

Roadmap to Computer Technology Growth in Nigeria

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ABSTRACT

Guaranteed solutions to the growth of the entire Nigeria economy/sectors cannot be attained, if more emphasis and attention is not given to the growth and development of computer technology. A viable index by which, a nation's growth and advancement can be ascertained is by her technological endowment and development. Consequently, there is a need to providing the road map for achieving great improvement in Computer technology in Nigeria. A critical examination of Nigeria computer technology shows that we are far behind growth and development in this sector. There is need to identify the factors militating against this growth and development and suggesting the measures to be taken if great improvement is needed in computer technology in Nigeria. This paper has therefore identified these factors and suggested some technical recommendations that will help Computer Technology to attain growth and development in Nigeria.

Keywords

Computer Technology, Factors, Technology Growth, Development

1. INTRODUCTION

In this 21st century, a nation's growth and advancement is being analyzed and measured based on her technological advancement and are no longer measured by her level of abundance of natural and human resources. Though natural and human resources can provoke advancement if adequately managed using technology, the technological advancement of a nation, provoke development within the nation's God's given natural and human resources. Technology is the knowledge and resources used by individual to control and manage the environment and the resources within the environment for the benefit of mankind. It helps individual improve the God's given natural resources for the use, benefit and purpose of mankind. Technology enables man to adapt to the environment better and adequate. According to [1], the development in technology affects all other aspect of the economy including other industrial activities. It is also seen as the practical application of scientific knowledge to improving different aspect of human endeavour and mankind. [2] defines technology as the body of organized knowledge, machine, tools and ideas used by man to manipulate the environment for the benefit of mankind. [3] defines technology as a means of accomplishing a task more conveniently for the benefit of mankind.

The changing in mankind demand on a daily basis resulted to the changing or improvement in the technology used by man in achieving the present needs. Many people think that technology is just computer and when talking about technology, their attention points only to computer. However, it is important to note here that different technology advancement has been witnessed by man before the advent of computer. Technological advancement like black-smitting, weaving, brewery among others are different technology developed by man to work conveniently with his environment. In this regards, Nigeria has witnessed traditional technology improvement as this has started during the pre-colonial era and still in full operation in Nigeria till now. Consequently, [5]

noted that the iron technology of the Nok culture around Banchi, Kano and Zaria is dated to about 500 B.C. There has been clear evidence regarding the use of Iron from these regions in Nigeria around 2nd Century B.C. which had an immense contribution to the development of different tool that benefit mankind. In the light of the above, it is clear that Nigerian is not left out in technology development and advancement. They transformed ideas and produced tools that help to better the standard of living of mankind. However, the technology in 21st century, is highly different from the one mentioned above. Looking at the Nigeria case, it is obvious that, the nation is experiencing poor technology growth. Meanwhile, technology is a broad term, hence, this paper looked into the computer technology growth of Nigeria, where we are, where we want to be and the possible measures to take. The paper addressed the popular question in the mind of many Nigerian, which is, "what are the reason and factor responsible for the poor growth in computer technology in the country?". The paper provided a road map to achieving higher growth of computer technology in Nigeria.

2. ELEMENTS FOR ASSESSING COMPUTER TECHNOLOGY GROWTH OF A NATION

In concluding that a nation has poor computer technology growth, there exist some assessment elements that must be used. These elements are eye openers toward this area and one can conclude if such nation has a good or poor growth in her computer technology. Hence, the following checklists according to [3], enable one to know if a nation has poor improvements in her computer technology or not.

1. Does the nation has the computer techniques to explore and exploit her God's given natural resources or depends on foreign technology?
2. Does the nation have the needed computer experts to handle most areas of her economy or depend strongly on foreign expertise for these areas?
3. Does the nation depend on other country for her technology?
4. Does the nation patronize and use her indigenous software and other computer tools?
5. What percentage of nation economy depends completely on indigenous computer technology?
6. Does the nation export her indigenous software products to other countries?
7. Does the nation still run paper work offices across its sectors?

In this paper, the above checklist has been used to examine if Nigeria has poor growth in her computer technology or not. Consequently, it is obvious that the entire above itemized checklist are not obtainable in the Nigeria Economy. Hence, it can be boldly mentioned that there is poor growth of computer technology in Nigeria.

Methodology

This paper relied majorly on information sources from leading computer industries in Nigeria and also from conference papers, academic journals and articles. In gathering the

information for making informed decision in this paper, some software engineers were consulted, and the information given were highly germane in arriving at the conclusion in this paper.

3. FACTORS AFFECTING COMPUTER TECHNOLOGY GROWTH IN NIGERIA

Having knowledge of the exact problem confronting a man is a panacea to achieving its solutions. Hence, the problem confronting computer technology growth in Nigeria is as a result of the following factors.

1. Leadership Problem

In Nigeria today, there exist the problem of leadership in delivery the right services to the people. The leaders are full of decisions that undermine the best brain to be taken at a particular point in time in handling computer sector. The leaders fail to choose knowledgeable computer experts into computer sector of the economy. In Nigeria, you can see a non-computer expert heading a computer sector of the economy. The actual attainment of computer technology growth will to an extent depend on the leaders we choose to pilot the affairs of the computer sector of the economy. Most leaders in this sector do not possess higher qualification/skills in computer technology and do not have practical knowledge about this technology.

2. Poor Power Infrastructure

Despite the huge government investment on power/light infrastructures we read in papers on daily basis, it is still very clear that there exists an epileptic power supply in Nigeria. Nigerian cannot boast of straight 24 hours' light in a day without single interruption. Hence, the present infrastructure in Nigeria cannot adequately supply the power needed by Nigeria in turning competent technology. This will not encourage small computer technology business. No computer technology can actually survive with poor power infrastructure and supply.

3. Human Resources: To have a higher growth in computer technology, more emphasis must be given to human resources development. The poor development of our graduate in computer science is a serious threat to the improvement of the discipline. Every year universities in Nigeria produce thousands of graduates holding computer science degree. These graduates when practically interviewed do not actually possess the required skills needed to develop or improve computer technology as a sector. Consequently, this affects the needed man power in this sector. Most graduates of computer science do not possess required practical or "Hand-on-Tech" skills in order to give great improvement to this sector.

4. Market Environment: It depicts the high level of competition that is been witnessed in computer technology sector. Similarly, the computer technology market trends and innovation by competitors, whether the competitor produce or sell in-tech computer products and also the high level of the market entry is a serious factor affecting the development of the sector.

5. Poor Availability of Internet Services: In Nigeria today, no one can boast of 24-hours internet services and this is militating against the development of the computer technology. In this age, you cannot actually

do anything worthwhile without the use of internet. Development in this sector need intensive research and this kind can be made possible through the use of internet services. If great improvement must be made in the area of computer technology in Nigeria, great attention must be given to our internet services.

6. **High Index of Corruption:** Corruption is an internal flame living in human that if not dealt with can destroy the external resources of the human and the environment. The level of corruption in any sector can be used to predict its survival and improvement. In the last corruption perception index, Nigeria is ranked highly. The implication of this is that foreign investment towards this sector (computer technology) can be thwarted. There is need for a working anti-corruption architecture in the affairs of governing the people and managing the computer technology sector, if great improvement is needed in this sector.
7. **Non-Involvement of Computer Scientist in Making Computer Technology Decision:** Improvement in any discipline is as a result of involving people that possess the required skills and the technical know-how within that discipline. In Nigeria, government and decision makers in computer technology context take decision without adequate consideration from the experts in this fields, who are the key players in the field of computer technology and possess experiences and computer technical know-how that can contribute to achieving great improvement in this context.
8. **The University Teaching System:** The University System believes that a lecturer is an authority in an area. However, many lecturers of Computer Science do not actually possess the practical skills or "**Hand-on-tech**" skills needed to building this sector. Evidence of this point can be found from the graduates produced by the Department of Computer Science in Nigeria Universities. A critical examination of most lecturers of this discipline shows that, they do not possess the right "**Hand-on-tech**" skills required in building this discipline. To further portrait this point, it is important to ask a question that, how many lecturers of the Department of Computer Science in Nigeria Universities have developed or provided practical solutions to problems in software industries in Nigeria? Your guess is as good as mine. It will surprise you to know that many Universities in Nigeria contract their software/network development and management services to outside bodies, without valid contributions to the problem of these services from lecturers in this discipline. Hence, there is need to have total overhaul of this discipline in Nigeria Universities. Lecturers taken courses in this discipline must be made to possess technical and "**Hand-on-tech**" know-how about it. This will bring great improvement in this discipline and thereby contributing to building adequate manpower that possess the required skills in improving this sector in Nigeria. Similarly, there is need for financial encouragement from the government to lecturers of this discipline as form of special grants to helping the lecturers in developing themselves practically.
9. **Mental Colonialism:** Colonial Mentality is the internalized attitude of ethnic or cultural inferiority felt by people as a result of being colonized by

another group. In Nigeria today, it is a belief that anything from other countries of the world, is better than the one from our country. This is mental colonialism, and poses a lot of hindrances in improving our computer technology. This is evidence from the fact that most software used in running our economy today, were not developed in Nigeria. However, most of our indigenous software can perform better than those one bought from other countries. But, because of the mental colonialism, we believe that, Nigerian product in computer technology sector cannot perform better than the one from other countries. [7] noted that the colonialist discouraged further development of technology in Nigeria as they believed that it was a threat to the smooth marketing of goods and services imported by the colonial masters. [7] further asserted that, the colonialist term “ogogoro” as illicit gin and whoever was caught producing, consuming or marketing it was frustrated. This syndrome is still in existence today in our computer technology and is seriously militating against the improvement of this sector.

10. Western Education Philosophy: The main and proper channel for achieving any technological improvement is through western education. If great improvement in computer technology must be achieved, this western education must be built on adequate and appropriate philosophy of education. [8],[9] reported that right from the day of inception, the aspect of education which emphasis skill and practical competence was not an integral part of the nation’s western education system as at that time. Computer being a practical oriented discipline, the right and better philosophy must be implemented for the discipline

4. RECOMMENDATIONS

Many factors militating against achieving high improvement in computer technology has been discussed in this paper. This is actually necessary to proffering solutions to this factors and in-turn achieving high growth in the country computer technology. Hence, the recommendations provided in this section serve as the road map to achieving better and improve growth and development in this context.

1. Tackling leadership problem: No meaningful development can be achieved if we do not have decisive, purposeful and right thinking leaders that have the interest of the sectors and economy at hand. Therefore, to achieve great improvement in computer technology, the leaders must understand the need of this improvement and prefer the improvement above their personal gain, thereby selecting the right people with the required skills in all aspect of the computer technology sector.
2. Better Power Infrastructure: Power is a requirement for every sector of the economy to achieve improvement. Hence, a better power generation architecture must be implemented by Nigeria government if computer technology must witness great improvement. Different tools and services exist that must work together in achieving better performance of computer technology, and these tools and services require high and 24hrs power consumption. Consequently, there is need for a better power production in Nigeria for great improvement in this technology.
3. Human Resources Development: To achieve improved development in computer technology, there is need to re-engineer the human resources development. More human resources development fund should be provided by the government for people or researchers in this area. It is a recommendation that more of the development should be channel into human resources in this field in order to achieve great improvement.
4. Investment into Computer Education: Investing in computer education facilities is investing for the growth and development of our computer technology. This will encourage students to effectively perform basic practical and can aspire to computer technological breakthrough. Hence, it is important that improve investment in computer education is a pre-requisite towards achieving better growth in computer technology.
5. Better computer education System needed: The current education system highly promotes paper qualification without much care on the practical skill or “Hand-on-tech” skill of the individual. Consequently, this cannot produce better growth in computer technology. If we must attain improved growth in computer technology, much emphasis should be given to paper qualification as well as practical skill or “hand-on-tech” skill in this field. Lecturers and teachers of computer science in our universities/colleges must therefore demonstrate high practical skills and “hand-on-tech” skills in computer science before they are allowed to teach courses of this discipline. The paper qualification should also be a requirement; however, if we must experience improvement in computer technology in Nigeria, much emphasis should be given to practical skills of this discipline. Lecturers of computer technology should show real life computer problem solving capabilities by applying their practical skills in computer industries in Nigeria.
6. Synergy between software industries and Universities: There should be a synergy between software or computer industries and the universities for exchange of knowledge and new research areas in computing. Lecturers in computer science must be able to solve real world industries problems with their research. Paper knowledge alone without their practical applications to industries problems cannot achieve better growth in computing. Similarly, students in computer science **must** carry out their six months industrial training in computer/ software industries to gain practical knowledge in their discipline.
7. Anti-corruption policies implementation: As stated earlier, corruption is an internal flame living in human that if not dealt with can destroy the external (wealth) resources of the human and the entire environment. Hence, to achieve better growth in computer technology, anti-corruption policies must be made and implemented for all sector of the economy in general and computer sector in particular. Making policies that affect computer development in Nigeria, must be done without personal interest and corrupt intents by experts in this discipline. Choosing people that are qualify to teach computer courses in higher institutions of learning must be done without favouritism and corruption.

8. **Mental Decolonization:** As a result of our mental colonization, we believe that any computer technology gotten from other countries of the world is better than the one produce by our citizen. This is mental colonialism that is still eating deep to our economy negatively. Hence, to experience great improvement in computer technology in Nigeria, we must fight our enemy of mental colonialism. Government should make policies that will prohibit any sector of our economy from buying and using computer technology from other countries that has an available match with the one developed in Nigeria.
9. **Abolishing unnecessary Academic bureaucracy in Nigeria Universities:** Teaching some computing courses in the universities should be open to all that are qualified and poses the practical and industries knowledge in solving computing problems relating to those courses. Limiting them to higher cadre should not be encouraged in computing. The idea that you must get to a particular cadre before you can write about what you know and its working well in the industries must be discouraged in computing. Any computing specialist in a particular area must be allowed to teach these courses irrespective of their cadre in academics. This will enable the students gain better and industries knowledge of such courses rather than just the theory.
10. **Academic Curriculum Overhauling:** Computer science applications and knowledge are not static; They change with time. Thus, the modules/courses in Nigerian Universities as regards computer science should be profiled for subsequent modification with state-of-the art technology. This will enable future Computer Science graduates to be fully equipped in the fore-front of discovery.

5. CONCLUSION

Guaranteed improvement cannot be achieved in other sector of the economy without considering how best to improve our computer technology. Improvement in computer technology is a panacea to achieving growth in others sectors of our economy, since computer is a tool that can be used to achieve better performance of operations in other sector of the

economy. Consequently, this paper has discussed in details, some of the factors militating against the growth of computer technology in Nigeria. Various policies/issues as well as some other technical factors that constitute negative influence to the computer technology development in Nigeria have also been identified in this paper. The paper suggested some measures that must be taken in addressing the identified problems (enemy) facing computer technology growth in Nigeria. Hence, the recommendation in this paper will help to achieve better computer technology development (growth) in Nigeria if judiciously implemented.

6. REFERENCES

- [1] Kayode J. O (2010). Technology Development in Nigeria: The Nigeria Machine Tool Industry Experience.
- [2] Oluka S. I. et. al (2013), Engineer in Society. 2nd Edition, SNAAP Publisher, Enugu
- [3] Dekoya A. E. (2012). Technology and Social Change in Agriculture. Publish by NOUN, Nigeria.
- [4] Afolabi A.B. (2008). Repositioning the Nigeria Economy through Scientific and Technological Innovations. Africa Journal of Contemporary Issues, 6:1-8
- [5] Paul C. (2007). The framework for Understanding Technology and Technological Change. The Public Sector Innovation Journal. Vol. 11(1) Article 3.
- [6]] Uwaifo V. O. and Uddin P. S. O (2009). Technology and Development in Nigeria: The Missing Link.
- [7] Akaninwor, G. I. K (2005), Educational Technology (Theory and Practice) Port Harcourt: Wilson Publishing Co.
- [8] Isioto, Nte. N, Philip-kpae F. O, Dickson Rachael (2017), Roadmap towards Nigeria's Technological and Industrial Independence. International Journal of Engineering and Emerging Scientific Discovery, Vol. 2, NO. 2, June 2017(Online) available at <http://www.casirmediapublishing.com>
- [9] Enwere Dike (2010). Vision 2020: Where is the Technological Capability?