

# **BUILDING THE SCENARIO AS A MANAGEMENT CHALLENGE FOR TECHNOLOGICAL ADVANCEMENT**

**By**

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## ***Abstract***

*The world has so developed that technology has revolutionised development in all aspects of human life. A scenario is a strategic management technique where a written description of a possible future is made to assist in the identification of events that warrant the development of contingency plans. This paper attempts to discuss on the contingency plans. It also endeavours to discuss on the benefits derived from scenario building and the approach to development. The paper maintains that technology advancement should be progressively sustained through this strategy. The paper suggests that the Research and Development (R&D) department of the Ministry of Science and Technology be sensitised and activated to be committed to building a scenario for technological advancement.*

## **Introduction**

A people with no knowledge of their past would only grope blindly into the future without guideposts of precedence to shape their course. Reflection on previous events usually serves as a linkage or bridge to the present. There is no novel thing under the earth. Technology is as old as human existence. Technology is the practical application of scientific knowledge. Weilrich & Koontz (2005) referred to technology as the sum total of the knowledge we have of ways to old things which includes inventions, techniques, and the vast store of organised knowledge from aerodynamics to zoology.

The aim of education even in the traditional society is character-training and job orientation. There are different facets of indigenous education in Nigeria. According to Fafunwa (1977), traditional African education is multilateral and the end objective is to produce an individual who is honest, respectable, skilled, co-operative and conforming to the

order of the day. Seven distinct aspects can be identified in indigenous education. (i) Physical training and playful exercise of sensory and motor apparatus, initiative play and competitive games. (ii) Development of character which comprises religious training, home training, good etiquette and personality. (iii) Respect for elders especially in greetings, conduct and approach (iv) Intellectual training power to integrate experience and process of abstract reasoning. (iv) Community participation (vi) Promotion of cultural heritage and (vii) Vocational training.

Vocational training can be divided into three traditional vocations:

1. Agricultural education. This includes crop production, aqua culture, animal care and planting methods, etc.
2. Trades and crafts such as weaving (baskets, mats, clothes), smiting (iron, silver, gold, etc), hunting, carving, (wood and bronze), sculpturing, building, carpentry (wood work), glass making, iron-ore working, drumming, painting and decorating, and boat making.
3. Professionals like doctors (witch, native, etc), village heads, police and messengers, tax collectors, heralds, judges' etc.

Vocational training in traditional society is largely run on the apprenticeship system and it's a time-honoured device for educating millions of African youths and adults.

This was the situation of education and technology before the advent of the missionaries in 1842 with a major interest on evangelical programmes and moral instructions. However, apart from 'book learning', vocational training was added. At Abeokuta, Onitsha, Lokoja and Calabar, agriculture, carpentry, bricklaying, ginnery, home-economics etc were included. By 1847, the British Privy Council's Committee on education set in to the education policy. By 1886, the British government enacted the first purely Nigerian education. The Christian missions continued their programme alongside with Islamic education unhindered and the government started its pursuit on education. Nevertheless, because most of these British policy makers are literary men and women that studied classics in London and Cambridge Universities, technical education had a slow start. By and by, craft schools were established, technical colleges, college of technologies (now polytechnics) and few universities offering degree courses in mechanical, civil, electrical and chemical engineering. In the late 60's there was a move to change their names and in 1968, a Taiwo Commission was set to look into the policy of education including technical education. Their report created an open-door for technical education in National policy. All these transformation were steps to

technological advancement.

## **Problems**

Technology according to Andah (1992) refers to all that it takes (in terms of mental and material energy) for man to set in motion the natural forces of his body (arms, legs etc) in order to make natural materials available in forms of his own useful life. It represents man's ways of applying scientific knowledge to practical uses, so that he can live more comfortably and securely today than yesterday. He further said, Technology embodies man's efforts at transforming his knowledge of specific laws, with the help of his personal skills, into concrete objects of thoughts which are called artefacts.

Hellriegel, Jackson and Slocum (1999) summed up technology as the method used to transform organisational inputs to outputs. It is the knowledge, tools, techniques and actions applied to change information, materials and other inputs into finished goods and services. By 1986, there was a new dawn on technology in Nigeria when the first National Science and Technology Policy was formulated with the realisation that the overall national development could be sustained through the effective application of scientific and technological skills for the production of goods and services. This was just an awakening. In 1990, a significant milestone was marked in the national development as it resolutely linked its science and economic development together. A national committee was mandated to produce a blueprint which would be sum total of policy proposals, objectives, institutional arrangement strategies, funding requirements, financing proposals as well as the implementation action plans. By 1991 February, the report was submitted and 1992 January, implementation was fully set. Universities of Technology were established, Science Technical Colleges, Technology Incubator Centres and so on for the development, promotion, popularisation and information dissemination on the daily application of Science and Technology in the field of Agriculture, Health, Education, Industry, Energy and Engineering. Since definite progress are being achieved, it is therefore necessary at this point to conserve, sustain and continue even at a faster rate in this advancement reached in technology as a nation. Hence, the need to consider scenario building as a management challenge to technological advancement.

## **Conceptual Framework**

It is commonly said that he that fails to plan, plans to fail. There is the great challenge to plan for the future technological advancement in this country. In planning, forecasting is

very prominent. Forecasting involves predicting, projecting or estimating future events or conditions in an organisation's environment. Forecasting is concerned primarily with external events or conditions beyond control that are important to its survival. Most forecasting is based on extrapolation which is the projection of some tendencies from the past or present into the future but evaluated to be misleading most times. A scenario is a technical word used differently in management contrary to the use in common English. Research, Fadahunsi (1992), Lawal et al (2000) and Denga (2000) confirms scenarios as one of the reliable forecasting aids often used in planning and decision – making situations. According to Hellriegel, Jackson and Slocum (1999), a scenario as a written description of a possible future. Multiple scenarios are simply written descriptions of several possible futures. For instance, electronics market planners might use scenarios to address questions such as: What future opportunities might exist for electronics commerce? How could developments in electronics commerce dramatically change traditional retailing? And what types of strategies might be useful in preventing, diverting, encouraging, or dealing with the possible future for electronic commerce? Thus, scenarios are intended to provide a whole range of possibilities against which to evaluate strategies, provide a broad vision of possible events, assist in the identification of events that warrant the development of contingency plans, and help policy makers and others to identify patterns, generalisations, and inter-relationships.

Ilesanmi (1997) confirmed that scenario building is another name for strategic or long-range planning. It is the process of identifying alternative futures that is, constructing a number of distinct possible futures, permitting deductions to be made about future developments of markets, products and technology.

In order to continue in this dynamic technological advancement programme, it is inevitable to make a real strategic plan, using scenarios to combat any probable obstruction. Factors that could bring hindrances may be political, economic, social or even technological itself. However, when a scenario has been built, it is obvious that nothing would be able to stand as a barrier unnoticed.

### **Scenario Building Benefits**

Pearce and Robinson (2003) reported that scenarios are usually developed for possible futures of five to twenty years ahead with the aim of keeping the programme manageable. There are certain advantages accrued to this scenario building.

- i. It forces those involved in planning to evaluate preliminary plans against future possibilities.
- ii. It is used to stimulate and guide long range thinking about possible worldwide developments and the strategic implications of such developments.
- iii. It provides tools which unfashionable and weak signals may be picked up without overwhelming the programme.
- iv. It ensures a rationale allocation of resources and improve co-ordination between various division involved in technology.
- v. It affords more alertness to the wind of change, new opportunities and threatening developments.
- vi. It creates more proactive management posture and counteractive tendencies for decisions to be reactive and defensive.
- vii. It offers an aggressive pursuit of a creative, opportunistic strategy that can propel a nation into leadership position, paving way for its products/services to become a standard.
- viii. It foresees problems and plans ahead to forge on.

In order to enhance technological advancement, the building of a scenario as a strategic management challenge will earn us the above stated advantage.

Rapid developments in technology can exert a powerful influence on all organisations, and not just on those operating in a high-tech environment (e.g. microprocessor manufacture, pharmaceuticals, fibre-optic technology). The combined impact of the computer, digital technology, telecommunications etc. has affected most businesses and public sector. If a country will maintain a competitive advantage in the global world, she must be ready to adopt and adapt technological developments to products, administration and education in order to stay ahead.

Scenario Planning began at Shell in 1968. An ad-hoc study group within Shell undertook a study on the year 2000. The impetus was the question: How soon would the world run out of oil? And, if those resources were depleted, would that condemn oil companies to an unexpected, low-growth future? As Shell people put it, "Is there life (for our country) after oil? Scenarios at Shell are used as tools for foresight – discussions and documents whose purpose isn't to produce a prediction or plan, but a change in the mindset of the people who use them. The futuristic stories in the context of their perception of the present opened the eye of leaders and professionals to development that otherwise might be unthinkable. This agrees well with Hellregel, Jackson & Slocum (1999) earlier submission.

## Developing the Scenario

There is always a research and development (R&D) division in any ministry and parastatals. The R&D in technology is very high in order not to fall away from the vision, mission and stated objective. This department is supposed to be charged with the responsibility of this planning and development. Johnston and Marshall (2003) submitted that scenario planning involves asking those preparing the forecast series of “what-if” questions, where the “what-ifs” reflect different environmental changes that could occur. Some very unlikely changes are considered along with more probable events. This is referred to as “sensitivity analysis”. The key idea is not so much to have a set of scenarios that illuminate the major forces driving the system, their inter relationships, and the critical uncertainties.

Cole (2003) suggested three scenarios being usually sufficient for possible futures of five to twenty years ahead. The *most probable scenario*, a *pessimistic scenario* and an *optimistic scenario*. Developing scenario involves taking a set of important variables and arriving at an agreed likely outcome. Around the desired outcome two other sets of conditions and outcomes will be constructed – one a pessimistic view and the optimistic view. The pessimistic view may infer tougher competition with the outside world and weak take-up. The optimistic view may point to a relatively “green field” with no immediate active competition and an enthusiasm about the advancement on technology. The three scenarios together with their supporting evidences are discussed by the senior management with a view to arriving at the best assessment of the future.

Ilesanmi (1997) postulated that a McNamee 7-points approach to scenario building viz:

- i. Development of sufficient database both for the program and the environment
- ii. Strategic profile must be developed in relation to its culture, leadership style, strength, weaknesses and gap analysis.
- iii. Develop a profile for the environment through system model such as delphi technique or brainstorming.
- iv. Evaluate the impact of the environmental element upon the present technological level.
- v. Further analysis of the impact of the environmental element upon the technological level.
- vi. Repeated evaluation of the information revealed by the first analysis and appraisal.
- vii. Selection of the final strategy subject to feasibility, acceptability and stability constraints.

Building a scenario for technological advancement will enhance rapid development in technology.

## **Conclusion**

The paper attempted to connect the past education with the present in Nigeria. The traditional education and its seven categories which included vocational training were mentioned. The vocational training was translated into technological education as it advanced. By 1986 there was an awakening in technological education but with a standstill. In 1992, there was re-engineering that led to specific accomplishment that is growing till date. In order to maintain this trend, the scenario building as a management challenge will be of assistance in sustaining the mission of technology. The benefits of such scenario were highlighted and the approaches to development were stated. Assuredly, scenario building as a strategy to maintaining a programme will assist in keeping the technological advancement and its proper management.

## **Suggestions**

- ⊙ The Research and Development (R&D) department of the Ministry of Science and Technology be sensitised and activated to being committed to building a scenario.
- ⊙ Management as a course should be emphasized to all students of technology for at least two years to be able to learn some necessary management strategies and techniques.
- ⊙ The policy makers, all managerial and institutional staff should be trained on how to build scenario.
- ⊙ At least once in a year, there must be opportunity for brainstorming on technological advancement.

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