

Technology and Development in Nigeria: The Missing Link

V. O. Uwaifo, and P. S. O. Uddin

*Department of Vocational and Technical Education, Ambrose Alli University,
Ekpoma, Edo State, Nigeria
E-mail: vuwaifo@yahoo.com*

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ABSTRACT The major thrust of this paper, is to critically examine the technological strength of this nation viz-a-viz its development over the years. It is regrettable that over forty years after independence, Nigeria still depends largely on foreign nations for her various technological and industrial needs. Its development is still grossly low in terms of its technological productivity. This paper x-rayed Nigeria Technological Development so far, the courses of technological backwardness in Nigeria, the criteria for a backward nation, the historical background of industrial development in Nigeria and made workman like suggestions which will make Nigerian break through technological dependence.

INTRODUCTION

Various authorities have differently defined the term technology. The Oxford Advanced Learner's Dictionary defines technology as the scientific study and use of mechanical arts and applied sciences, e.g. engineering, and its application of this to practical tasks in industry. Akaninwor (2008) sees it as a systematic application of manufacturing methods and industrial arts to enhance efficiency in human activities, He went further to say that technology can simply be described as the result of man's efforts to do things more efficiently and effectively. Drucker (2007) defines technology as way or means of accomplishing a task.

TECHNOLOGICAL BACKWARDNESS

A county is said to be technologically backward when

- (i) It cannot produce capital goods such as tractors, lathe machines, drilling machines, cars, trains, and other earth moving equipments.
- (ii) It is unable to exploit her natural resources except with the help of foreigners who will normally provide the technology and expertise to undertake the exploitation of her natural resources.
- (iii) It is unable to mechanize her agriculture i.e. crude implements are still used for agricultural production activities by a large percentage of those who are involved in agricultural production.
- (iv) It depends on other countries for the supply of its spare parts for industrial machinery

- (v) It exports raw materials to other countries as against finished products
- (vi) It is unable to produce her own military hardware with which to defend herself if the need arises.

A critical examination of Nigeria reveals that all the points itemized above are present in the country. Thus Nigeria as spelt out in the items above is a technological backward country.

Historical Background of Technological/ Industrial Development in Nigeria

The concept of technological development in Nigeria evolved through the years after political independence in 1960; there was the concern for economic independence. The aim was that Nigeria should gradually reduce her dependence on Britain her former colonial master that dominated the production and distribution organization in Nigeria at that time. Economic development was to progress in an orderly manner and no dislocation to the system was to be allowed. The existing companies were to be encouraged and new ones were to be attracted to increase investment in Nigeria.

The thinking of Nigeria business policy makers up to the end of the civil war in 1970 was that Nigeria had a lot of resources (land and manpower) but lacked the capital to effectively develop them. Foreign investments were therefore to be vigorously encouraged. Nigeria was to be non-aligned so as to attract capital from both East and West. This, it was thought, would gradually reduce the grip Britain had on Nigeria's economy. The Nigerian Enterprises Promotion (Indigeniza-

tion) decrees of 1972 and 1977 forced the foreign firms operating in Nigeria to sell a sizeable portion of their ownership stocks to Nigerians.

After the Nigerian civil war in 1970, capital for the governments was given a big boost by favorable developments in the oil industry. The volume of oil produced in the country increased tremendously, with the development of oil fields in the Western Delta of Nigeria. The Arab/ Israel war of 1973 resulted in the Arab oil embargo on the West. This action shot the price of oil to \$42.00 per barrel with consequent increase in revenue to Nigeria.

For what we the lay men can see, a lot of this revenue was used to build bridges, construct high ways, build vehicle assembly plants, steel plants, aluminum smelter plants, the Kanji dam and other power generating stations, universities, polytechnics, etc. Our fraudulent and visionless leaders also lavished a sizeable part of this revenue on the then notorious "Festac 77", and the remaining stashed away in foreign banks in Switzerland and other countries. Today, even with our democratic dispensation, the status quo has not changed.

The Need for Technology Development in Nigeria

Since we all know the importance of technology we should make wide spread of it in our country so that we can have a solid background in academic. Technology helps in building a nation effectively and efficiently. We should not forget that technology helps in opening business relationship with other friendly Nation. And also helping the educational programmes of our country more productive programme more productive effective.

These are the importance of technological development of educational sectors:

- i. Technology makes learning interesting.
- ii. Technology makes learning process more suitable and effective.
- iii. It helps in achieving educational pursuit in academic background.
- iv. Technological equipment stimulates interest and assimilation in teaching process.
- v. Technology is used for development an improvement on the educational curriculum of educational system.

The federal government should give more concern to technological advancement to our

country, Nigeria. They should bring new modern technological equipment for school and trained qualified personnel who can make good use of it in impacting or using it to teach the learners effectively and efficiently. Because new technological equipment has opened up new opportunities for developing countries like Nigeria, which possess the required skills to provide expert-oriented service such as data entry, data processing and software development. Achieving all these technological equipment it will provide job opportunities for many Nigerians for the economic and social development of our nation.

Causes of Technological Backwardness in Nigeria

The reasons why Nigeria is technologically backward today are many and varied. They include the following:

(a) Discouragement of Technological Growth by our Colonial Masters

There are many reasons why the British came to Nigeria. One of the reasons is economic (Boahen 1966). The British saw Nigeria as a ready market for their sprits, dane guns, mirrors and other goods.

Before the advent of colonialism Nigerians were involved in many aspects of industrial and practical arts. They made their own hoes and other implements for farming, were able to weave their own clothes, smelted bronze and were able to cast an object as intricate as the "Festac mask" that was stolen by the British, undertook tanning of hides and skin amongst others. According to Akaninwor (2008), the colonialists discouraged further development of Nigerian technology as they reasoned it was a threat to the smooth marketing of goods imported from Europe. He went further to assert that "ogogoro" was termed illicit gin by the colonialists, and whoever was caught producing, marketing, or consuming it was persecuted

(b) Colonial Education

Formal education is the main and proper channel for technological emancipation provided it is built on appropriate philosophy of education. The philosophy of Nigerian education during the colonial period was built on the wrong philosophy

as can be confirmed by the statements of Lord Lugard and Rev. J.C. Taylor who said respectively:

“The chief function of government primary and secondary schools among primitive communities is to train the more promising boys from the village schools as teachers for those schools, as clerks for the local native courts, and as interpreters: (Lord Lugard 1921)”.

“I looked upon them as the commencement of our missionary work. We lost no time and began to teach them the A.B.C.” (Taylor 1857).

It is therefore not surprising that apart from the Yaba Higher College that was established in 1947 to produce middle level technical manpower, the colonialist only established secondary schools that were meant to produce clerks, missionaries, and interpreters. The aspect of education which emphasizes, skill and practical competence was however not an integral part of our colonial educational system as at that time

(c) Industrial Policies after Independence

The major industrial policy that Nigeria embarked upon after independence was import substitution industrial policy. The major thrust of this policy was:

- (i) Building of assembly plants in Nigeria.
- (ii) Importation of completely knocked down (CKD) parts into Nigeria to be assembled in these plants
- (iii) The establishment of steel plants, like Delta Steel Plant and Ajaokuta Steel Plant, and associated foundries that were to produce automobile parts that would be assembled in already established assembly plants.
- (iv) The establishment of machine tool companies (like Oshogbo Machine Tool Company) that were supposed to produce capital goods. The import substitution industrial strategy did not go beyond the stage of building the assembly plants, as the technical partners know that if Nigeria stops importing CKD parts, their companies in Europe would automatically stop production and eventually fold up. It meant that Nigeria would no longer be a market for European cars

(d) Inability to Commercialize Research Findings

There are a good number of research institutions in Nigeria. Some of these are Product

Development Agency, (PRODA) Enugu, Federal Institute of Industrial Research, (FIIRO) Oshodi, Nigerian Institute for oil Palm Research, (NIFOR) Benin, City Rubber Research Institute of Nigeria, (RRIN) Benin-City amongst others. These institutions have made a good number of findings or inventions but the lackadaisical private sector has not thought it fit to commercialize these inventions. Our universities and polytechnics have also invented different equipment, which nobody has bothered to commercialize for effective productivity. Today these Research institutions are a mere shadow of themselves, as the Nigeria factor has not helped them develop further.

(e) Refusal to Develop Military Invention made by Biafra during the Civil War

It is generally believed that necessity is the mother of invention. Under the fire power of the military government during the civil war, (1966-1970) Biafra produced a lot of fighting machines equipments, bombs and other sophisticated items using local technology trample the “Red Devil” armored personnel carriers, Ogbunigwe (mass killer), orange peel mosquito coil bombs etc. (The African Guardian July 23 1997). The Biafrans even extracted and refined their own petroleum product. But because of pride and inept leadership Nigeria has not made a positive effort to cash on this war time inventions, sit down and find out how these skills can be further improved upon for enhanced productivity because of the greed that has blind folded our visionless leaders

(f) Government Attitude

Government attitude towards breaking the jinx of technological backwardness in Nigeria is both disgusting and appalling. Nigeria is probably the only country in the world where you can find all brands of cars without any one having been designed and made by Nigerians. Policy makers take technological decisions without consulting Nigerian engineers and technologists. And where sometimes good policies are taken, the follow up and implementation becomes an uphill problem as out implementation methodology in all facets of our Nation has never been adequately sustained.

(g) Poorly Equipped Educational Institutions

Our universities, polytechnics and technical

colleges that are supposed to train proficient engineers, technologists, and technicians are now filled with obsolete and in most cases non-functional equipment. This affects the quality of products from these technological institutions. India, it is claimed, ranks third to the United States and the former USSR in scientific and technical manpower (The Nigerian Engineer, December 2003). It has over four million scientists and engineers. In 1985, Indian universities have 750,000 Engineering students registered. There were five elite institutions called India Institutes of Technology, funded and equipped to the highest standards, to provide high quality university graduates in electronics, computer science and other high technology disciplines. Their products emigrate in large number to the United States and other countries to apply their high skills where they are also valued and in demand, like the Republic of Ireland and Philippines. It is however not a surprise to see engineering graduates in our Nigerian Universities who can not differentiate between a bolt from a nut

Suggested Remedies for Technological Backwardness in Nigeria

We must appreciate the fact that no situation is totally hopeless. Nigeria, as a nation, can leave the comity of technologically backward nations to one of technologically advanced nation if the following suggestions are implemented.

(a) Copying items already in the Market

This method requires that laboratories, workshops, and other facilities be developed for component analysis and for building prototypes of items to be produced. The idea is to knock down products of interest in the workshops, study and analysis each component in the laboratories to ascertain chemical composition, physical properties and other production parameters of interest and replicate such items. Government should encourage "Igbo made" items and should assist in improving the quality of their products so as to compete favorably with the imported ones

(b) Industrial Espionage

Highly technical and military technology is closely guarded by their proprietors. The secrets can be obtained either by direct investments or

through espionage. Spies are often employed to collect top secrets and company documents required for developing such products, which they pass on to their sponsors for a fee.

(c) Provision of Infrastructural Facilities in our Schools

The ideals of the society are supposed to be passed to the next generation by the school system. Presently, the older universities in Nigeria have obsolete tools and the newer ones cannot afford to equip their laboratories and workshops Otubanso (2005) in "Education for Underdevelopment" quoted a chemistry professor as saying that "students no longer do practical but only the theory of practical." If our students cannot do basic practical how can we aspire to a technological breakthrough? It is therefore imperative that for us to overcome the problem of technological backwardness, we (the public and private sectors) must invest monumental resources towards upgrading our educational infrastructures. We should probably recall the statement of Martin Luther King, who said: "The prosperity of a country depends not on the abundance of its revenues, nor on the strength of its fortifications, not on the beauty of its public buildings, but it consist in the number of its cultivated citizens, its men of education, enlightenment of character."

(d) Adequate Financing of Research Institutions

A good number of research institutions in Nigeria are not adequately funded. This continues to militate against effective research undertaking. India for example invested over three billion dollars in 1985 in some 1,300 research institutes working on electronics aeronautics and space, atomic energy, etc In 1985, India spent 1.5% of her GNP on research and development compared with about 2.5% spent by the US. Nigeria's highest allocation figure was 0.43% in 1983, which went down to 0.05% in 1992 and 0.23% in 2003 (*The Nigerian Engineer*; Vol. 35 No. 4 December 2003): This is very sad for a sector whose responsibility is to research into areas that will enhance development in the country.

(e) Bold Energy Production and Supply

It was abundant energy supply that launched Europe into the industrial revolution. Nigeria has

been flaring natural gas from oil wells for over 40 years, it has an abundant deposit of coal, yet the National Electric Power Authority (NEPA) now power Holdings company of Nigeria (PHCN) cannot supply electricity to Nigeria. Industrial transformation can only thrive on a steady and sustainable supply of electricity. Since experience has shown that anything under government control never functions properly in Nigeria, then it is imperative that for Nigeria to achieve technological breakthrough, NEPA has been privatized. The ability for the privatized power Holdings company of Nigeria (PHCN) to achieve the said aim is a topic for future discussion.

(f) Engineers, Technologists, Technicians and Class Struggle

Presently there is a cold war between (engineers, technologists and technicians in Nigeria each feeling that he is superior to the other. But it is pertinent for all to know that they are all members of the same family and they need to work together to pull Nigeria out of the morass of technological backwardness. Gordian Ezekwe, one time minister of science and technology, commenting on bringing about Nigeria's technological breakthrough once said: "No one man does it. It is going to be a combined thrust of the best hands and brains, in all sectors of the society and of all and sundry in this country, including the clerks."

(g) Appropriate Technology

We need to embark on the acquisition of the technology that is appropriate and useful to us as a nation. That America has sent men to space does not mean that Nigeria must also send men to space. We need to look at our environment see what our local people do, and fabricate machines tools and equipment that will assist them to do these things more efficiently.

(h) Good Leadership

For Nigeria to be technologically developed

there must be a leader who is sincere, has foresight vision and Nigeria at heart. Not merely by saying it as common with our leaders but by doing it Koontz et al. (2002) noted that "the importance of good leadership is nowhere better dramatized than in the case of many underdeveloped countries where provision of capital or technology does not ensure development. The limiting factor in almost every case has been the lack of quality and vigor on the part of managers." This statement is particularly time for Nigerian leaders who major aim is not only on how to amass wealth for themselves but for their unborn generation.

CONCLUSION

A good number of technologically backward countries are poor, unable to feed their teeming population, are debtors, have low life expectancy figures, and to a large extent have inept leaders. They are unable to exploit the natural resources within their domain on their own. All developing nations in the world should strive to quite the stage of dependency to an industrialized dependent nation. This will help the citizenry

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