

PAPER DELIVERED BY ING. TOGBI KPORKU III
AT THE
2004 CONFERENCE OF THE GROUP OF
AFRICAN MEMBER ASSOCIATIONS OF FIDIC (GAMA)
ON THE TOPIC
“STRATEGIES FOR THE EMPOWERMENT OF AFRICA
FOR TECHNOLOGICAL DEVELOPMENT”
UNDER THE THEME
“INFRASTRUCTURE AND TECHNOLOGY IN AFRICAN DEVELOPMENT”
ABUJA, 16TH MARCH 2004

Mr. Chairman, President of FIDIC, Fellow Panelists, Members of GAMA, Colleagues Engineers, Friends, Distinguished Invited Guests, Ladies and Gentlemen.

Let me, first of all, convey my sincere appreciation to the Council and members of the Association of Consulting Engineers of Nigeria and the organizing committee of GAMA 2004 for the kind invitation to deliver a paper at this very important conference.

Coming so soon after the admission of Ghana into FIDIC in September 2003, I really deem it a great honour to our institution in Ghana for the recognition and we can only pledge our resolve to be very active members of FIDIC and GAMA.

Definitions

Mr. Chairman, when I reflected on the topic for my presentation i.e. “Strategies for the Empowerment of Africa for Technological Development”, my initial act was to search the dictionary and find the meaning of technology. One definition was: ***“The Theory and practice of applied science as used in commerce and industry”***. The second definition was: ***“The totality of the means and***

knowledge used to provide objects necessary for human sustenance and comfort”.

The first definition of technology limits the entire topic to two words: “Retraining” and “Retooling” and thereby fails to provide any objective for Africa’s empowerment for technological development.

The latter definition, ***Mr. Chairman***, gives me enough latitude to go beyond my boundaries and, therefore, redefine the topic as ***“Strategies for the Empowerment of Africa for Development.*** Therefore, without any solicitation from you, ***Mr. Chairman***, my topic is so-defined.

Again, unfortunately, after 30 years practice as an engineer and 25 years as a traditional ruler in Ghana and 3 years as a diplomat, I have not yet been blessed with the gift of glossolalia, that is, the gift of speaking in tongues. Should I falter and sound pedestrian in my presentation, I hope you will understand my handicap.

From Slide Rule to HP Calculator

Distinguished Ladies and Gentlemen, exactly thirty years ago, as a fresh civil engineering graduate from the Kwame Nkrumah University of Science and Technology, I was lured into Nigeria by a colleague, Engr. John Ekong, to join his cousin’s firm of consulting engineers Messrs Etteh Aro & Partners, then practising off Queen Elizabeth Road in Ibadan. It was a simple open room practice, where we all sat at our desks, with a whole host of draughtsmen behind us.

The only sophisticated tool or “equipment “ on every engineer’s table was a slide rule. No computers existed, no fax machines, no photocopiers, no plan printers or plotters, no GPS, no total stations. I believe the words CAD, Autocad, e-mail and internet had not even been coined.

During my work with Etteh Aro & Partners, I gained a lot of favour with Mr. Lawrence Arokodare, of blessed memory, because I always had my design

calculations exactly right and delivered on time. But, I had a secret weapon. You know, the previous year in 1973, that was in my penultimate year at the University, I had the privilege of doing a summer attachment with the consulting firm of COWI Consult in Copenhagen, Denmark where I saved some money and bought the magical tool called a scientific calculator in those days. So, after the day's work in the office with my Thorton slide rule, I quietly retired home and rechecked all my calculations at night on my HP calculator before presenting them the following morning. You see, it was even an embarrassment for me to be seen using a "sophisticated" tool such as a calculator in the design office in those days.

I was afraid that my colleague Nigerian engineers would be asking themselves the question: "Ah Oga, who is this **Ghananian** coming to show off now?"

Today, thirty years on, I believe anybody using a slide rule in a design office will be labeled a dinosaur.

From Engineer to Technocrat

We have moved on and so has technology. The pertinent question then is, what does it take to develop technology? This being a forum of engineers, technologists and scientists, I believe that the strategies for our technological development lie entirely within our spectrum. As the Grade A* students in our secondary schools and high schools who were privileged to be selected to study the mysteries of science, physics, chemistry and mathematics, no other group of professionals is better equipped than ourselves to help move our continent forward in the development of her infrastructure, technology and economy. Why then do we continue to underrate our importance and continue to yield our place to pretenders, when what is required of us is the utilization of these incredible attributes and our critical mass of knowledge and experience towards our continent's growth? The practice of engineering requires various skills, in the art of observing, critical analysis and decision making, and the traits of character

required of a successful engineer include reliability, thoroughness, initiative, resourcefulness, logical reasoning, sound judgement and an impartial scientific attitude in our work. All that is required of us is to move from engineers into technocrats.

The Development Divide

As I said earlier, the era of the old slide rule wielding dinosaur is over. This is the era of information and communication technology, the era of computer-aided design, e-business, e-commerce, e-manufacturing, robotics etc. etc, etc.

The digital world is indeed here with us and it is not a myth, but, a reality. But for all the strides in technology that have been made all over the world, what has been the contribution of Africa towards its own technological development and advancement in this 21st century?

I dare say that, like in all other things, Africa is today only a consumer of technology.

The difference between the developing world and the developed world is not really the digital divide, as we have the advantage of late-coming technologies to leapfrog onto the information superhighway. The real difference, ***My Dear Brothers and Sisters***, is the development divide, where our concerns as a continent are still the biogenic or basic survival needs of humans, - food, shelter and clothing. Poverty and deprivation, unemployment and the scourge of disease continue to dominate our continent.

When the rest of the world is talking about wealth creation, we in Africa are talking about poverty alleviation! When America is talking about sending people to planet Mars, we in Africa are talking about HIV/AIDS pandemic!

Indeed, the heights of prosperity and wealth in the developed world can only be attained by us in Africa if we begin in our minds to retool and retrain for the challenges ahead.

Regional Centres of Excellence

Africa needs a new engineer, a new technocrat and a new scientist who has the radical and modern outlook and who can adapt to the requirements of modern technology and state-of –the –art practice. Computer Aided Design and other new tools of the game require of us very stringent degrees of accuracy as modern design software have zero tolerance for errors. I believe that as partners, we can re-engineer ourselves and rise to the challenges of the modern times. In this regard, I believe that a collaboration of efforts by our professional institutions in our retraining and retooling to meet these challenges has become imperative. This collaboration will mean the development of **Regional Centers of Excellence in Technology** in selected countries of Africa for the mutual benefit of all her citizens. In this direction, I believe that our Military Academies and Staff Colleges and the IITA in Ibadan are already showing the way through their collaboration of efforts.

The days of unnecessary competition and rivalry in Africa must be over and the name of the game must now be collaboration.

The **Centers of Excellence in Technology** will provide relevant and pertinent training for African engineers and technologists outside the normal “permafrost” conditions. Training, which will be devoid of -30°C temperature conditions and snow covering on roofs and highways.

Walking-the Talk

Mr. Chairman, unless we decide to take our destiny as a continent into our own hands and stop talking and start walking-the-talk, I see only a blighted path ahead of us. The Greek and Roman empires which were based on the rule of orators and poets of “big English” are now as extinct as the proverbial dodo. We are today in a technological age. You see, the so-called globalised world only offers a promise, but not the guarantee of prosperity to us in the developing world. The guarantee has to be secured by ourselves through our own

determination, hard work and with our own vision and action plans. Unless we begin to ***plan as nations - short-term, medium-term and long-term***, and work at it with all seriousness and without prejudice, we may only succeed in shooting the breeze. As we all know, if we fail to plan it means we are planning to fail. But failure is not an option on Africa's new journey into the 21st century.

Knowledge-based Economy

Mr. Chairman, what then are the requirements for charting our path towards our development and future prosperity. My humble submission is that, as a continent, hard industries for manufacturing, tourism and agro-based industries offer the greatest prospects in this new e-world. The developed world is emerging into a so-called post-industrialization new economy: a knowledge-based economy which is characterized by the service industry, computers, banking, IT, e-business, e-commerce etc, etc. Importance is shifting from brawn to brain.

But **Mr. Chairman**, I can see on the horizon a saturation point in all this **computer-aided growth** – and it is also important to recognize that this shift in emphasis by the developed world is strategic, as they begin to see problems of the greying of their societies. The statistics show that by the year 2025 there will be more people in America, Singapore, Japan and Germany above the age of 65 (that is in the retirement age bracket) than those in the working-class age bracket. What do you think the so-called Visa lotteries are meant for? They are only meant to populate the working-class age in the developed countries.

In Praise of Hard Industries

What then are the ingredients for Africa's development? My view, **Mr. Chairman**, is that recreation, entertainment, sports, tourism, food, autocars, electronic devices, clothing and textiles will continue to dominate the economy of this world. Why do you think the "rich and famous" of this world all belong to this economic class? The **Oscars** and **Olympic games**, the **World Beauty**

Pageants and the **Formula-ones** shall continue to be the biggest, the most glamorous and most prized events in the world's calendar throughout the next and the next millennia and, we as Africans, taking advantage of our natural resources, and our abundant manpower, will have to begin to position ourselves to manufacture to meet the lifestyle demands of the consuming world.

Positioning Ourselves

Mr. Chairman, positioning ourselves, in my opinion, means the following:

- 1) **Developing our infrastructure for economic development** i.e. an improvement in our road networks, telecommunication systems, engineering and technical training facilities, water supply facilities, ports and harbours, airport development, railway development, electric power and energy development, irrigation schemes and mechanized agriculture.

Many years ago the late President John F. Kennedy said something close to these words: **“It is not our wealth which built our infrastructure, but it was our infrastructure that built our wealth”**.

- 2) **Man-power training for industry.** A systematic and structured training of our youth in the basic sciences, computer skills and information technology is a ***sine qua non*** if we are to meet the new technical challenges that face us.
- 3) **Cleaning up our environment.** In my own country, environmental engineering has been left in the hands of city guards and their mayors. Disposal of waste, be it liquid or solid, is an engineering activity and has to be treated as such. If we wish to improve the health of our people and encourage the development of tourism it is imperative that we clean up our environment. Furthermore, it is important for us to look critically at issues like waste reduction, waste to energy combustion, recycling, reusing and composting of waste.

- 4) **We have to learn to strive for excellence in all our endeavours.** Excellence must be the only standard of quality that we must accept as a people.
- 5) **We have to learn to sacrifice.** In attracting Foreign Direct Investment into Africa, we sometimes have to bend over backwards in order to obtain our needs. This involves some amount of sacrifice, risk sharing and the principle of equal misery. By this principle, if we have crisis in any sector, the misery that evolves must be equally shared through mutual discussions and negotiations. Not or never by fiat of a minister, governor or government. We must maintain our pride as a people, but we must not be arrogant. The foreign investor may not need us, we need him. We, therefore, have to be circumspect in our business dealings and temper our enthusiasm with prudent judgement.
- 6) **We have to learn to reward service.** Meritocracy is a principle that we have to begin to cherish if we wish to generate wealth and promote initiative in our developmental efforts.
- 7) **We must begin to have confidence in ourselves.** As African engineers have we not studied the same subjects in the same lecture rooms and laboratories and workshops as our counterparts from the developed world? What then is the missing link? Is it confidence, initiative or proactiveness?
- 8) **We must be forward looking and Optimistic.** I am reminded of the story of two shoe salesmen who visited an underdeveloped country. One cabled his office, "No PROSPECT OF SALES BECAUSE NOBODY WEARS SHOES."

The other salesman cabled, "SEND STOCK IMMEDIATELY – INHABITANTS BAREFOOTED – DESPERATELY NEED SHOES."

As we can see from this anecdote, there are unlimited horizons facing us in manufacturing. We only need to look hard and to be optimistic.

Enabling Environment

Distinguished Ladies and Gentlemen, the new world economy is a molecular economy. The old and large corporate organizations geared to mass production are gradually being replaced by more dynamic molecules of a few individuals or small entities. In countries like Japan, this is the way wealth is spread through the principle of sub-manufacturing. But in all these, our Governments must set the compass for our entrepreneurs. Governments must also assist industrial development by creating the enabling environment (infrastructural and financial) for the emergence of captains of industry, for there-in lies our salvation as nations.

Industrial Zones

Mr. Chairman, in my own country Ghana, it has become worrying, in fact deeply worrying, that our society is being made to believe that it is more lucrative to convert an old industrial workshop or warehouse into a spiritual or charismatic church than to preserve these for future use as centers of production and manufacturing. Sometimes I sit by and ask myself what has become of our town and city planning bye-laws. We condone these disdainful acts under our very noses and are afraid to react because we think it is sacrilegious! To me there is nothing more sacrilegious than to misapply one's wealth as a religious leader in doing the wrong thing! We have not even begun our journey to industrialization yet, and we are already dismantling the foundations of the infrastructure that will lead us there.

In other countries, numerous industrial parks and freezones are the order of the day and, we in Africa, must also begin to set aside areas for manufacturing for the future.

Seizing the Moment

Karl Marx (1818 – 1883) propounded a most imaginative technological theory of history. To Marx, society consisted of a 'basic structure' (man's technology) and a superstructure (man's business, political and social organization, philosophy etc.) His key idea was the superstructure is determined by the basic structure. If Marx is right, the engineer as the creator of technology, is the major propelling force behind civilization. According to Marx, unknown to everyone, including himself, the engineer is society's most radical revolutionary.

Is it not therefore, sad, Fellow engineers, that inspite of all our efforts we remain buried and unrecognized under the great edifices, the dams, the waterworks, sea defence structures, ports and harbours, petro-chemical industries etc. etc. that were created out of our ingenuity, our bruised hands and dirty fingers?

Distinguished Ladies and Gentlemen, modern economic growth is led by technologists, engineers and scientists. It is, therefore, imperative that we as engineers begin to assert ourselves and seize the moment and demand our due position as major stakeholders in the destiny of our countries. We have to begin to demand positions on boards of corporations of government, national planning commissions, economic and financial institutions, state governments, district assemblies, man-power training organizations etc, etc, where we can help shape thought and action. It is our duty as engineers to help innovate visions for our dear countries.

But, we can only gain this recognition if we begin some self-reengineering- adding value to our present skills in administration and management, finance, banking, law and communication skills. Some degree of people – centred approach to issues is also demanded of us.

Infrastructural Development Coordinating

We must, as technocrats begin to form **Think Tanks** that can critically analyse issues and offer informed opinion on our development processes in our

countries. In Ghana, our ministries, government departments and agencies sometimes only engage themselves in empire building. There are so many uncoordinated programs and projects at all levels – national, regional, district and NGO – that the left hand hardly knows what the right hand is doing! It is time, **Mr. Chairman**, to have in place in our various countries Infrastructural Development Coordinating Units, headed by technocrats, to help coordinate the activities of our infrastructural and technological development.

As Africans, we need to chart a new path, re-strategise, focus and follow a defined direction, and the time is now.

Self-Reliance

Distinguished Ladies and Gentlemen, the way forward for Africa's Development in this so-called globalised world has to be carved with Africa's own foot prints. This is why initiatives like **NEPAD**, i.e. New Initiative for African Development sound refreshing and positive to all of us on the continent. But, **Mr. Chairman**, I dare say that a child which has to be fed on breast milk from another woman's breast may, at best, emerge malnourished, if not brain dead! If **NEPAD** will not be breast-fed by Africans, we may yet see only another acronym.

Capital for Investment

We, as Africans, have to look within ourselves first to source funds for investment. We, the elite and the **nouveau-riche**, may need re-examine our own grandiose life-styles as Africans to see if we cannot save for development and the improvement of our communities.

If we believe in capitalism, we must learn to practise it, for as Rev. Jesse Jackson once said: "**Capitalism without capital is just an ism**"

I am beginning to wonder if many other ventures in Africa have not just been isms!

Attitudes

Fellow Engineers, for far too long, we as Africans have depended on the stars for guidance. We adopted the old **Osibisa** song: “**We are going, heaven knows where we are going, but we know we are**” as a continental anthem. Yes, indeed, we had the stars in heaven to show us the way in the past. But today, there are more artificially launched satellites in the heavens than the constellation and milky-way stars that guided us in our azimuth studies as engineering students.

Again, for far too long, we as Africans have deluded ourselves into thinking that the rest of the world owes us an existence. It does not! We continue to extol sanctimonious and self-gratifying virtues as if we are a special people. We are not! We joke about our poverty and the ability to laugh at ourselves. It is sad!

The destiny of Africa lies in the hands of Africans and no one else. The earlier we woke up to this realization, the better for us all.

Exhortation

My Fellow African Engineers, if I have provoked you to get angry about our situation in Africa and, thereby, make you begin to reflect on how we can together move our continent forward technologically and economically, then my duty is done.

My Dear Brothers and Sisters, may the words of my mouth and the meditation of my heart be acceptable to you without too many questions.

I thank you for your patience

Ing. Togbi Kporku III, FGhIE, MASCE

Conterra Limited

P.O. Box AN 11658

Accra-North, Ghana

Tel. ** 233-21-235001/2

Fax ** 233-21 235003

e-mail: togbi@engineer.com