



ACADEMIA-INDUSTRY PARTNERSHIP IN DEVELOPING THE BASIC METAL AND STEEL INDUSTRY IN NIGERIA

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Abstract

The Nigerian basic metal and steel industry as we know it today is sickly. This paper seeks to highlight the present day challenges of the industry and proffer solutions achievable via academia-industry partnership and government playing its roles effectively. Information were sourced through Oral interviews with key members of the industry, plant visits and literature review. In this paper, a summary of the history of the Nigerian basic metal and steel industry is provided, the major challenges of the industry such as government policies and difficulty to access raw materials were highlighted, areas of industry – academia partnership which can help to address some of these challenges and the need for government to play its roles effectively are discussed. It is concluded that though the present state of the industry is a sickly one, there is still hope for healing if we take active steps to cause a positive change.

Keywords: Steel, Industry, Academia, Partnership, Government.

1.0 Introduction

It is common knowledge that for any country to achieve industrialization, there must be a thriving basic metal and steel industry. There is hardly any major construction or building project today that does not of necessity require steel and/or basic metals.

The journey of the Nigerian basic metal and steel industry has thus far been overtly laden with inconsistency in policy framework, corruption, poor planning and implementation of plans as well as economic and technical challenges. There is at present no functional Government owned basic metal or steel company and the yet operational companies in this sector are private owned and rely heavily on imported raw materials augmented with locally gathered scrap metals for production. These private owned companies are faced with myriads of economic, technological and operational challenges.

Despite all the afore – highlighted challenges bedevilling the basic metal and steel industry, there yet remains a hope for the basic metal and steel industry in Nigeria. This paper seeks to examine the most relevant problems confronting the basic metal and steel industry in Nigeria and then proceed to channel a course to remedy the situation by exploring the vast potential and possibilities that resides in synergy - a sublime partnership between the industry and academia in collaboration with the Government. Industry – Academia partnership is one tool that has not received sufficient attention which if rightly applied can serve as a livewire, a crucial spark for the much needed revival in the basic metal and steel industry in Nigeria.

This paper seeks to highlight ways by which a sound Industry – Academia partnership in the Basic metal and steel industry can be established in collaboration with the government so as to help address some of the major challenges of the industry and thus help to catalyse the attainment of industrialization.

2.0 Methodology

Extensive research was conducted in the form of oral interviews with key personalities in the Basic metal and steel industry. A visit was made to the basic metal and steel sector chairman of the Manufacturing Association of Nigeria (MAN), Chief Dr. Oluyinka Kufile who also happens to be the Chief Executive Officer (CEO) and Managing Director of Qualitec Aluminium Company for a verbal interview in his office and also to the managing director of Federated steel mills limited, Mr Samuel Low. Visits were made to Qualitec Aluminium Company manufacturing plant and also to Federated steel company plant which specialize in making steel rods.

A great deal of literature review was done and already available information on the basic metal and steel industry was utilized in this present study with modifications and updates were necessary.

3.0 Results and Discussion

3.1 An Historical Background of the Basic Metal and Steel Industry

In the year 1958, the idea to establish a government owned Steel Company was conceived (Obikwelu, 1988; Obikwelu and Nebo, 2012). The idea was shelved due to political tussle in choosing a location for the proposed plant.

In 1967, at the outset of the Nigerian Civil war, the idea resurfaced with more impetus and resulted into a bilateral agreement between Nigeria and the erstwhile Union of Soviet Socialist Republic (USSR). Detailed geographical, geological and geophysical exploration

for the raw materials needed for steel production commenced in 1971 by a USSR company and on the 14th of April 1971 in a Decree No. 19, the Nigerian Government established the Nigerian Steel Development Authority (NSDA) saddled with the responsibility to among other things locate, acquire and create a store of locally available raw materials for the steel industry (Dauda, 1981). It has been established that Nigeria has all the raw materials needed for steel production (Adigwe, 1983) including 3 billion tonnes of iron ore (Adebimpe and Akande, 2011; Bamalli et al., 2011; Alafara et al., 2005) 3 billion tonnes of coal (Agbu, 2007), and limestone in excess of 700 million tonnes (RMRDC, 2001). The availability of specialty metals such as vanadium, chromium, manganese etc. were also established.

In the year 1974, a USSR company by the name Tiajpromexport (TPE) submitted a preliminary project report (PPR) to the Nigerian Government which accepted it in 1975 after the location of the steel company at Ajaokuta was agreed upon and TPE was required to prepare a detailed project report (DPR). The proposed Ajaokuta steel company was intended to utilize the Iron ore at Itakpe close to Okene. 1977 was the year that TPE submitted the detailed project report to the Nigerian Government and was accepted after due scrutiny and amendments in the year 1978. From thenceforth, the DPR was supposed to be a working document for the Ajaokuta steel company. In the 1975 – 1980 development plan, the Government unveiled plans to set up an additional steel plant at Ovwian – Aladja, Delta state so as to make use of the abundant natural gas being flared in the various oil fields. While the proposed steel plant at Ajaokuta was intended to make use of the blast furnace route of iron production, the steel plant at Ovwian – Aladja was intended to make use of the direct reduction route of iron production. The steel plant at Aladja was meant to produce One million tonnes per annum (mtpa) of liquid steel and 320,000 tonnes of rolled products. The Aladja steel plant was also proposed to supply billets to three purported rolling mills at Katsina, Oshogbo and Jos each with a capacity of 210,000 tons per annum.

The contract for the construction of the Delta Steel Company (DSC) at Aladja was awarded in October, 1977 to a German Consortium headed by Messrs GMBH (Obikwelu and Nebo, 2012) In 1982, DSC Aladja was commissioned and began operation same year. The three rolling mills at Katsina, Oshogbo and Jos were also commissioned and began operation between the years 1982 and 1983.

In 1979, the Associated Ores Mining Company now known as the Nigerian Iron Ores Mining Company (NIOMC) was established by a decree No. 60. The Raw Materials Research and Development Council (RMRDC) was established in 1987 by a decree No. 39. The job

description for RMRDC included to among other things set up small – scale projects on raw materials exploitation so as to enhance the utilization of local raw materials as inputs to the steel plants thus accelerating the development of the steel industry.

While the Delta Steel Company (DSC) and the three inland rolling mills were completed on schedule, Ajaokuta Steel Company is yet to be completed till date. Presently, the conditions at the Ajaokuta Steel Company (ASC) can at best be described as moribund while DSC and the three inland rolling mills are operating far below capacity. All the agencies and bodies established by the Federal Government to aid the steel industry have fallen short of their calling. In 1989, the Aluminium smelter company of Nigeria (ALSCON) was established at Ikot – Abasi, Akwa – Ibom state. ALSCON which took \$ 3.2 billion to set-up was designed to produce 193,000 metric tonnes of Aluminium ingots per annum. The company however was ran aground by operational challenges. (<http://www.rusal.ru/en/about/51/>)

In 1999 by reason of the privatization policy, the Federal Government established the National Council on Privatization (NCP) and Bureau of Public Enterprises (BPE) which oversaw the sale of ASC, DSC, National Iron Ore Mining Company (NIOMC) to Indian companies, while the three inland rolling mills were sold to Nigerian investors. The privatization was however not transparent and could not help to savage the fast declining steel sector. (Ohimain, 2013; Mohammed, 2008)). The NCP and BPE are also overseeing the privatization of ALSCON which began in 1999 but is surprisingly yet to be finalized till date. The privatization of ALSCON has been muddled by all sorts of shady and corrupt practices which has further compounded the crisis of ALSCON which is supposed to be one of the largest functional Aluminium smelter company in Africa. Presently, the aluminium industry in Nigeria is largely a number of finished aluminium goods producers and the ALSCON smelter in Ikot Abasi, Akwa-Ibom which, as of March 2008, produces aluminium ingots on a small scale. (Charles et al. 2009)

During the period 2002 to 2012, the Federal Government instituted the backward integration policy with the intent of motivating key players in the steel sector of the country to navigate towards exploiting the over – abundance of raw materials in the country for domestic steel production rather than importing semi – finished steel products for use as raw materials for production. The backward integration policy has thus far not yielded expected results in the basic metal and steel industry but has rather served to compound the burdens of the private basic metal and steel companies who are currently striving to stay in business. All of the basic metal and steel companies in Nigeria today rely on imported raw materials and scrap

metals for their production input. Nigeria spends ₦887 billion annually to import steel and aluminium products. (www.premiumtimes.ng April 27, 2016)

3.2 Some Challenges of the Basic Metal and Steel Industry

After due consultation and enquiry, the following challenges were highlighted

- I. Difficulties in accessing needed raw materials for production
- II. Governmental decisions being made based on political and sentimental considerations ahead of national development
- III. Lack of adequate monitoring and control of Government established agencies such as RMRDC which focused on agriculture and gemstone research instead of research bordering on raw materials for the steel industry.
- IV. Abuse of the free – trade zone policies by some unscrupulous elements via practices such as illicit steel and basic metal dumping and scrap exportation.
- V. Over –reliance on foreign made steel and basic metal products to the neglect of locally made ones.
- VI. Low patronage of indigenous steel rods and aluminium products by Government and large companies
- VII. Illegal issuing of duty waivers on steel and aluminium imports
- VIII. Certain steel and aluminium companies failing to meet set product standards thereby denting the image of the steel industry in Nigeria as being unable to produce according to international standards.
- IX. Low awareness, sensitization and readiness of Nigerians to invest in the Aluminium and steel industry.
- X. Excess government taxes and levies
- XI. Over reliance on foreign expatriates
- XII. Steel companies have to provide themselves with their own source of power supply at relatively high cost.

3.3 Key Areas for Industry – Academia Partnership towards Resolving Some of These Challenges

3.3.1 Partnership in Research and Development Activity

We currently live in a fast paced world characterised with constant technological advancement all over the world. If the Nigerian basic metal and steel industry is not to be left lagging behind in the stream of advancement, there would have to be a robust partnership between industry and the academia in the area of continuous research and development. The basic metal and steel industry is currently faced with the challenge of accessing raw materials locally. Some companies involved in the production of special roofing tiles for example make

use of special coating and bonding substances on an alloy known as galvalume made up of 55% Aluminium, 43.4% Zinc and 1.6% Silicon. All these materials are currently being imported and the local synthesis of these materials or derivation of locally available and cheaper alternatives are viable subject matters for research to be undertaken by undergraduate as well as postgraduate students in our universities and polytechnics.

There is need for an industry – academia partnership towards targeted novel research (Jiri, 2013). A great number of research projects in our universities today are not tailor – made to meet the technological and economic challenges of our indigenous industries and thus the effect of so much research work that have been carried out in our higher institutions is not so felt by the indigenous industries. Indigenous industries are accustomed to seeking foreign expatriates and personnel to help them solve indigenous problems. Could it be that our indigenous industries do not trust our higher institutions of learning to proffer solutions to their problems? There has to be a paradigm shift in this regard, the industry should have a re-orientation and reconsider partnering with the academia in an increasing measure to help tackle their technological problems. There is no telling the vast possibilities that abound in such a synergy. Also, our higher institutions of learning must brace up to the challenge and help to foster this partnership in research and development by seeking to ascertain the industrial challenges of these indigenous companies and presenting viable research proposals to relevant companies and bodies aimed at tackling these found issues.

The Government agencies such as Raw Materials Research and Development Council (RMRDC) and National Metallurgical Development Centre (NMDC) that were saddled with the task of undertaking studies and projects on locally available raw materials for the steel industries and development of processes and strategies for exploiting these raw materials have not lived up to expectation. The basic metal and steel Industry could partner with the mining, metallurgical and materials engineering arms of the academia in collaboration with the government to undertake this task.

3.3.2 Curriculum Development and Reforms

There is need for the academic curriculum in our higher institution of learning to be reformed so as to accommodate more industrially relevant practical work. There is need for the average Nigerian student to garner more practical experience that is relevant in meeting the manufacturing industry's needs. This however require partnership between the industry and academia. Also, new courses should be introduced into the academia curricula to further furnish an understanding of industrial needs and requirements. Regular excursions to manufacturing plants and other relevant sites should be encouraged as this will help to give students a first-hand understanding of the industrial sector and better position them to be more useful industrially.

3.3.3 Student Work Experience and Internship

There is need for increased collaboration between industry and academia to provide students with industrial placements where they can have their internship and thus garner work experience. Industry and Academia can partner to strategically position gifted students in Science, Technology and Engineering disciplines in targeted companies and establishments. These students would then be opportune to contribute positively to these companies while at the same time garnering work experience. One of the key effects of this is that there would be a greater pool of skilled academia products that will be able to fit into companies and establishments seamlessly. The burden on the companies of having to scout for, train and retrain staff would be reduced. Also, industry's reliance on foreign man-power would consequently be reduced in the process of time.

3.3.4 Faculty / Staff Exchange For Upgrade

Industry and Academia can also collaborate in the area of scheduled staff exchanges whereby some of the staff of the higher institutions of learning spend some months in an industrial set-up and get to have face to face encounters with everyday industrial challenges, staffs from the industry would also be positioned In the higher institutions of learning and thus have an understanding of the learning and research practices of the academic institution.

Such a deal would strongly enhance the relationship between industry and academia. This will also help the industry – academia partnership in the area of research and development to be more effective.

3.3.5 Manufacturing Association of Nigeria (MAN) Sectors' Seminars and Capacity Building

Industry and Academia should partner to participate and support seminars and workshops organized by the Manufacturing Association of Nigeria (MAN) and other bodies concerned with the manufacturing industry. Academic institutions of higher learning can be used as venues for these seminars and workshops to engender full participation of the student community in these seminars. These seminars and workshops should be organized not by MAN alone but in collaboration with the Industry and Academia for better results.

3.3.6 Institution of Special Vocational Training Centres

The Manufacturing Association of Nigeria (MAN) in collaboration with the Industry and Academia should set – up special Vocational Training Centres to equip students and staff of higher institutions of learning with practical hands on training. These vocational training centres would also serve to provide internship and training opportunities for students and staff of the higher institutions of learning and the industry respectively.

3.3.7 Partnering To Promote Patronage of Nigerian Made Products

A lot can be achieved if the Academia partner with manufacturing industries, MAN, Standards Organization of Nigeria (SON) and other relevant bodies to promote the patronage by government, establishments and the general populace of locally manufactured products ahead of imported ones.

Information in our present world today travels fastest amongst youth circles especially learned ones found in academic settings. Measures can be taken by the Academia in partnership with industry to harness this promotional power in advancing the cause of full patronage of locally made products. Students should be sensitized and directed to sensitize others and create widespread awareness on the need to patronize locally made products ahead of foreign ones. Provision of incentives for the most influential promoters would stimulate a more positive response and co-operation.

The manufacturing companies must on their own part ensure that they are compliant with the regulations of the Standards Organization of Nigeria (SON) and other such bodies so as to produce standard goods that all and sundry would like to patronize. SON must put in more effort in enforcing and unifying manufacturing standards all across the country.

3.3.8 Encouraging Investment in the Basic Metal and Steel Industry

The Academia in collaboration with the Industry can help to create awareness and sensitization on the vast opportunities and prospects of investing in the basic metal and steel industry. There is need for massive investments in the basic metal and steel industry to help

revive the sector and industry – academia partnership is instrumental to canvassing for such investments

3.4 Government Must Play Its Role

It is of paramount importance to emphasize on the fact that for the basic metal and steel industry in Nigeria to be revitalized, the Nigerian government must play its role effectively by putting in place policies that will help the private companies to function better. The Government need to re-dedicate itself to the Nigerian steel project. Iron – ore deposits at Itakpe should be beneficiated and mined on a large scale via a government – industry collaboration.

Strict measures should be put in place to check illegal dumping of locally available steel products and exportation of scrap metals to foreign companies. Government and its agencies should soft pedal in their taxing and levying of private owned steel and aluminium companies striving to survive so as to encourage more investment in the basic metal and steel industry. Government should institute a policy binding all its establishments and partner bodies to use indigenous products from the basic metal and steel industry. The import duty on locally available steel products should be made so high that it would be irrational to import such products into the country. Illegal issuing of duty waivers must be checked while import duty on yet to be locally available or accessible raw materials should be waived. All these measures and more will serve to reawaken the Nigerian basic metal and steel sector which will in the long run provide an avalanche of benefits to the Nigerian state.

4.0 Conclusion

A lot has been said as regards the present woes of the basic metal and steel industry, efforts made in the past and the prospects of revitalising the sector via industry- academia partnership and government playing its roles effectively. However, all these will not amount to much if active steps are not taken to consider these propositions and apply them. The basic metal and steel industry in Nigeria is presently sickly, however, there are still tangible hopes of healing if we arise and go beyond just talking to taking active steps towards achieving our co-operate goals and aspirations for the industry.

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