

THE OPTIMISATION OF FREIGHT CAPACITY IN THE SOUTH AFRICAN AUTOMOTIVE INDUSTRY

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Introduction

This paper is based on a corridor study in the Eastern Cape Province, one of the nine provinces in South Africa. The study had the following objectives:

- To determine the feasibility of embarking on an optimisation strategy for the Logistics corridor between the Eastern Cape and Gauteng (South Africa's main province in terms of economic activity);
- To generate the platform for enhanced volume throughput that will support and optimise the related investments made into the Eastern Cape Province.

The Eastern Cape Province is currently not seen as a main transport corridor into Gauteng, nor do Gauteng business leaders within the automotive supply chain see it as such. The main reasons for this include distance, relatively longer lead times and lower return load fill rates. It is therefore important to establish a strategy that will change this perspective and find ways on how to optimise what the Eastern Cape has to offer. The Coega deepwater port and the industrial development zone (IDZ) in particular could be the core of such a strategy. Both bring some uniqueness to the Province which can be approached as a possible competitive advantage, as certain

loads can only enter the country through Coega, the province's only deepwater port. This should be a cardinal part of the optimisation strategy.

Globalization furthermore brought a unique set of challenges to the region as global trade management and local competitiveness is vulnerable to the region's geographical location, local infrastructure, and volumes. Logistics service providers have endeavoured to mitigate some of these factors through consolidation and shared services solutions, but have been limited due to their competitive bidding positions and linearity. Many organizations have consolidated and are now offering a wider spectrum of services to become more competitive and to improve their market share. However, the cost drivers related to volume and distance prove still to be a competitive disadvantage and would most probably always be as any immediate competitive advantage could easily be countered by any of the other so-called "Shorter Route" corridors.

Transport is the backbone of the South African economy and 80% of all freight carried in South Africa is done by road. According to Transport South Africa, nearly 7% of Gross National Product is spent on freight transport; 69% of road-freight tonnage is carried by firms or operators transporting freight in the course of their business; and 29% by road haulage firms. It stands testimony that focus on this subject must not be lost and further efforts should be applied to grow the Eastern Cape's market share of the sector.

Investigation and findings

As a first step in this study, interviews were held with the main role-players in the freight forwarding industry to determine their opinion on the feasibility of cooperation. The interviewees were adamant that the setting up of a web portal on which information regarding volumes and rates are made available to everyone involved in moving freight, is not feasible. The main reason for their unwillingness to cooperate is the fact that volumes and rates form the backbone of their competitive advantage. The bigger companies argue that they do have critical mass; they have worked hard for their market share and are well settled; the high volumes moved by them allow them economies of scale which allows them to offer competitive rates; they have a sufficient frequency of supply; and there is a satisfactory utilisation of their vehicles

that operate both inbound and outbound. Against this background, each of the service providers interviewed indicated that they are not prepared to make information regarding the volumes they move and the rates they charge available for all to see and make comparisons. If they do not have the practical security of how optimisation and cooperation would affect their business, they will not cooperate. The risk is too high and they feel that a web portal will cause them to lose business.

The market is segmented with each service provider having a respective strong point(s). They also feel that they cannot operate at the same rates at all times. For example, it would be difficult (and unfair) for them to work on the same cluster rate when they work on different radiuses of, for example, 75 km or 150 km. Cost per kilometer then makes it impossible to charge the same rates. Furthermore, with the rates of individual service providers available for all to see, OEMs may then turn around and start playing off one service provider against the other. They may end up manipulating the market and monopolies could be formed.

Another argument is that they need to consider OEM requirements. If a service provider is late and is thereby responsible for stopping the production line, he is given a significant penalty. Therefore, if one freight forwarder would share a truck and the other party slips up, he will have to share in paying the penalty. Time is too important in a production environment and the risk of late deliveries when the job is done with the help of a partner, is too high. This is a main reason why OEMs have their own service provider and work in silos, resulting in cooperation among the OEMs to be difficult.

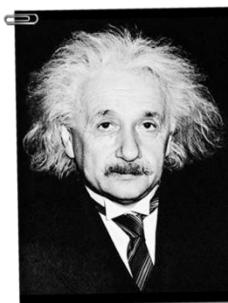
It is interesting to note that service providers do acknowledge that trucks sometimes do run empty (an honest comment), but they are too scared that a competitor will find out their utilization levels, or that competitors may benefit by building up a critical mass. They all agree that optimisation will only benefit the smaller players in the market. The physical implementation and execution of the idea thus seems to be too difficult. Everyone protects its own domain and nobody wants to take the risk. The slowdown in the economy will further complicate the setting up of a web portal.

The optimization idea is very similar to the "Joint Air Cargo Project" that was considered some years ago. Here the idea was also to get OEMs and service

providers to work together to consolidate/fill up aero plane space together. However, much conflict and tension were picked up then and the project failed to materialise. The service providers also argued at the time that information with regard to their volumes and rates are their intellectual property and their competitive advantage. They were not willing to share information in terms of volume and rates as this were regarded as being confidential. A main lesson to be learned from the failed Joint Air Cargo Project will thus be to identify and understand the constraints up front, work out how to deal with it, and then see and realise the opportunities. This is the only way that buy-in to the newly proposed project will be achieved.

Finding solutions to the innumerable challenges facing business and industry in today's fast-paced economy requires intelligence, innovation and dedication. Overall supply chain optimisation is perhaps an unattainable goal, requiring the balancing of many components, of which transport is but one. Therefore, the provider that will provide the best overall value would most probably lead the charge.

The real challenge is to learn to see the world anew and to have programmes in place to change the historic perceptions of the intended client base. The right questions need to be asked that could ignite the momentum and energy to drive initiatives that could be ground



No problem can be solved from the same consciousness that created it...

We must learn to see the world anew!

A. Einstein

breaking. This paper is intended to provoke further thought on the subject matter and to act as a preliminary feasibility investigation to optimize transport and density and in so doing establish the Eastern Cape as the future freight corridor of choice in South Africa.

Significant investment in infrastructure has been made to assist with the enhancement of the Eastern Cape as logistics corridor into Gauteng and South Africa. The Coega and East London IDZs stand testimony to such and the differentiation of the Deepwater Port of Nqura (Coega) brings significant advantages and differentiation to the Nelson Mandela Metro. Linking these with a domestic bio-directional transport solution to end destinations, is part of the challenge that still

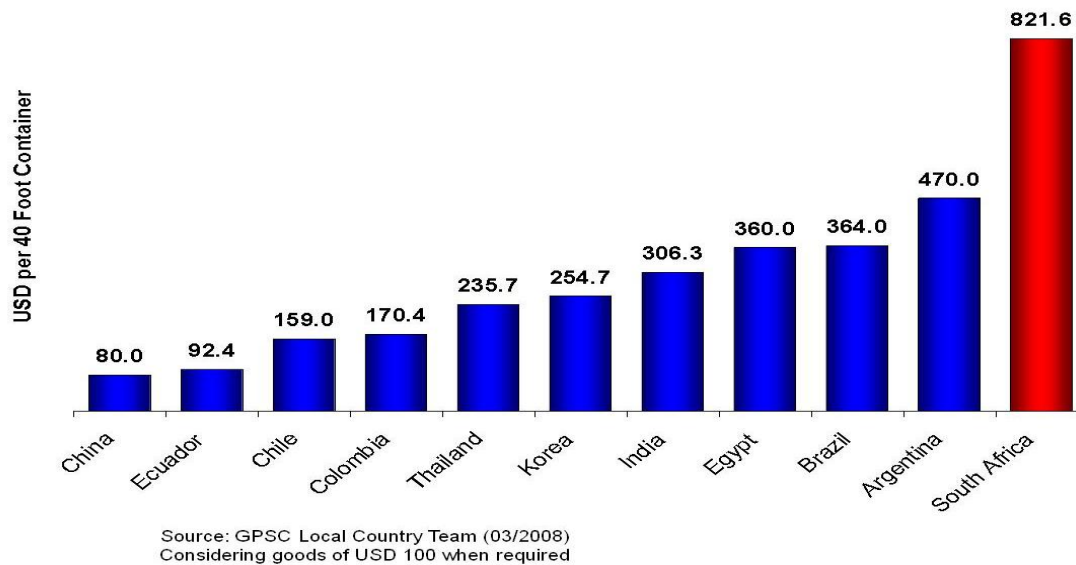
needs to be resolved. It is a well-proven fact that business will be awarded to the transport route that offers the best cost and reliable service. This is also evident when looking at the expenses incurred by Government and investors to ensure that the Maputo and Durban corridors are effective and cost efficient.

Current business practices and structures will not provide a sufficient platform for the corridor to be competitive. In fact, the larger business entities (OEM's and LSP's) have established service criteria and commercial contracts that question the need to change, as pricing is (locally) perceived to be competitive. The adoption of these practices would require re-investment or might have commercial ramifications, which, until risk is mitigated, will not be embraced. In addition, most deliveries are time dependant per part or order level and the networks to consolidate have not been properly established.

Investment into alternative routes or the enhancement of existing competitive routes could be seen as a threat should capacity be increased and overall South African volumes for import and export not increase accordingly. The argument is then not just to maintain market share, but rather how to grow market share to protect investments made in the Province.

The Eastern Cape Corridor (ECC) should also provide competitive advantage to their local clients who operate in the Eastern Cape and have to compete in the global arena. The performance of the total integrated solution from the ports to the consumer needs to be competitive so that the clients' competitive bid position is not negatively influenced. Achieving these objectives will assist to attract business to South Africa and compliment the desired volume growth, and, by definition, also economic growth.

Figure 1 shows that South African ports are seen to be 10 times more expensive than international benchmarks and work will need to be done to offset this performance. The Coega deepwater port offers the ideal opportunity to introduce best practices that will ensure a competitive platform for the Eastern Cape from both a port and local industrial zone perspective, but the overall productivity needs to improve.

Figure 1: Port charges benchmarked

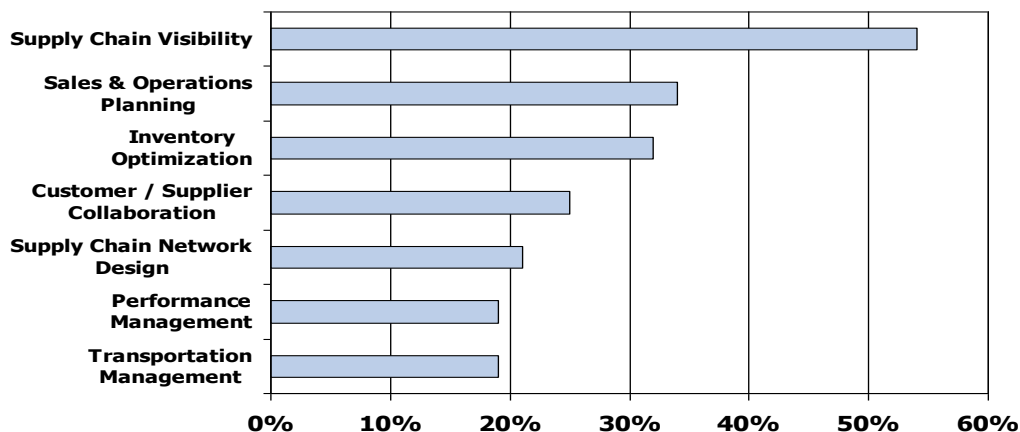
The competitiveness of the domestic transport platform is still at a disadvantage and requires significant focus. The road freight charges from the Eastern Cape to Gauteng are two thirds more expensive than from Durban to Gauteng. The modes of transport into Gauteng and back needs further enhancement to reduce price per unit for the consumer and methods that would provide competitive advantage would be of short living if they are not innovative by nature. Load volumes per trip need to improve, thereby encouraging practices to enhance FTL to and from Gauteng. The reality is that the modes would need to become significantly more competitive to attract the desired volumes and to achieve the objective of “Corridor of choice”.

Industry and competitor review

The challenge of globalization brought a unique set of challenges that organizations must overcome within their logistics areas. Local competitiveness is vulnerable to the region’s geographical location, local infrastructure, and volumes. Logistics service providers have endeavoured to mitigate some of these factors through consolidation and shared services solutions, but have been limited due to their competitive bidding position and linearity. Many organizations have consolidated and are now offering a wider spectrum of services, but the cost drivers related to volume and distance still prove to be at a competitive disadvantage.

Adding to these complexities are chronic issues such as economic uncertainty; fluctuating fuel prices; fuel grades available locally; road taxes and road conditions; security; the condition of the rail infrastructure as viable alternative; a lack of supply chain visibility; and demanding regulatory compliance. These issues have resulted in shrinking profit margins and a dip in customer service levels, which impact negatively on businesses and challenge their sustenance. The Eastern Cape automotive sector, a major economic artery for the region, has seen a significant decline in volumes of 47% since the peak in 2006 and it is clear that solutions need to be diversified beyond the automotive sector, while entrenching its service offer within the sector itself. The industry is challenged to offer more flexible and agile solutions that support businesses to reduce risk while improving service.

Figure 2: Industry focus areas

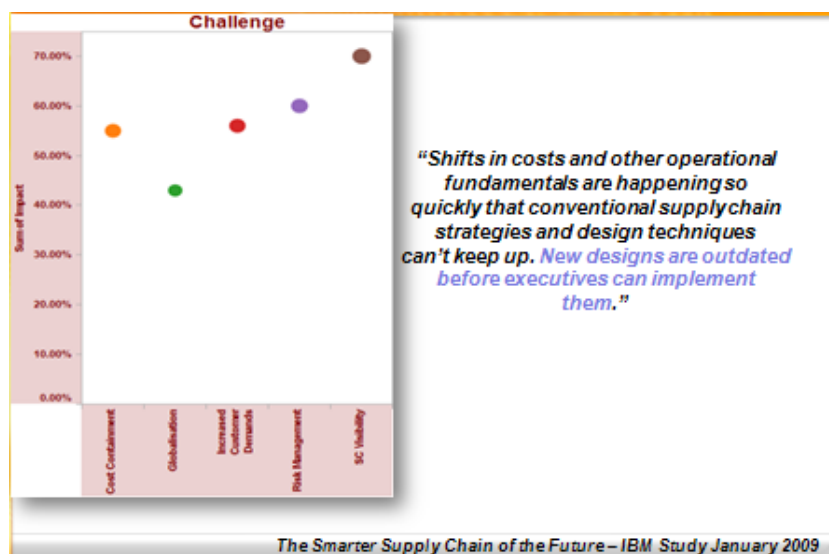


Source: Aberdeen Group, December 2007

Finding solutions to the mentioned problem areas is forcing the automotive industry to expand its traditional boundaries and services to become a cross-functional multi-service provider and client solution platform. The ability to manage inventory and the flow while being able to apply the effected practices as highlighted in Figure 2, is the real challenge facing the industry globally. Solutions that are able to offer true collaboration and volume consolidation across multiple service providers operating on shared infrastructure platforms tend to be part of the future scenario. However, within the South African context, the volumes do not always support the singularity evident in the markets and then such inefficiencies manifest within the logistics costs charged to clients.

The challenge for the industry is to provide a competitive entity movement and control services while providing services as shown in Figure 2. Shared infrastructure and services will play a major role to enhance the execution of the operating platform to increase the volume base through consolidation and therefore reduce the price per unit delivered. The request for enhanced flexibility, with reduced risk as shown in Figure 3, could change the role of governments and independent parties to provide the base infrastructure or, through privatisation, to tranship and transport the goods such as SAA, freight liners and Transnet. Therefore, Yes, it will affect the competitive arena. Thinking anew, it is clear that the game will and is changing and the ability to combine volume across multiple service providers and clients, with different freight documentation, might be a future possibility with information and technical platforms now able to support an integrated operating platform, with the use of middleware and open source tools.

Figure 3: Visibility and risk management: key challenges for industry

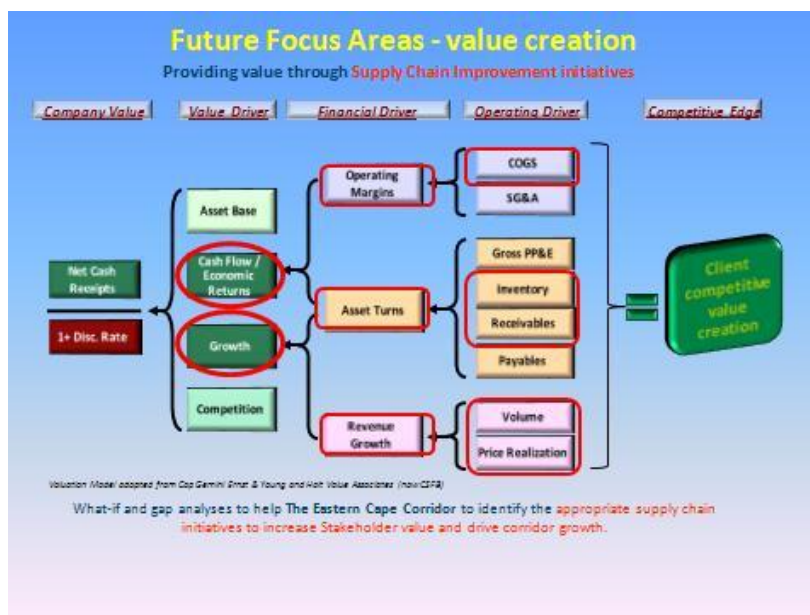


Trends in consumer behaviour is challenging the industry even further by prompting businesses to innovate new ways of satisfying consumer needs, which can create major supply chain inefficiencies and less than fully utilized transport. This has been evident in the local automotive sector where some of the OEM's have introduced daily national KANBAN delivery solutions which impacted on fill rates and delivery frequencies, while achieving the desired working capital reduction targets, but

negatively impacting on the environment with the increase of transport trips. The definition of “what matters most” has significantly driven business behaviour and incentives and these criteria would need to be influenced to a redirected metric set that would encourage a new way of behaving and thinking that is and will challenge the industry.

A lack of agreement on vehicle specifications, unit load design criteria and what constitutes “good operational practice in transport” limits the efficiency of vehicle utilisation. If one compares South Africa to benchmark figures in Europe where it is estimated that currently up to 50% of vehicle capacity in the European grocery industry and 35% across industry as a whole is substantially under-utilised, thereby creating unnecessary traffic which contributes to higher costs, environmental pollution and many knock-on inefficiencies will continue.

Figure 4: Value creation model

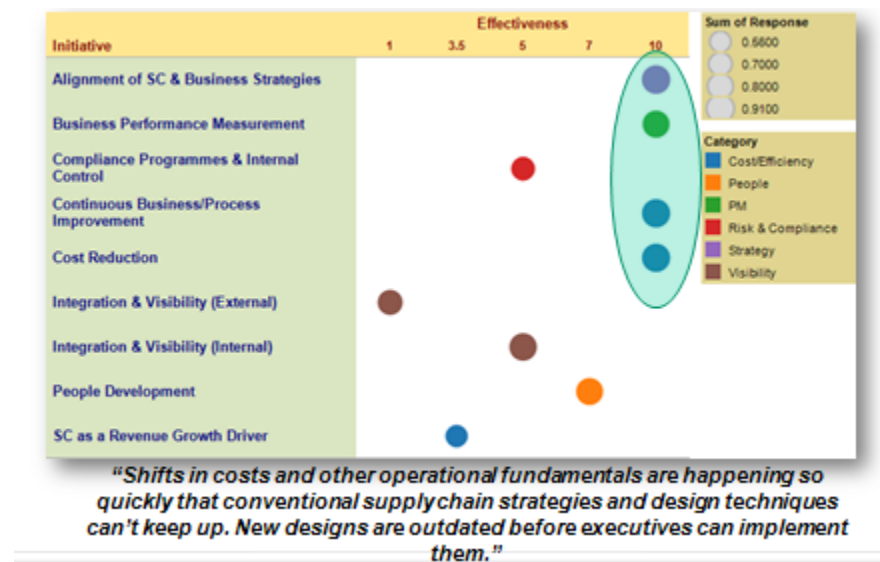


Most prospective clients are driven with the same set of metrics to create shareholder value. The generic business objectives, as shown in Figure 4, is used to identify the generic drivers that would represent most businesses’ key metrics, which will at the end drive the decision-making process within the industry. The client base will be opting for the solution that meets speed, cost and quality at the lowest price,

although LSPs have direct input to the route opted, while in some instances, the same rules would apply. The metrics provide the simplest possible insight to what matters most to the client base. The elements circled are the key business drivers that should be positively influenced by the solution offered by the ECC. The solution should provide a delta improvement within the metrics applied and should reflect performance against the differentiated offering defined. Should it be environmental factors such as a reduced carbon footprint, then that must be clearly showed against the economic value added for the client. The process has helped to define some key elements that the metrics could cater for, for example:

- Direct delivered cost competitiveness – reduce material cost
- Quality and reliability – reduce obsolescence cost, OTIF
- Improve availability - reduce inventory levels
- Speed – reduce cash cycles, free cash flows
- Environmental – reduce CO² emissions, enhance competitiveness

Figure 5: Supply chain pain points



Source: The Smarter Supply Chain of the Future – IBM Study January 2009

Figure 5 highlights the elements that are seen to be the most troublesome for clients with the effectiveness scale showing the areas where it is believed the most impact would be gained. Clients are saying that the following focus areas will have the greatest effectiveness to their businesses:

- Alignment of supply chain and business strategies
- Business performance measurement
- Continuous business process improvement
- Cost reduction
- People development
- Integration and visibility.

It defines strategy, performance management, as well as cost and efficiency control as the core elements that would need to improve. In the past, little focus has been placed on Logistics, but clients now view it as the area that would have the greatest impact to enhance their competitive position. They now expand their focus and include supply chain management as part of their corporate strategies. The economic climate has encouraged people to think of ways to reduce logistics costs through the application of best practices and shared services, whereas in the past, although still evident, procurement practices have not driven long term value creation, but rather short term cost per unit benefits, at the cost of changing service providers and absorbing the cost of change within their structural cost.

The challenge for South Africa is to get logistics expertise and service providers to cross the traditional boundaries that have been limiting the provision of end-to-end management and visibility services. The critical enabler to an effective supply chain is effective demand planning and scheduling, as well as the ability to transfer material seamless across modes without negatively effecting lead times and cost. These are critical differentiators. The ECC could lead the charge in this regard, especially given the importance of such a solution to the local competitive position. It is known, as announced by most automotive leaders the past year in papers read at the October 2009 South African Auto Week that the local SA supplier base is seen to be 30% to 40% more expensive than competing countries and a large portion of this cost is tied up within the logistics pipeline.

Developing an integrated ECC solution could provide the platform for:

- Multiple businesses linked to the ECC rail, feeder and route network
- A consolidated packaging solution

- Facility management, utilities and other support services
- Value added services supporting business key drivers allowing for postponement, dynamic bond storage, as well as consolidation and deconsolidation practices
- Product assembly services within a hub, without prospective clients having to duplicate infrastructure investments, could be a fantastic starting point for supporting local BBBEE business entities to be formed
- A logistics transport control web services centre
- Centralised transport services through the Coega shared services centre
- Consolidated infrastructure centres such as automotive PnAs.

Figure 6: Ad Or operations flow

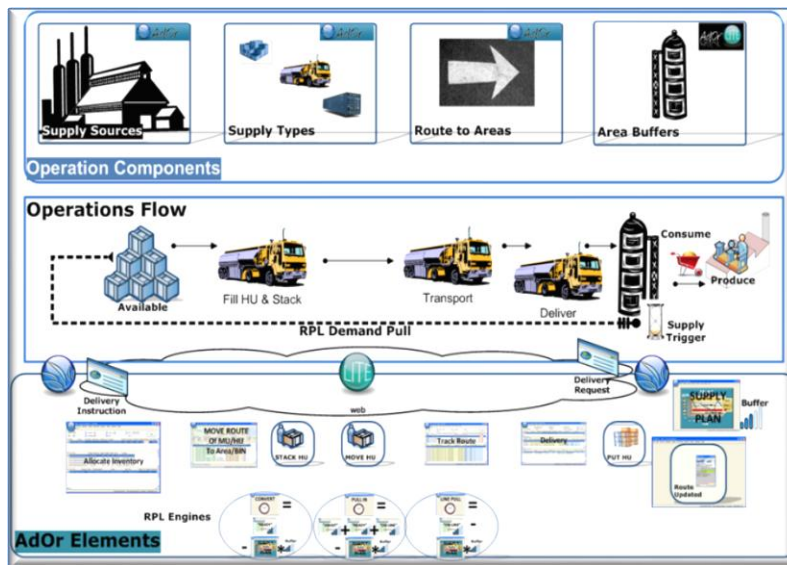


Figure 6 gives a simple illustration of flows from supply sources to areas and clients and illustrates that tools exist that could provide the required platform to bridge various systems, while providing entity movement control, tracking and entity traceability. The ICT platform should provide the functionality while being extremely competitive. It needs to provide visibility across multiple stakeholders and ERP platforms and reduce administrative and processing lead times with controlled EDI interface for status and route management. The ICT platform should thus allow

visibility up and down the supply chain to support planning and scheduling activities through service providers across the network for multiple clients and all the modes.

Scenarios and solutions

The Eastern Cape has made some excellent progress in infrastructure development and Logistics is seen by local government as a critical economic vehicle that could support economic growth along the corridor in the region. The extended role that the IDZs, ports and rail can play should be explored, considering the investments already made. A programme should be initiated to assist and enhance the probable return on investments and the realisation of the intended strategic objectives. Research should include scenarios to build on the uniqueness of the Eastern Cape that could assist in differentiating the ECC from the competitive programmes currently in progress. The investments already made should be a significant competitive advantage and should be seen as a potential strength.

The role of logistics service providers might significantly be challenged in the nature of the services they might offer while utilizing standardised transport networks. The privatization of operating platforms such as the rail route between the Eastern Cape and Gauteng, with LSP's having a vested interest, could all be scenarios that need to be explored pro-actively. Neutral entities to facilitate the exploration processes such as consulting bodies, the AIDC and the NMMU would be critical to drive the process.

The most simple and obvious short term gaps are to:

- Increase the volume per freight car on rail
- Consolidate local freight via a transport control framework as per the mentioned John Manville example for the ECC
- Investigate means to improve port competitiveness against global benchmarks
- Enhance road Infrastructure and consider a transport control service with the Coega IDZ
- Consolidate various business into shared infrastructure within the IDZ, such as automotive P&A and start dialogue with business leaders

- Drive mentorship programmes and training platforms to assist with trade experience that can assist in the execution process.
- Launch a collaborative programme with appropriate marketing focus to get local business to embrace the proposed corridor programme
- Utilise the Transnet infrastructure along the route.

The information analysed strengthens the argument that a holistic approach needs to be taken that would consider policy, privatisation and the broader imperatives to support an integrated transport solution.

Conclusion

As a network industry, transport requires elements such as infrastructure, vehicles, equipment, ICT applications and operational procedures to interact smoothly in order to move people and goods efficiently.

Today transport is at a transition point and the two significant drivers are the impact of environmental regulation and enhancements within ICT that will drive the transformation in the overall Supply Chain arena.

The Eastern Cape, even more so challenged, needs to find innovative ways to win national government and investor interest to establish a formidable and competitive transport corridor into South Africa that could have a significant impact on the economic development of this rural area, while being innovative to compete with global best practices and provide sustainability. The distinct disadvantages that would affect the possibility to establish a corridor and to sustain a competitive position is in the domestic transport due to the distance from the Eastern Cape to Gauteng. The ability to find means to offset this disadvantage, without competitors being able to adapt the same practice, would be the real asset test.

Differentiation methods such as utilising the Coega port due to vessel specifications, and finding solutions to ensure domestic transport competitiveness, would need further investigation. The ECC programme should strongly consider adopting concepts from the European Commission's Programme, called "A sustainable future for transport — towards an integrated, technology-led and user-friendly system", to fast track progress on this subject. The necessity to increase the sense of urgency

by focusing efforts on a programme that would differentiate the region from the others, should be realised, also in the protection of existing investments made.

South Africa and even more so the Eastern Cape needs to find ways to combine total freight volume unto common operating platforms. Realizing that this is easier said than done, it is surely an element in the transformation process that would significantly enhance infrastructure and load utilization and the overall competitive position of both South Africa and the Eastern Cape. This is not merely theory as the load control centre established by John Manville provides the necessary evidence. The initiative should evolve past the concept of a study to the formulation of an entity to see focus and attention applied that could facilitate the implementation of innovative business processes and practices enhancing the probability to create a viable ECC.

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