Maximizing Local Content In The Offshore Maritime Sector Through Drydocking Facility Investments

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Abstract

The work assessed the level of infrastructural investments in ship dry docking activities in the west coast of Africa with a view to deriving entrepreneurial activities within the offshore technology sector. The Equatorial Guinea region in the East Atlantic coast has come to stay as a major source of oil and gas to such continents as Europe, North and South America and Asia. The rising supply of oil and gas from the region has thus made necessary the development of marine engineering technology in the sub region. The absence of a dry dock/ship repair yard in the whole of West and Central Africa that can handle even a single ship of the tanker and gas ship range poses great difficulty to logistics operations in the region. Analysis of the problem using multivariate statistical methods for solutions was applied to obtain a face view evaluation of the present situation. Results were used to suggest areas for local content contribution to the subsector.

Keywords: Local content, marine engineering technology, dry docks, Gas ships, Tanker ships, offshore technology

1.0 Introduction

Shipyards make very high use of drydocks .Especially when one considers the role that dry docks play in the process of ship building ,repairs and maintenance .When one divides facilities in a shipyard to consist of production sites and launching sites ,then the role of dry docks and other ship reception facilities becomes visible .Dry docks in this sense is just a part of launching facilities in a building site among which other components may include a sloping shipway ,a building basin and or ground level assembly area .In the modern world sloping shipways are becoming outstanding allowing building basins (eg graving dry docks) and ground level building site as facilities. While building basins mainly consists of graving dry-docks, ground level building sites consists of floating docks ballasted and deballasted to a fixed platform.

While methods of launching apart from the above are usually applied to small vessels, the graving dry dock ship launching technology and the ground supported floating dock technology are applied to larger vessels. It is thus on this basis that the size of dry docks available in a region can be used to assess the repair

capability of the region to vessels calling in the water region.

TABLE 1.DIMENSIONS OF SELECTED DRY DOCKS

Place	Length in metres	Entrance width in meters	Depth in meters
Cape town	368	45	14.0
Southampton	365	41	15.4
Quebec	350	32	12.2
Mumbai	304	30	10.1
New York	322	43.5	11.6

Sources Gupta and Gupta (2011)

1.1 OTHER LAUNCHING METHODS

Facilities employed in the launching of vessels are often classified to include the following:end launching methods, side launching ,floating dry-docks, ground supported and floating platform ,ground supported non trimmable platform lift, graving dock ,marine railway, ground supported trimmable platform lift ,four bar linkage ground supported platform ,piggy back launching etc. Taggart (1980)

1.2 OBJECTIVE

This paper aims at demystifying the entrepreneurial opportunities attainable through the building of an offshore floating ship drydock shipyard facility in the Gulf of Guinea.

2.0 LITERATURE REVIEW

The oil and gas master plan of Nigeria aims at the technological integration of Nigeria's oil and gas resources both at the upstream and downstream sectors for the maximization of the export potentials of the sector for the total economy .In this sense adequate provision were made for the utility of both natural and associated field gas through the provision of fertilizer firms, pipeline provision and other engineering development options .Also specially mentioned in the master plan is a petrochemical firm in the hinter land as well as hinterland refineries for the entire economy.

All of the above will result in significant impacts in the transportation aspect of the total logistics chain of the economy ,increased ship calls to Nigeria's coast and perhaps vessels acquisitions by oil and gas concerns in the integration network .With the rail infrastructure of the Niger Delta region being in absolute decay except for the newly built Warri-Ajaokuta rail link the other facility available for large volume product transportation are pipeline.

All of these will typically add to the total logistics chain while being channeled towards the coastal states for export .To this end provision of dock infrastructure that will handle engineering maintenance needs of the marine vehicle now acquired by oil and gas concerns especially in the new world order of local content administration becomes paramount. When measured in financial terms , the capital flight resulting from annual and quarter annual dry docking costs in foreign shipyard makes the project a feasible one . When evaluated under the cabotage regime the cost savings becomes more apparent. To this end the financial returns expected from President Goodluck Jonathan's 150 billion dollars offshore investment market will

only accrue, if docking facilities (in the likes of shipyards , graving dry docks) are made available in the country.

The above statement is further elucidated when one takes into cognizance the fact that no ship yard will accept orders (in this case a ship construction order or an offshore facility design order) for a product (ship in the case) which the yard cannot handle .While the country emphasizes the local content Act, they should also expand their investment in marine technology outfits such as graving dry dock and it's affiliated ship production facilities. Sitting one in the oil rich Niger Delta region which habours Nigeria LNG ltd will thus not be an over investment. Also using an LNG tanker ship to determine the parameters of the graving dock will certainly be a welcome option.

Governments have also show interest in modern times in the provision of shipyards. Onyemechi (2006),Smith (1984).To this end Nigeria's government should join hands with willing technical partners to provide a state of the art graving dry dock for Nigeria and the entire Gulf of Guinea. Nations that have reviewed activities in recent times on their shipyards includes; Britain, Italy, Poland, Sweden, United Arab Emirates.

2.1 Entrepreneurial Opportunities in Marine Technology Controlled Offshore Maritime Sector

With the development of shipyards having capacity to build and repair offshore facilities in the Gulf of Guinea ,a lot of entrepreneurial opportunities will be created . A shipyard's training school for instance provides opportunities for the development of artisans and artificers in the fields of welding technology, preoutfitting technologists commonly known as fitters, electrical technologists, marine pipe benders, lathe machine operators, marine engine technicians etc.

On completion of ship construction and repair, the vessel usually proceeds on sea trial. A good number of tests are usually mandatory classification society requirements. These tests will usually require people with university graduate level knowledge of marine technology related disciplines. These graduates will acquire entrepreneurial skills in a trial event test only if the shipyard exists. Local content specifications of nations usually require technological transfer of techniques from an operating expatriate corporation in the oil and gas sector to local employees that creates a smooth transfer of the technology in question to indigenes. Over a hundred tests are required on vessel building completion covering the areas of mechanical and piping systems, electrical and electronic systems and hull tests. This will mean added employment opportunities for both graduates and non graduates with savings in capital flight which is presently placed at $150 billion by Goodluck Jonathan's administration.

3.0 METHODOLOGY

The method applied in the research is covariance analysis based on principal component analytical research method. The software package used for data analysis was MINITAB. The variables analyzed were Nigerian owned companies with presence abroad and foreign owned companies operating in Nigeria's oil and gas sector.

4.0 REPORT OF FINDINGS

Analyzing local content in the oil and gas sector in Nigeria one discovers with statistics below an 8.1 percent presence on the side of Nigerian based companies with significant presence abroad with the

foreign owned ones scoring a percentage value of 67.9 percent. Nigerian owned companies contributed 8.3 percent while foreign owned companies based in Nigeria scored 17.2 percent. When subjected to covariance analyses using the principal component method, the obtained result were as follows. The sectors tested were Nigerian owned companies with significant presence abroad component 1 and foreign owned companies with significant presence abroad component 2 .Proportion of variation explained by first component was 78.5 percent while that explained by the second component was 21.5 percent. The analysis which was based on number of corporations puts Nigerian owned companies ahead with a variation of 0.917 against 0.318.Analyzed on dollar worth the result reverses in favour of foreign owned companies with a score of 67.9percent against 8.1 percent.

Analyzing the facility maintenance sector where drydocks belong one observes a core of 45 companies on the Nigerian side against 29 on the foreign owned side. Thus an independent observer may think this to be sufficient presence but volume of contracts they can handle are actually smaller due to their small sizes. It is thus mandatory for the sector to improve her local content investment in Nigeria if Nigeria;s interest is to be maximized in the sector.

website.

	Companies with significant VA in Nigeria		Companies with significant VA abroad		Total number of contracts
	Nigerian Owned	Foreign Owned	Nigerian Owned	Foreign Owned	
Consultancy	6	0	8	0	14
Drilling & well completion	9	5	13	33	60
Environmental services	2	0	5	3	10
Exploration	2	4	0	10	16
Other	0	0	0	3	3
Gas development	0	0	0	3	3
Hotel & catering	5	0	5	5	15
ICT	5	1	11	4	21
Procurement	8	2	65	11	86
Production facility maintenance	3	1	45	29	78
Projects/construction	6	5	13	30	54
Transportation	9	6	36	36	87
Total number of contracts	55	24	201	167	447
Memo item:					
Dollar value of contracts (in billion dollars)	0.2	0.5	0.2	1.9	2.8
(percent distribution)	8.3	17.2	8.1	67.9	100.0

Source: INTSOK (2003).

NIGERIAN CONTENT(2011)

Principal Component Analysis: C1, C2

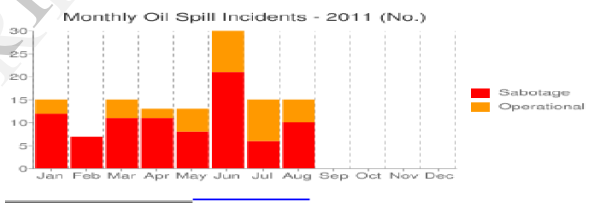
Eigenanalysis of the Covariance Matrix

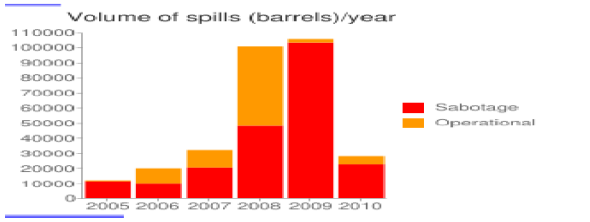
Eigenvalue	488.08	134.02
Proportion	0.785	0.215
Cumulative	0.785	1.000

Variable	PC1	PC2
C1	0.917	-0.398
C2	0.398	0.917

5.0 CONCLUSION

Having noted the contributive power of drydocks to job creation, the restiveness in the Niger delta often giving rise to sabotage on oil pipelines can be reduced through drydock creation for repair of large offshore oil facilities like FPSOs.





NIGERIAN CONTENT(2011)

This means a drydock with docking capacity of over 150,000 tonnes deadweight will be required.The largest in Nigeria being Nigerdock has a capacity of just 25,000 tonnes deadweight capacity.The drydock should be located in the Niger Delta region so as to make the required impact.

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