THE ROLE OF SEAPORTS IN THE QUICK TURN–ROUND OF VESSELS AND EFFICIENT CARGO HANDLING

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INTRODUCTION

The purpose of this paper is to dwell on the role of seaports in the improvement of the maritime sector in the transport chain. In doing so, I will domesticate it on how seaports have grown/improved in Nigeria since the port reforms that eventually took place in 2006 when concessioning of port facilities emerged.

1. WHAT ARE SEAPORTS

- They are intermodal international business hubs that exist to facilitate the efficient transfer of cargo from maritime transport to other modes such as road transport (highways), rail and inland waterways.
- Ports not only serve as gateways to a nation's economy but also contribute to its growth.
- They might be exclusively committed to the business of cargo handling or may exist in support of larger economic activity. For example, the LNGs and refineries have their own terminals for the evacuation of their products.

2. OTHER PURPOSES OF THEIR EXISTENCE ALONG WITH OTHER AGENCIES

- To canalize goods traffic/revenue generation so that goods coming into the country from international routes by ship, aircraft or vehicles passing through approved ports where Customs and Nigeria ports Authority can collect tariffs to defray government budgets. This gives government effective control over the movement of vessels to safeguard the diversion of imported goods through unapproved channels and avoid payment of duties and other charges.

SOME INFRASTRUCTURES AND SUPERSTRUCTURES FOR PORT OPERATIONS ARE:-

S/N	INSFRASTRUCTURE	SUPERSTRUCTURE
1.	Basic infrastructure	(a.) Maritime access channel and port entrance (b.) break waters (moles) (c.) Inland access route (Road, Rails, and Inland waterways, etc.
2.	Operational port infrastructure	(a.) Quay walls, jetties and finger piers (b.) Navigational aids (c.) Mooring buoys (d.) Marshaling yards, dry-docks etc.
3.	Port Superstructure	(a.) Sheds, warehouses and stacking areas (b.) Paving and Surfacing (c.) Tank farms and Silos (d.) Packing areas, etc.

3.DEFINITION OF SHIPS TURN-ROUND TIME

- This is the total time that a vessel spends at a port from when it enters until it exits. Turn –round time can be divided into two parts i.e. time at berth and time outside
- If a port does not have basic information on this, it can compute some average turn-round time by dividing some estimated total vessel's stay over the number of vessels calling at the port during a particular period.

4. THE NEED TO ACHIEVE QUICK TURN-ROUND OF VESSELS

FOR A COUNTRY

- To reduce the cost of living of the citizens of a country because demurrage and insurance payments due to port delays can cause increase in the cost of imported goods which the citizens of a country pay for eventually

FOR SHIP OWNERS

- Ports become unattractive in their choice as ports of call or voyage routes because of demurrage payments.
- Ship owners do not want to frit away the advantages of increased speed due to cancellation or postponement of sailing schedules that make their business unreliable and uncompetitive.

- It is well known in shipping economics that vessels make money when they are en route and lose money when they over stay at a port.

5. PORT PERFORMANCE INDICATORS

These are the parameters or indices to measure the performance of a port or terminal

THE NEED

- To benchmark and adequately deploy best operational practices, performance indicators need to be established so as to measure the level of performance a port may achieve.
- This is measured in terms of speed with which a vessel is dispatched.
- Rate at which cargo is handled
- Duration of cargo stay in a port prior to shipment or before dispatch .
- where there is no computer model port performance can be easily computed from available statistics obtained from both the regulator and the concessionaire. And these can be updated regularly in order to study the evolution of a port over time as well as assess the performance of a port if the result the concessionaire reached are satisfactory

EXAMPLES OF PORT PERFORMANCE INDICATORS

S/N	INDICATORS	BASIS OF COMPUTATION
1.	Average ship turn –round time	Total hours vessel stay in port divided by total no. of vessel.
2.	Average tonnage per vessel day (hour)	Total tonnage of cargo handled divided by total no. of vessel days (hour).
3.	Average vessel time at berth	Total hours alongside berths divided by total no. of vessels.
4.	Average waiting (idle) Time (a.) for berth (b.) due to rain (c.) other causes	 Total hour of vessels waiting for berth divided by total no. of vessels berthed Total hour of work stoppage due to rain divided by total no. of vessel worked. Total hour of stoppage attributed to the cause divide by total no. of vessels worked.

5.	Average waiting rate (5a/3)	Total hours of vessels waiting for berth divide by total hours alongside berths.
6.	Tons per gang hour	Total tonnage handled divided by total no of gangs X total number of hours worked.
7.	TEUs per crane (hook) hour	Total number of TEUs handled divided by total number of cranes used X total number of hours cranes worked.
8	Berth Occupancy rate (%)	Total time of ships at berths X 100 divided by total no. of berths.
9.	Berth throughput	Total tonnage of cargo handled at berths divided by total no. of berths.

Source: - December 1993 Transport No. PS-6- the World Bank.

Physical indicators can be measured.
This measures cargo movement by a port and how fast ships are attended to and how quickly cargo is transferred to other modes.

Time measure is one of the basic indicators which show the total volume of traffic that the port receives. Some examples are below.

a. Ship turn round time
b. waiting rate
c. Berth occupancy
d. Working time over time at berth
e. Cargo dwell-time , etc.

6. CARGO HANDLING

Cargo handling equipment in a port is determined by the nature of the cargo that is handled and by the nature of packaging used

A. For a general cargo port or terminal, the ship's derricks or cranes are prominent. This is coupled with slings, hooks, shackles, etc. that are used for holding the actual cargo for discharge unto quays, waiting vehicles, train or into a shed or warehouse by forklift.

B. dry bulk cargos like salt, sugar, wheat ,etc have their type of specialized cargo handling equipment like pneumatic suction and conveyor belt system which quickens the rate of discharge. Ship's derricks could also be used with grabs, hoppers and specialized vehicles or rail wagon.

C. Liquid cargo (tallow, bitumen or petroleum products)
this is by pump and pipes from the vessel into the receiver's tank or receptacles

7. CONTAINER HANDLING EQUIPMENT

- There are many types of cargo handling equipment to be used for discharging and loading containers. These could be gantry cranes for discharging unto waiting tractors or trailers and moved to the stack for off-loading by straddle carrier or RTGs or top loading container handlers. Some ports also use mobile cranes such as Liebherr LHM400 or 550. Gantry cranes are very expensive and need specialized operations.
- Not all ports can afford such and consequently rely on using spreaders with the vessel's cranes to discharge unto waiting tractors and moved into the stack to be discharged by top loading container handlers and other related machines.
- It is paramount to note that for every cargo for which a ship's derrick/crane would be used, it is important that everything should be done to fasten the hook circle. This could be achieved through adequate training of the crane operator who should be skilled and able. It has been observed in some cases that crane and plant operators have passed their prime. Such operators should be replaced with those of the rightful age and training.

8.PORT REFORMS (WITH WORLD BANK OVERSIGHT)

With the introduction of the landlord model of port management, the Ports in Nigeria experienced some seismic changes

Agreement were signed with terminal operators and milestones to be reach within a time frame. They are monitored constantly by NPA and occasionally by BPE and parliamentary oversight committees to ensure that their following functions are carried out using international best practices.

a) Physical development of the terminals
b) Provision of new adequate and relevant plants for their various operations.
c) Employment and training of labour and their deployment
d) Employment of professional hands. Some of these have come from abroad and can compete with any in the world to run their terminals. Their Nigerian counterparts are also equally trained.
e) Discharge and load vessels.
f) Discharge, custody and delivery of cargos
g) Maintenance of terminal security

9. NEW ROLE OF NPA

With the port reforms of 2006, NPA divested itself of some of its functions and handed them over to the terminal operators and is now left with the following:-

A. Harbour and marine services of e.g. provision of tugboats, pilot cutters and other vessels to manoeuvre, position or turn safely while berthing or sailing.
B. Conservancy services- clearing and dredging of the approach channels, provision of navigational aids ,erection of channel breakwaters, etc
C. Some engineering works like dockyards.
D. Undertake overall security of the port.
E. ISPS compliance and periodic assessment and upgrading.
F. Monitoring of terminal operators to ensure that the terms and conditions of the concession agreements are strictly adhere to.

10. How the port reforms have fared

It is universally acclaimed that the Nigerian ports have fared much more better under this concession arrangements with the adoption of international best practices by the concessionaire and NPA.

- Ship turn-round has reduced along with reduced vessel dwell time at our ports
- Cargo throughput has also increased
- New and modern plants and equipment to fasten cargo operations.
- New infrastructure built and old ones upgraded.

However some challenges still remain.

These include

- The inadequate provision of harbor crafts such as tugboats and pilot cutters even with the addition of some new ones
- Some ports in the country are disadvantage because of the shallow draft in the channel leading to their ports. This shows that the NPA and the channel companies vested with this function have not performed truly well.
- The absence of economic regulator as provided in the new port reforms law. The appointment of the Shippers' Council is being challenged in the courts.
- Changes in the fiscal and other policies of government that has let to down turn in trade and maritime activities.

11. CONCLUSION

For ports to achieve higher turn round time of vessels and efficient cargo handling in Nigeria , the milestones already laid will have to be improved upon and constantly monitored and upgraded:-

- Efficient, adequate and serviceable plants and equipment should be provided i.e. asset development and management including infrastructure development and facilities.
- Proper synergy amongst port management, terminal operators, ship owners and other stakeholders. This will encourage feedback for continuous assessment and improvement of services and customer satisfaction
- Communication policies and application of Information Technology solutions in areas of vessel traffic, terminal operations and logistics, will ensure generic vision of activities in a holistic manner and thereby fasten decision making and improve efficiency.
- Harmonizing and encouraging public private partnership to encourage private capital investment not only in the ports but also in the other modes of transport.
- Issues of safety, security, Employee's welfare and corporate social responsibility should be given priority.
- The issue of linkages and connectivity is important. This could be rail or road or both. It is extremely important that ports are adequately served by good road and rail networks to enhance seamless evacuation of goods by vehicles and/or rail. Without the availability of these, bottleneck could be created thereby impede quick turn-round of vessels. The present situation of ports in Lagos and the failed and congested road network of the Apapa-Oshodi corridor and Port-Harcourt-Onne axis in the East are examples.
- all parties to the concession agreements should strive to implement their part of the agreement religiously for the deserved results to be achieved and usher in even more efficient port service.
- Effective monitoring of the operations and activities of the terminal operators should be done physically and use of performance indicators so as to employ accepted international best practices.
- The matter of the appointment of the industry regulator should be concluded to enable an important arbiter to come to the maritime scene.

Thank You

- Harmonizing and encouraging public private partnership and private capital investment. Cooperation and collaboration can cost effectively provide the public with quality services and provide adequate facilities. This will enhance best turn –round time of vessels.
- Another aspect is area of lease of capital equipment and terminals based on efficiency and productivity.
- Issues of safety, security, employees' welfare, corporate social responsibility (CSR) should be paramount.
- Issues of risk management, mitigation, insurance are indispensable.

- Also the issue of linkages or connectivity is paramount . This could be road or rail or both . It is extremely imperative that ports are adequately served by good road and rail networks to enhance seamless evacuation of goods by vehicles or rail. Without the availability of these, bottlenecks could be created thereby impeding quick turn-round of vessels, The present situation of the ports in Lagos and the failed and congested road network of the Apapa-Oshodi corridor and Port Harcourt – Onne axis in the east are examples .

Thank you.

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