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Titled
‘Roles of Rail Transportation in Optimal Port Operations’

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Overview

- Introduction
- The Role of Transport in Economic Development
- Port Operations Optimization
  - Port Development in Nigeria
  - Nigerian Ports as Economic Gateway
- Rail Transport and its Role in the Seaport Development
- Conditions for Developing Nigerian Ports
- Nigerian Railway Corporation
- Conclusion
Introduction

- It is universally recognized that transportation is a crucial factor for sustained economic growth and development of a nation.
- Transportation is the movement of people and goods from one place to another.
- Transportation is often a derived demand (social needs, economic imbalance, etc).
- The adequacy of this vital infrastructure is an important determinant of the success of a nation’s effort in facilitating international trades, diversifying its production base and linking together resources and markets into an integrated economy.
- In Nigeria today movements (goods and Passengers) are mostly by road while water, rail and air modes are waiting to be fully developed and optimized.
Transport plays a key role in the economic and social development of any nation.

- A well functioning transport system stimulates national development, allows unhindered movement of goods and services and allows vital links with facilities among others.

- The different transport modes rail, road, water and air have specific advantages and uses. Hence the overall efficiency of the transport system depends on the development of these modes.

Transport’s contribution to economic development includes the following:

- **Network effects**
  - linking more locations exponentially increases the value and effectiveness of transport

- **Performance improvements**
  - reducing cost and time for existing passenger and freight movements increase transport’s contribution to economic growth

- **Reliability**
  - improves time performance and reduces loss and damage, thus reducing economic drag

- **Market size**
  - access to wider markets adds to economies of scale in production, distribution, and consumption, thereby increasing economic growth

- **Productivity**
  - transport increases productivity gained from access to a larger and more diverse base of inputs such as raw materials, parts, energy, and labor, and broader markets for more diverse outputs
Arguably, the potentials of the maritime sector cannot be fully utilized towards increasing international trade capacity without the development of the land modes, i.e. road, rail;

The versatility of transportation industry is contingent upon an integrated system, a means by which the frontier of international trade can be expanded.

Effective and efficient Railways is crucial to optimizing Ports operations.

This informed the Federal Government of Nigeria’s commitment to resuscitating the rail system in Nigeria.
The history of port development in Nigeria dates back to the middle of 19th century. This was long after the onset of sea borne trade and transactions which followed the adventures of early explorations on the African coasts.

- In 1906, the construction of the first length of the East Mole commenced. The construction of railway from Lagos to Ota and then to Abeokuta provided easy transportation of stone needed for the construction of the mole.

- On February 1, 1914, the first mail-steamer S/S ‘AKOKO’ drawing 5.64 metres entered the Lagos harbour.

- Decision to develop Apapa Port and Port of Port Harcourt was taken in 1913 and construction of the first four deep-water berths of 548.64 metres long at Apapa began in 1921.

- The establishment of the Nigerian Ports Authority (NPA) in 1954, brought a new impetus in the development of Nigerian sea ports.

- The activities of Nigerian Ports were commercialized in 1992, and eventually concessioned in 2006 on Landlord Model.
Port Operations Optimization – Nigerian Ports As The Economic Gateway

- According to Ndikom, 2008; The maritime industry occupies a very prominent position in the economies of nations, especially Nigeria.

- Of all maritime activities, however, shipping stands as the greatest boost to a nation’s economic growths and international status.

- The shipping industry embraces all maritime-related business activities; almost all maritime activities revolve around shipping. The oil and gas sector, for instance, depends on shipping for transportation and even distribution.

- The port is a point of trans-shipment for traffic between sea and land. It is the focus of broad spectrum of maritime activities generating significant jobs and economic growth.
Rail Transport and its roles in the Seaport Development

The Apapa and Port Harcourt Ports were rail served however the planned rail component in modernizing port process are yet to be fully implemented.

**Roles Rail plays in Port Development:**
- Port Decongestion – reduces vehicles (Trucks/Trailers) coming into the Port
- It is a strategic element that has both economic and competitive advantages
- Rail helps in bulk movement of Cargo to the Hinterland and/or ICDs
- Decentralizes clearing systems
- It reduces negative externalities on people and environment
- It promotes growth in capacity without affecting the Port-City relationship
- It increases hinterland accessibility efficiently and sustainably
- Fosters security and safety of cargos at the Port
- Encourages Efficient Handling Cost and minimizes customers interface
- It fosters the integration of logistics, etc
Steps to optimize Port Optimal Service for Cargo movement

- Enhancing mutual Cooperation between shippers and Railway
- Enhancing better use of existing rail assets
- Developing Intermodal transport facilities with the plan to link the major ports and IDPs with rail lines
- Entrenching seamless rail-port operations.
- Key into present day technology in improving freight management capacity and capabilities.
• Increasing the capacity of rail transport through investment on track and rolling stock is essential
• Grade separation within the port complex to improve road safety
• Creating marshalling yard within the port
• Linking all other ports by rail
## Modal Choice Matrix

<table>
<thead>
<tr>
<th>Size of Order/Load</th>
<th>Over 100T</th>
<th>20T</th>
<th>Pallet</th>
<th>Parcel</th>
<th>Delivery Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Road</td>
<td>Road</td>
<td>Road/Rail</td>
<td>Rail/Sea</td>
<td>Sea</td>
</tr>
<tr>
<td></td>
<td>Road</td>
<td>Road</td>
<td>Road/Rail</td>
<td>Rail/Sea</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Road</td>
<td>Road</td>
<td>Road/Rail</td>
<td>Air/Sea</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Post/Road</td>
<td>Post/Road/Air</td>
<td>Post/Road/Air</td>
<td>Post/Air</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Short</strong></td>
<td><strong>Medium</strong></td>
<td><strong>Long</strong></td>
<td><strong>Very Long</strong></td>
<td></td>
</tr>
</tbody>
</table>
• An Effective Rail Transportation system will have:
  ▪ A good and well maintained track network
  ▪ Standard, modern and well controlled railway stations
  ▪ Well equipped modern workshops and running sheds
  ▪ Modern mechanized workshop and track maintenance equipment
  ▪ A state-of-the-art signaling and communication system
  ▪ Adequate fleet of Locomotive and Rolling Stock
  ▪ Highly skilled and well motivated work force
Historical Development of Railways in Nigeria
The Federal Government in its determination to revive and modernize the Railway System in line with the 25 year Strategic Vision, adopted a Systematic dual approach.

This entails the rehabilitation of the entire existing narrow gauge lines simultaneously with the development of standard gauge lines.

The Nigerian Railway Corporation is rigorously following the strategic vision in developing its short and medium term plans.
The Nigeria’s Vision 20:20:20 is a long term plan to stimulate growth with the aim of putting Nigeria among the top 20 economies in the world.

The National Integrated Infrastructure Master Plan (NIIMP 2013-2043) is a 30 year plan that covers the “core” infrastructures (transport, energy, ICT and water) and “other” infrastructures (agriculture, mining, housing and social infrastructures) with the First Priority (2017-2020) about to be finalised.
Modernization Programs (Construction of New Standard Gauge Lines)

- Construction and rehabilitation of the Itakpe – Ajaokuta – Warri Standard Gauge is in advance stage of completion and is expected to commence operations by August 2018.

- Construction of Abuja (Idu) – Kaduna Standard gauge is concluded and commercial operation has commenced with a flag off and commissioning by President Muhammadu Buhari in July, 2016.

- Construction of Lagos – Ibadan Standard Gauge (double track) 2 x 180km has been awarded and implementation has commenced to be completed by December, 2018. With an addendum to extend the track to Apapa Sea port complex.
Where we are - Proposed Standard Gauge Route
<table>
<thead>
<tr>
<th>S/N</th>
<th>Routes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lagos - Abuja (High Speed 550km)</td>
</tr>
<tr>
<td>2</td>
<td>Ajaokuta (Eganyi)-Obajana-Jakura-Baro-Abuja with additional line from Ajaokuta - Otukpo - to include the Anyigba - Ejule - Idah - Adoru - Nsukka - Adani - Omor - Anaku - Aguleri - Nsugbe - Onitsha Rail Line (821km)</td>
</tr>
<tr>
<td>3</td>
<td>Zaria-Kaura Namoda-Sokoto- Illela -Birnin Konni (Niger Republic - 520km)</td>
</tr>
<tr>
<td>4</td>
<td>Benin-Agbor-Onitsha-Nnewi-Owerri-Aba with additional line from Onitsha-Enugu-Abakaliki (500km)</td>
</tr>
<tr>
<td>5</td>
<td>Eganyi(Near Ajaokuta) - Lokoja - Abaji - Abuja (280km)</td>
</tr>
<tr>
<td>6</td>
<td>Kano – Bichi - Katsina – Jibiya (354km)</td>
</tr>
<tr>
<td>7</td>
<td>Sokoto – Birnin Kebbi - Jega –Yauri - Makera with a branch line to Kontagora (408km)</td>
</tr>
<tr>
<td>8</td>
<td>Aba – Ikot Ekpene - Ibiono - Itu (Spur Uyo) Odukpani Calabar (340km)</td>
</tr>
<tr>
<td>10</td>
<td>Calabar -Ikom – Obudu – Ogoja – KatsinaAla – Wukari – Jalingo –Yola – Maiduguri (1,069km)</td>
</tr>
<tr>
<td>11</td>
<td>Kano – Nguru – Gashua – Damaturu – Maiduguri – Gamboru Ngala (707km)</td>
</tr>
</tbody>
</table>
Introduction of container shuttle services between the following:
- Apapa Port – Ebute Metta Junction/Ijoko
- Apapa Port – Omi-Adio in Ibadan

The following are proposed to take off soon:
- Apapa Port – Wasimi in Ogun State
- Apapa Port – Abese in Ogun state

Proposed investment in railway equipment and rolling stock for optimizing the Apapa decongestion project.

Proposed concession of its narrow gauge track network to Transnet Consortium who majorly is interested in freight/cargo movement.

The Lagos – Ibadan track construction is being linked to Port for swift decongestion of the port.
<table>
<thead>
<tr>
<th>YEAR</th>
<th>PASSENGER PERFORMANCE (NUMBER)</th>
<th>FREIGHT PERFORMANCE (TONS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yr. 2010</td>
<td>1,514,215</td>
<td>138,533</td>
</tr>
<tr>
<td>Yr. 2011</td>
<td>3,493,443</td>
<td>341,396</td>
</tr>
<tr>
<td>Yr. 2012</td>
<td>4,155,988</td>
<td>182,465</td>
</tr>
<tr>
<td>Yr. 2013</td>
<td>4,328,787</td>
<td>87,385</td>
</tr>
<tr>
<td>Yr. 2014</td>
<td>4,685,570</td>
<td>199,432</td>
</tr>
<tr>
<td>Yr. 2015</td>
<td>2,581,046</td>
<td>161,694</td>
</tr>
<tr>
<td>Yr. 2016</td>
<td>3,153,436</td>
<td>119,842</td>
</tr>
<tr>
<td>Yr. 2017</td>
<td>2,593,744</td>
<td>141,186</td>
</tr>
</tbody>
</table>

**Passengers**

- Yr. 2010: 13% (6%)
- Yr. 2011: 10% (12%)
- Yr. 2012: 16% (17%)
- Yr. 2013: 13% (10%)
- Yr. 2014: 16% (10%)

**Freights (Tonnes)**

- Yr. 2010: 16% (10%)
- Yr. 2011: 13% (12%)
- Yr. 2012: 16% (17%)
- Yr. 2013: 10% (10%)
- Yr. 2014: 16% (13%)
- Yr. 2015: 6% (10%)
- Yr. 2016: 16% (10%)
- Yr. 2017: 13% (10%)
Concession of the 3,505 Km (both Western and Eastern lines) Narrow gauge rail line will result to the following:

- Attract a lot of foreign investment into the economy.
- Improving Rolling stock availability and track conditions.
- Complete the ongoing track rehabilitation projects.
- Rehabilitate the outstanding sections of Narrow gauge to provide Rail linkage to Barro river port
- Improving the conditions of the Narrow Gauge track for smooth and safer haulage of passengers and freight.
- Collaborate with stakeholders to ensure that all IDPs are linked by Rail track
- Improvement in the volume of freight moved by rail from the current average of 25,000 tons/month to well over 250,000 tons/month by 2023.
- Generate employment opportunity for more Nigerians
- Provide capacity building through transfer of skills and technology.
Government has approved the establishment of six (6) Inland Container Depots (ICD’s) and Container Freight Stations (CFSs) in different geo-political zones under a PPP arrangement:

- Isiala-Ngwa in Abia State
- Ibadan in Oyo State
- Kano in Kano State
- Kaduna in Kaduna State
- Heipang - Jos in Plateau State
- Funtua in Katsina State
- Maiduguri in Borno State

As part of the National Integrated Infrastructure Master Plan (NIIMP 2013-2043), all the major Sea Ports, River port at Barro, Inland (dry) Ports and Inland Container Depots are to have rail links for seamless intermodal transportation.
EXISTING RAIL-SERVED DRY PORT

ICD

KANO

BAUCHI

IBADAN

ABA

KADUNA (1980s)

KANO (1980s)
The Challenges: Cargo Transport

- Over dependence on one mode – the Road
  - Road blocks, multiple taxation etc.
  - Traffic Congestion
  - High Operating/Maintenance Costs
  - Dilapidated Infrastructural Facilities
  - High Rates of Accidents and Poor Safety Record
  - Environmental Pollution and High Energy consumption
  - Decades of neglect of the rail mode
  - Inadequate modal Connections
  - Resultant high cost to users of transport services
  - Absence of rail connection to the Tin can Island Port which means that both trucks and tankers compete with commuter traffic.
The Challenges: Rail Transport

Finance

Operational

Human Resources

Security

Legal and Legislative
Conclusion

Nigerian Ports development is key to achieving the economic vision 20:20:20. This however cannot be attained without an efficient and effective rail system.

• The Government cannot do it alone. It requires the involvement of private sector.

• PPP is an avenue to compliment Government efforts in expanding rail infrastructure through Port-Rail Integration

• As stakeholders in the transportation industry, you are welcome to join the train as we together move to build an effective, safe, sustainable and affordable Transport System for our Country and lay appropriate legacy for the future generation.

Imagine a situation where by:

All the major Seaports, Airports and Inland Container Depots are linked by rail line.

Adequacy of Locomotives and Rolling stock.

Appropriate Laws regulating movement of heavy and long haulage Trucks on our road are enacted and enforced

Enough of that imagination: The continent will be able to deliver quickly on the Economic Recovery and Growth Plan (ERGP).
THANKS
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