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## Enhancing Engineering Activities Through Utilization of Computerized System in Nigeria For National Development

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By

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### **Abstract**

*The paper discussed how computerized system can be used to enhance engineering activities in Nigeria to achieve national development. Computer is as an electronic device has some features that encourage its use in engineering activities for development. The use of computer system can bring about improvement in engineering production and engineering education. The paper made some recommendations aimed at supporting the use of computer system in engineering activities.*

Science and technology has played a great role in the development of human society. It is almost impossible to live a full and satisfying life without application of science and technology. Thus, science and technology is a vital instrument for making man's life and activities enjoyable. As rightly posited by Obianwu and Azuike (1994), technology is the knowledge of scientific principle applied to practical tasks with the purpose of reducing human suffering or for improved productivity.

However an essential field of science and technology is engineering. Since science and technology is useful for development in human society, it can be said that engineering is a vital instrument for achieving desirable activities and products in a nation. Nwosu (2005) noted that engineering is a discipline that relates to science and technology and it involves the use of scientific principle in designing and production of materials and devices that make man feel more comfortable in his environment. Engineering deals with the application of objective knowledge to the creation of plans, designs and means for achieving desired objectives, but technology deals with the tools and techniques for executing the plans (Idowu, 1992)

Based on the role of engineering in national development, engineering activities need to be enhanced in Nigeria. A vital technological product that can be used

for development and enhancing productivity in engineering is computer system. The paper deals on the use of computer system in promoting engineering activities for national development in Nigeria. To enhance engineering activities, computer system can be applied in engineering production and engineering education. The paper made certain recommendations to encourage the application of computer system in enhancing engineering activities in Nigeria.

### **Computer System as a Useful Product of Electronic Technology**

Computer system is a product of electronic technology, which is widely used in almost every aspect of human endeavour. The existence of computer technology has brought about computerization in human society and making the world a “global village”. Okwoche (2004) pointed out that computer system is fast replacing manual tasks worldwide and so it is an essential technological device that exists for the well being of human society. Sadiq, Nnebe and Momodu (2004) observed that computer is useful in human endeavour for it is a machine that is used for fast generation, calculation, and storage of information and it gives assistance to manual labour since it quickens data processing activities or functions.

Nwosu (2007) opined that computer system is an electronic device that accepts data and processes the data based on a set of instructions to generate an output result so that works become easier for man. In the same vein, Anigbogu (2000) stated that computer is “an electronic device capable of accepting data and instructions, processing the data based on the instruction to generate results or output in such a manner that is yet to be equaled by any other machine known to mankind”.

Computer system has important characteristics that make it a valuable electronic device. The features of computer system are: high speed in operation, high storage capacity for data and information, provision of accurate outputs, handling of complex tasks, provision of neat jobs, maintenance of reliability in performance, flexibility in modification of data and information. The technological value of computer system can be utilized to enhance activities in human endeavour, especially scientific works. An aspect of science and technology in which computer system can be applied is engineering.

### **Need to Enhance Engineering Activities in Nigeria**

Engineering activities has brought civilization and technological advancement in human society. Idowu (1992) pointed out that “engineering is a profession in which knowledge of the mathematical and natural science gained by study, experience and practice is applied with judgment to develop ways to utilize economically the materials and forces of nature for the benefit of mankind”. Engineering is the life wire of any nation for man has used engineering to exploit his environment to his advantage; and major revolutions that occurred in human society were made possible through engineering activities (Iroegbu, 2006). Based on the relevance of engineering in

national development, enhanced engineering activities are expected in Nigeria for her development.

Unfortunately, Nigeria is not very sound in technological activities. Mogbo (2004) stated that one of the factors responsible for poor economy in Nigeria is low exposure and participation in science and technology. Baike (2003) in Irogbu (2006) noted that there is poor link between the engineering faculties/schools and industries/engineering-related establishments in Nigeria, resulting to lack of technological advancement in the nation.

If engineering should serve as a viable resource to enhance the socio-economic status of Nigeria, there should be high productivity in engineering activities. However a means of achieving high productivity in engineering operations is by the use of computerized system.

### **Utilization of Computerized System in Engineering Production**

It is expected that engineering production should be of high quality signifying high productivity. There should be improved productivity in engineering operations with the use of computerized system. Nwachukwu (1988) noted that productivity is the output resulting from a given resource input at given time and workers can achieve higher yield of product within stipulated time with the use of computer.

Computer makes it possible for engineering design and construction to be done with ease. In engineering design, computer system makes it possible for calculations, drawings and simulation to be carried out with less stress, little or no error; time is also saved. It is an axiom that economy of energy and time enhances productivity (Nwosu and Chijioke, 2004).

Information is vital for affective and efficient engineering production. Using the Internet, people can communicate and obtain information, needed for engineering operations, from any part of the world irrespective of the geographical distance. Communication for engineering activity can be done using Internet facilities like E-mail, E-commerce, E-conferencing, etc.

To enhance engineering production, security is needed. A computerized security system can be built to indicate the presence of an unauthorized person or a thief in an engineering organization or enterprise. Internet can be used for security purpose. For instance, if an engineering establishment has a secured website, documentations can be made in the Internet (website). Within access to the website, vital records kept in the establishment that are lost or destroyed can be gotten back for management of engineering production.

### **Use of Computer System in Enhancing Engineering Education**

Productivity is enhanced when there is adequate human resource development. Human development of Nigerian engineers can be ensured when there is sound engineering education. Sound engineering education brings about intellectual enhancement needed for productivity in engineering.

Computer system is useful for educational purpose needed for enhancing engineering operations. Computer system has proved to be a useful technological device needed for acquisition of necessary knowledge and skills that assist one perform effectively and efficiently. There are certain educational software that can be installed in a computer that can provide knowledge and skill for enhancement of engineering. Internet can provide educational value for promotion of engineering. Internet provides information needed for intellectual enhancement and productivity. Internet makes it possible to download information of any sort for fostering of engineering activities.

For computer system to serve educational purpose needed for improved engineering activities in Nigeria, ethical conduct must be upheld by people concerned with engineering. Computer crime should be avoided. Corruption and social vices usually obstruct development in human society. As noted by Nwosu (2003), good moral is needed to promote development in individuals and society.

### **Conclusion**

Engineering is discipline that plays a great role in national development. So, engineering activities need to be enhanced in Nigeria. However, computer system is a vital electronic device that can foster operations in engineering. Computer system is vital in engineering activities because it can be applied in engineering production and engineering education.

Infact, there is a great need for Nigeria to develop a strong orientation towards the use of computer system in engineering. The use of computer system can bring about improved and high productivity in engineering. Such state can promote the socio-economic status of Nigeria, thereby propelling Nigeria becoming a developed nation.

### **Recommendations**

To encourage the use of computer system to enhance engineering activities in Nigeria, the followings are recommended:

1. Engineering organizations should ensure that operations in the organizations are computerized.
2. People partaking in engineering activities should be computer literate to be able to operate computer system effectively.
3. Students involved in the study of engineering should acquire quality education pertaining to computer system.

4. Nigerian government and citizens should give the necessary support and encouragement for acquisition of resources needed for promotion of computer system in engineering operations.
5. Corruption and evil practices should be avoided by Nigerians in the use of computer system in engineering.

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