

# Addressing operational efficiency and port congestion in SA Ports

## A factual analysis of the World Bank CPPI report

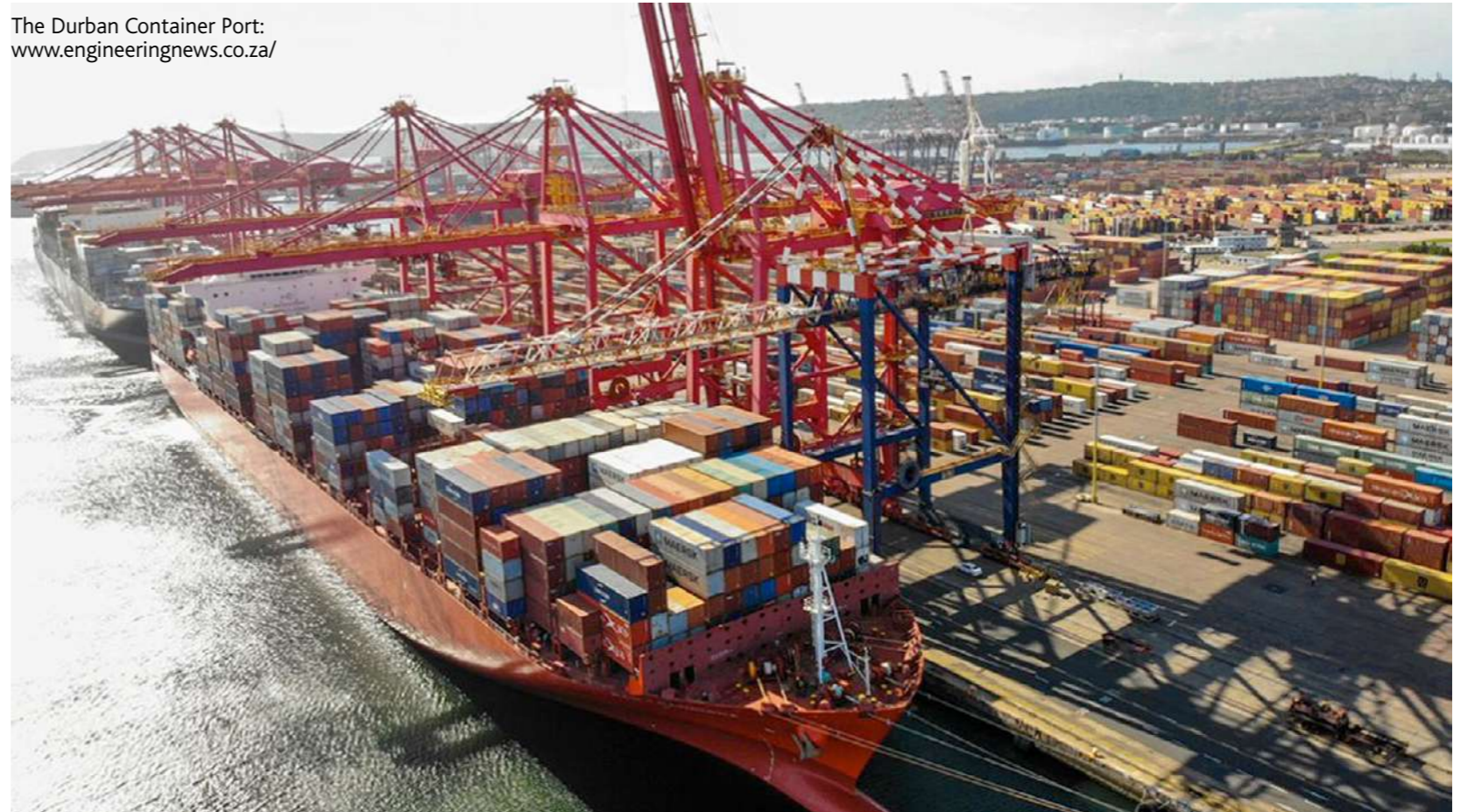
The recently released World Bank (WB) Container Port Performance Index (CPPI) report is damning – harming the reputation of our container terminals. At the outset, it is important to mention that the WB reports on a 2023 period, which does not take into account corrective action taken since then, nor does it measure progress achieved since Transnet has been under new management as part of the recovery and transformation strategy.

To contextualise, this was a period at the height of the crisis; the timing of its release unjustifiably tarnishes today's developments, casting doubt on the efficacy of robust corrective action underway and the hard work of the recovery teams and the leadership of the National Logistics Crisis Committee (NLCC) – a strong strategic Public | Private consultative initiative by the Government that serves as the anchor.

At the same time, we must acknowledge that there are valid points in the report, and we must not simply dismiss it but rather constructively use it as another building block and join hands to ensure that we improve our container port performance, the title and stated objective of the report.

The report's findings are based on an index or ranking of container port performance – not a score – and do not serve as a diagnostic tool to show where a port should improve. Improvement

The Durban Container Port:  
www.engineeringnews.co.za/



and corrective programmes are the lens industry, and Transnet – particularly Transnet Port Terminals – must continue to apply as a collective focus for our ports, and this is already well underway.

Moreover, the WB report uses rank aggregation, combining multiple rankings into a single ranking. This is a significant problem arising in many areas, and it is an overly simplified approach to providing a single ranking of a complex system that is a port call. Furthermore, as the WB concedes, values are imputed when combinations of port calls and

vessel call sizes are missing. The authors caution that the inherent risk with this approach is that poor or good performance within just one group will cascade across all call-size groups.

Therefore, the CPPI is undoubtedly a unidimensional view of port performance. It attempts to examine the system's performance and devise a single index to indicate whether it is good or bad.

Despite this methodology critique, SAAFF believes the report emphasised that South Africa lost time wasted at outer anchorages, which

# Mobile racking in SA Fruit Stores



Southern Storage Solutions – DEXION, has installed numerous mobile rack installations in conjunction with Barpro Storage which has increased the storage capacity of each facility without the expensive task of increasing the room size to cater for conventional pallet racking or drive in racking with all the associated extra refrigeration and electrical costs.

Traditionally pallets of packed fruit were stored by securing steel corner posts to each pallet and then storing another level of pallets on top. While doubling store capacity, this form of block storage effectively prevented stock rotation, increased stock damage and in some situations prevented adequate cooling. As fruit packaging became further differentiated, accessing stock quickly for an order became practically impossible.

Pallet racking was introduced into existing fruit stores to solve these problems. "Drive-In" racking made better theoretical use of the chilled space and reduced product damage. However the accessibility problem was not solved leading to "drive-in" lanes being only partially utilised for immediate access to individual product lines. The alternative was to use fixed selective racking, giving immediate access to every pallet but greatly reducing storage capacity.

Mobile racking was first used in 1997 in a fruit store outside Grabouw in the Western Cape.

## WHAT IS MOBILE RACKING?

Mobile racking consists of special rails that are laid in the floor during construction. Rails can also be retrofitted in existing rooms provided the floor is suitable by levelling the rails on the existing surface and pouring a 150mm reinforced slab. A low ramp is needed at the entrance. The mobile bases run on the rails and support pallet racking which is specially designed for use in a mobile application. The bases are motorised and energy efficient.

Maximum tonnage per base varies but should not exceed 360 tons. In larger stores mobiles are arranged in banks of up to 10 bases, each with its own moving aisle. The bases are controlled either by push buttons, remote control, or by an interface with the warehouse management system. An access aisle is created at the push of a button.

Safety measures include photoelectric beams down the length of each base and across the front of each mobile bank with additional emergency stops. To move one or multiple bases takes approximately one minute twenty seconds. Mobiles are designed to give lighting signals so that the lights come on only in open aisles. This results in energy savings as each light produces heat which must be removed by the refrigeration system.

The possibility of pallets breaking was removed by using a pallet support or saddle

beams in the middle of each pallet slot. These were painted yellow to assist with pallet placement especially on higher levels and increase rack strength. Another challenge arose when packed fruit stores remained in use for extended periods.

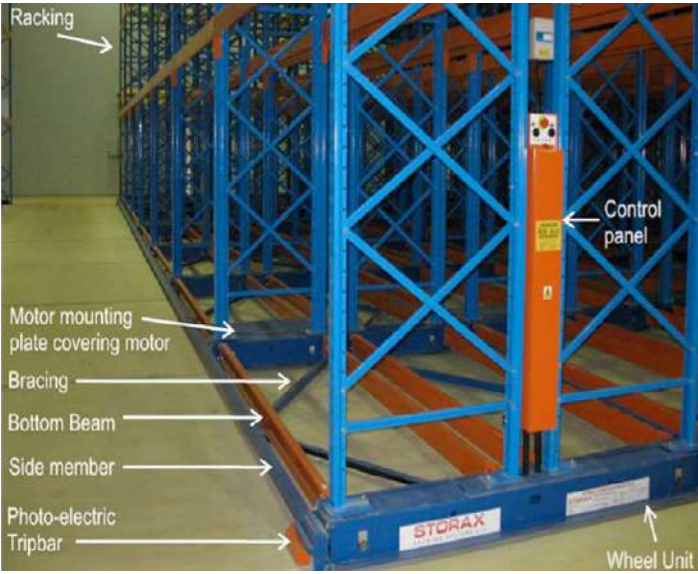
Improved ventilation in the mobiles allowed packed fruit to be chilled and store temperatures were reduced to around 0 degrees C. Frost heave, caused by moisture freezing under the floor, is not good for mobiles and recent installations have under floor insulation and heater mats to make sure this doesn't happen.

The advantages of using mobiles in fruit stores have become apparent over the years. More expensive than "fixed selective" or "drive in", mobiles can increase the practical capacity of a store by up to 75 or 80% while still giving immediate access to every pallet.

For all your storage solution requirements, contact Ron Bonthuys at Dexion.

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# Need a Storage Solution?



## Company Profile

With the head office based in Cape Town, **Southern Storage Solutions-Dexion** network provides support to customers on a national basis and into Africa. With over 55 years international experience in Materials Handling and Storage Systems, Dexion have the expertise required to solve any storage requirements.

Dexion offer a complete range of products, including all forms of racking, steel shelving, mobile shelving, conveyor systems, mezzanine floors, small parts bins, staff lockers and fencing as well as a complete advisory and system design service incorporating the latest CAD technology.

The company also offers a full racking inspection service which can be completed every six months, or where necessary on a more frequent basis. This includes a full audit on the storage system, a detailed report and recommendations on damage prevention. Certification can be provided on request.

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Mobile racking



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Mezzanine floors



Drive-in racking



Push back racking



Rack supported multi pick levels



Retail shelving



Staff lockers



Fencing



we (and Transnet) accept. Nevertheless, using a vessel's stay duration as the sole measure of container port performance without considering other factors like throughput and handling rates highlights key obstacles to using the findings to measure container port performance accurately on a comparative basis.

Furthermore, the WB concedes that "it is impossible to see from the data whether waiting time is voluntary or forced; it is difficult to find a suitable level at which to discount waiting time in this scenario."

The report also states that S&P Global uses tracking and observation tools to determine where vessels anchor and create zones accordingly.

We must, therefore, conclude that South African ports were excessively penalised for time lost at anchorage.

However, if we isolate port performance based on time and efficiency (as the WB sets out), we find that in Durban Pier 1, our GCH is around 15.8 moves per hour. At Durban Pier 2, our GCH was around 16.4 moves per hour. This is 33% and 30% below the global average, respectively, but by no means 'the worst' in the world.

Some examples show that the terminals reached 32 GCH in isolated cases, nearing global best practices. So, one might argue that a container terminal capable of sometimes achieving global best practices can certainly not be considered the worst in the world. But at the same time, South African port users come from a background where rates of around 25 were relatively common

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in the not-too-distant past, and this is what makes the current performance so worrying.

Furthermore, there is no mention of the volume or frequency of schedules. To look at some examples, regional ports included in the study, such as the Port of Maputo, only had 87 vessel calls and only serviced vessel sizes up to 5 000 TEUs.

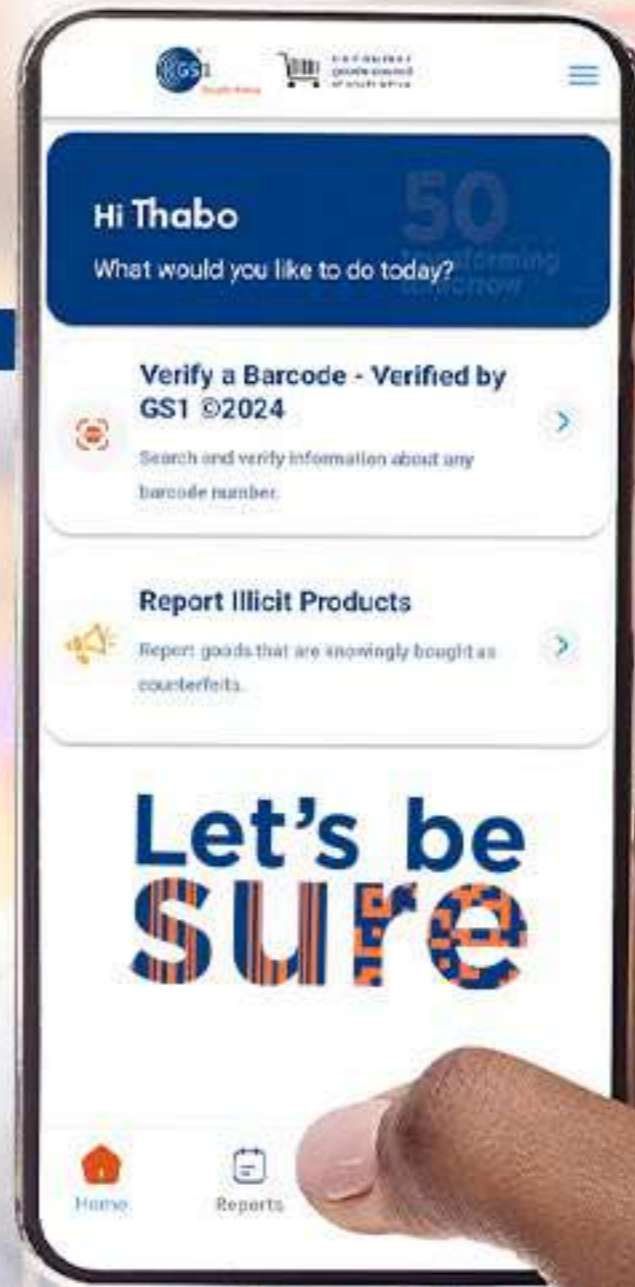
Another example is the Port of Nacala or Port Sudan, which only had 27 and 26 vessel calls, respectively and also serviced vessel sizes up to 5 000 TEUs. According to the WB's dataset, Cape Town and Durban had 196 and 499 vessel calls, respectively, and both handled larger Neo-Panamax vessels (8 501–13 500 TEU). So, to compare these examples to our ports when considering the volume or frequency of schedules is entirely invalid.

According to our analysis, vessel dwell time for Durban during the period was 83.2 hours at Pier 2

and 67.4 hours at Pier 1, respectively. This was against the global average of 40.5 hours. This shows that time spent at South African ports is too much, but arguably not the worst in the world.

What is critical now – a reality that the report emphasises in somewhat crude terms – is that our port system needs to bring in specialisation and investment through Private Sector Participation, allowing for competition between the ports and terminals within the ports (intra-port competition).

In our current landscape, whatever transpires politically is true for our logistics network. It is incumbent upon us to create a new dawn where the focus is on utilising trade, transport, and logistics as a critical driver for economic growth and development – especially for an open economy such as South Africa – at the dawn of a new multi-dimensional democracy. **SR**



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