

How we can unblock the biggest barrier to Nigeria's economic growth

By [Marleze van Loggerenberg](#)

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All eyes are on the Super Eagles, Nigeria's national soccer team, and one of the continent's best chances for success at the 2018 FIFA World Cup. But back at home, Africa's largest economy is struggling with ports infrastructure that simply can't keep up with demand.



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Major ports like the Lagos Port Complex, the Tin Can Island Port, Calabar Port, Port Harcourt, Delta Port and Onne Port experience tremendous volumes of sea and road traffic. Trucks and ships converge to carry exports out of the country (mostly commodities like oil) and imports into the country.

Nigeria imports a very high proportion of its consumer goods. Ships descend on the major ports at a relentless pace, serving the almost 200 million people in Nigeria, and much greater numbers in the surrounding regions.

The volumes seen in Nigerian ports vastly outweighs what we see on even the busiest day in Durban, Kwa Zulu Natal, South Africa.



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At Lagos' ports, it's not uncommon for trucks to queue for two to three weeks, waiting to get into the port.

With poor road networks connecting the port, this has a ripple effect on traffic congestion levels throughout the city, and represents a loss of productivity for the local economy.

Platform-based approach

As is the case with many port operations worldwide, Lagos' ports can't simply be expanded, as they suffer from space

constraints on all sides.

“ Addressing the challenges of port congestion and lengthy delays can only be done by optimising the ports' operations. ”

The idea of a 'smart port' could go a long way toward solving these problems for Nigeria. Smart ports integrate information, communication, and power technologies into a centralised management system – allowing port authorities to control every aspect of a port's logistics and operations.



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While there's no 'definition' of what makes a smart port, many of the technologies with strong application in this space include the likes of: geofencing and geolocation technology, sensors on equipment, other IoT technology, mobile devices and apps, self-driving transportation, aerial and underwater drones, augmented reality, digital signatures and documentation, blockchain-enabled contracts, and big data.

“ By their very nature, ports connect various stakeholders and businesses together, providing an absolutely essential link in so many different value chains. ”

Rather than isolated solutions, port operators should look to create digital platforms, allowing others in the ecosystem to engage with the port and consume information.

So, for instance, trucking companies could log into an online system to book scheduled times to be at the port, or shipping companies could upload all legal documents via a secure vault. All interactions within the port and into its associated parties could be conducted on this integrated digital platform.

Sensors, biometrics, smart-energy, autonomous vehicles and blockchain

But digitising the port extends further than simply optimising the cargo handling schedules. Smart sensors also allow for 'predictive maintenance' where equipment and infrastructure send automatic alerts to port authorities when they're at risk of failing or breaking.

Advanced access and identification technologies – using the likes of facial recognition and video surveillance boosted by artificial intelligence (AI) – can also ensure safer ports and less opportunity for any insidious activity.

Then, by linking power management systems to this new digital platform, port authorities can more easily track and reduce energy usage, while also setting themselves up to integrate green power solutions (like wave, wind and solar) into a local



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Autonomous vehicles could also play a surprisingly big role in the port of the future. Unlike with self-driving cars in the broader consumer realm (which is an enormously complex endeavour), self-driving tugboats and container vehicles are very possible, as they operate in a constrained environment.

Within the cargo containers themselves, blockchain technology combined with unique serial numbers can be used to simplify and secure assets, with verifiable proof of their origin and ownership.

“ Overall, Nigeria's economy continues to show strong resilience in a fairly flat global climate but to continue growing, and to retain its position as the gateway to West Africa, Nigeria needs to accelerate throughput at its ports. ”

At the moment, the ports system represents a huge bottleneck in the economy.

By connecting latest-generation technologies and multiple stakeholders into a digital platform, it's possible to improve efficiencies and process ever-greater volumes of cargo.

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