,922	42,707
	Exports	34,096	26,770	25,212	11,597	16,751
	Total	260,332	142,992	284,549	105,519	59,458
Others	Imports	92,870	78,121	144,059	43,767	17,595
	Exports	9,778	1,100	12,004	45,903	2,474
	Total	102,648	79,221	156,063	89,670	20,069
TOTAL	Imports	1,442,573	1,725,825	2,502,507	973,135	888,125
	Exports	267,769	210,962	334,690	369,419	238,707
	Total	1,710,342	1,936,787	2,837,197	1,342,554	1,126,832

Source: KPA Annual Bulletin on port statistics 1998