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Positive Maintenance Culture: Panacea for Technological Advancement in Nigeria

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Abstract

Every nation opts for technological advancement. But the fact remains that, no nation can achieve that when the citizens of such nation shown negative maintenance culture towards infrastructures, equipment and other facilities. It is believed that positive maintenance culture is lacking in Nigeria, this can be seen in the fast deterioration and collapse of Nigeria Railway system, Nigeria telecommunication system (NITEL), national electric Power Authority (NEPA) now Power Holding Company of Nigeria (PHCN), medical services, laboratories/workshops of several tertiary institutions and roads, to mention but a few. This paper therefore focuses on positive maintenance culture panacea for technological advancement. This paper is discussed under the following headings technological advancement in Nigeria, concept of maintenance culture, hindrances to positive maintenance culture, and relationship between positive maintenance culture and technological advancement. It is recommended among others that, adequate fund should be released for maintenance of equipment. The maintenance staff should be involved in purchasing of the equipment and qualified personnel should be employed in carrying out maintenance work.

Introduction

Technology can be defined as the application of scientific knowledge to practical purposes in a particular field. Atsumbe, and Saba (2006) see technology as means of doing things through the application of knowledge derived from systematic investigations of natural forces and materials. It leads to the development of processes and devices indispensable to the stable enhancement of quality of life and to human progress. It is a propelling force that must be internally induced if the goal of improving the quality of life of people is to be realized and substained over long run. Okoh (2001) said that the world has gone technological and technology has become an important part of the world's culture and any country that disregards this important fact does so at its own risk.

It is evident that technology can be traced to the beginning of human race on earth. Genesis 3:7. says "At that moment, their eyes were opened and they suddenly felt a shame at their nakedness. So they strung fig leaves together around their hips to cover themselves". Men continue to systematically and skillfully construct, weave and utilize things around him (stones, clubs, leaves and bones) to solve his peculiar environmental and cultural problems. Technology plays vital roles in national development. A number of developing countries have embraced and recognized technology as a means of realizing economic independence. Technology provides new insight into ways of making or doing things. Technology advancement according to Idris, Ejike and Ijebor (2005) implies a continuous and sustained build-up of technology. It is movement from technology inertial to technology sophistication. A country that desires to have technological advancement must imbibe on positive maintenance culture. Olaitan (2000) lamented that, maintenance culture is an attitude which

is sadly lacking in Nigeria whether in the home, school, office and factory. The higher institutions of learning have roles to play in the inculcation of maintenance culture. Just as we wage "war against illiteracy" and "war against indiscipline and corruption" we have to engage in a relentless battle against negative maintenance culture. Indeed absence of maintenance is a manifestation of ignorance and indiscipline which breeds corruption and inhibits economic development.

Technological Advancement in Nigeria

Technology has been receiving good support in Nigeria, back to the pre-historical age when our ancestors find it difficult to cope with challenges of life, poor communication system, no fast means of transportation, no electricity, poor medical services and no comfortable shelter etc. In the area of communication our fore-fathers use fire to communicate to people of distance communities. Salami (2001) opined that in communication, the drum message was used in pre-European and pre-colonial days as a means of broadcasting information or news over long distance. Today it has become easier for human beings to share their knowledge with one another within the country and outside the country through Internet services.

Our forefather used to trek long distance, for farming, trading, to attend festivals and other social and religious activities. People in riverine area use boats and canoe for transportation. Communities in riverine area made "dug-out" canoes out of huge tree trunks, for their transportation. Salami (2001) supported this claim when he said that in transportation, the horse was a preferred prestige animal rather than camel. Water transport played a considerable part in the most section of Nigeria. Canoe was important on the lagoon and boats were very important in trade conveying merchants and their wares across inland waters. Canoes also plays important role in fishing, trading and in warfare to transport troops. Advancement in technology has provided human beings with faster means of transportation; examples are bicycles, motorcycles, trains, ships and aeroplanes. Transportation has been made much faster, more comfortable and less rigorous by the use of motor cars, trains, ships and aircrafts. The equivalent of year's journey by donkey is now hours by air transport. It has been noted that improved transportation has also enhanced communication as well as exports and imports of good from one country to another.

As a result of technological advancement in Nigeria there is improvements in Agriculture method, greater improvement in yields, which is necessary to support large and growing population. This has been attained by the use of fertilizers, insecticides and mechanized equipment such as tractors. Techniques such as pasteurization, refrigeration, canning and other packaging methods, now enable food to be preserved and transported to needy distance areas. Irrigation farming have received a boost through advancement in technology, making it possible to grow crops in dry and arid lands. There are improvement in medical services, education, industrialization housing etc.

Concept of Maintenance Culture

Saba, (2006) defined maintenance as the acts of taking good care of equipment and tools in order to prolong their life-span and prevent it from sudden breakdown. Kareem, (2000) sees maintenance as a continuous and progressive activity aimed at catering for occasional deterioration from wear and tear of any structure or equipment in order to avoid an abrupt breakdown. Culture is an appreciation of art, is a state of intellectual development

of habit or attitude of a society. Culture can also be defined as the totality way of life of citizen in a society. Maintenance culture can be defined as the habit or attitude of keeping the existence or useful life of an appliance for the benefits of society. Abdullahi, (2000) sees maintenance culture as a discipline, habit or attitude that is acquired through education, training and practice. It is not in-born. Sometimes it has to be enforced by the Government, as is done in many European and Asian countries.

A look at our various organizations and industrial sectors one will see a lot of broken down and discarded equipment and machines littered all over the places. The worst thing is that most of these equipment and machines have not exhausted their life-span. This called for culture of maintenance for the equipment, rather than using money to purchase new ones at all times, when such resources can be used for another thing.

For us to imbibe a positive maintenance culture, Olaitan, (2000) suggested that the citizen of this country should be brought up to believe that:

- nothing is useless,
- there is no end to the use of equipment.
- an equipment must be aided to exhaust its natural life-span
- it is unwise and indeed an economic sabotage to allow an equipment deteriorate to a point of collapse/breakdown before it will be taken care of;
- every warning signal in any equipment or machine must be promptly attended to;
- each individual should be personally responsible for any equipment left in his/her care.

There were various types of maintenance in practice but three will be considered.

Preventive maintenance: this is an application of the popular adage, which said, "Prevention is better than cure". In preventive maintenance it calls for checking, testing and inspection of machine at regular interval. Idris et al (2005) stated that preventive maintenance is carried out with the explicit objective of detecting weak point in a system and ensuring perfect functioning by replacing parts, which could still be used but for the fact that its reliability can no longer be granted. This type of maintenance does not wait for break down.

Predictive maintenance: This is a concept in engineering maintenance, which makes use of necessary devices, monitoring, sensing to detect the faults before it occurs. This type of maintenance takes place when there is warning signal. Examples of predictive maintenance devices are: Engine temperature gauge, vehicle oil pressure gauge and others.

Corrective maintenance: This type of maintenance as its name implies, it is to correct the faulty machines. This is normally done after the breakdown of the system by replacing damaged or deteriorated components or parts. It includes such improvement as minor changes in design and substitution of more suitable components or improved materials of construction to eliminate problems.

Hindrances to Positive Maintenance Culture.

Olaitan, (2000) perceived that there is lack of maintenance culture in our home, school office and factory. He identified some of the factors militating against maintenance culture.

- Most establishments have the erroneous conception of maintenance as a task meant for technicians alone. The result is that engineers who possess or should possess expert knowledge and skills consider themselves "too big" for the maintenance jobs.
- Indiscipline and ignorance on the part of users of equipment often lead to persistent equipment breakdown. In such situations maintenance becomes problematic.

- Absence of efficient inventory system leads to frequent shortage of materials and spare parts.
 - Lack of data and poor information processing is a handicap to effective maintenance.
- Abdullahi (2000), Oduh (1992) and Okafor (1993) highlighted several factors militating against maintenance engineering infrastructures.
- Inadequate funding
 - Shortage of skilled manpower
 - Inadequate incentives in terms of salaries, allowances and mobility of the maintenance staff.
 - Maintenance work by unqualified personnel:
 - Machines are not product of our creativity
 - Non-challant attitudes of most Nigerians towards government property.
 - Lack of periodic checks of the equipment
 - Most of maintenance personnel's were not much in involved purchasing of equipment.
 - Inadequate staff development through attendance of conferences, seminars and workshops e.t.c.

Relationship Between Positive Maintenance Culture and Technological Advancement.

There exist a relationship between maintenance culture and technology advancement. It is likely that one cannot go smothering without another. If a nation seeks to advance in technology more effort must be geared towards maintenance of infrastructure, equipment and facilities. Since positive maintenance culture opt to prolong the life-span of equipment, prevent machines from sudden breakdown and allowing machines to exhaust it natural life. Looking through the deterioration and mal-functioning rate of our railways, power holding company of Nigeria (PHCN), Nitel, roads, hospitals, schools, industries/factories and infrastructures to mention but a few, one will conclude that there is negative maintenance culture in Nigeria and that cannot lead a country to any form of technological advancement.

It is often believed that when a human being refuses to take good care of him/her self, he or she cannot grow and there is probability that such a person can die in time. Olaitan (2000) stated that appropriate maintenance procedure is known as a way to prolong life-span of a facilities or equipment in all aspects of technological endeavours. The practice whereby government officials prefer to award contracts of huge sums of money for the purchase of new equipment rather than spend little for the maintenance of existing ones is disheartening and retrogressive in economic terms. The longer and more efficiently a piece of equipment functions productively, the greater the economic dividends to be derived there from. Idris et al (2005) opined that if we have to develop technologically our maintenance responsibilities must be carefully carried out and our maintenance culture in general must change for good. A positive maintenance culture produced the following;

- Increase in productivity
- No lost in man's hour
- There will be less importation of new equipment.
- Reduction in repairs thereby saving time and money.
- Sudden breakdown of equipment is minimized.

Conclusion

No nation can witness technological advancement when the citizens of such nation shows a negative maintenance cultured towards, infrastructures, equipment and other facilities, that called for positive maintenance culture. Abdullahi (2000) emphasized that maintenance culture is a must for social economic and technological development. Also the workers, managers and administrators using the structure and equipment must be alive to their responsibilities as patriotic citizens, custodians of the infrastructure and keepers of the environment, not only for themselves but for generations yet unborn.

Recommendations

Here are some suggestions toward inculcating culture of maintenance into our daily life in order to enhance longevity of equipment facilities and infrastructures.

1. The Federal Government should provide adequate and timely fund to maintain the equipment, plants and facilities in all public enterprises.
2. The equipment and machines should be cleaned and dusted regularly and covered when not in use to stop dust from accumulating and damaging them and to prevent oil and water from penetrating into their working parts.
3. The operators and maintenance staff of the equipment should be subjected to thorough training preferably in the manufactures' workshop in other to achieve optimum utilization of the equipment and they should be given opportunity to attend workshop/seminars relevant to their field.
4. The maintenance staff should be involved in purchasing the equipment, which will give them more concern to maintain the equipment.
5. The staff should be held responsible for the equipment under their cares.
6. The staff involved in maintenance work should be given incentives to serve as motivation.
7. There should be maintenance book or records for all maintenance carried out on each equipment that may ease the work when another fault occur.
8. Each equipment procured should have manual to help the users and maintenance officer when there is fault in the equipment.

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