Project Management as a tool to facilitate the establishment of Knowledge Economy in Nigeria

By O. Chima Okereke, PhD

1. Introduction

The necessity of knowledge economy in today's world is an inescapable economic reality. The products we buy, and the methods with which they are made rely increasingly on knowledge and technology, and less on manual labour. Knowledge Economy has been described as the new premium fuel for economic growth in the 21st century. It fuels new ideas and innovations to boost productivity, and to create new products, new firms, new jobs, and new wealth. It has become an engine of progress in every country. If a country is developed, it has a developed knowledge economy, if a country is lagging behind; a knowledge economy constitutes just a small fraction of its economy.

In this paper, the necessity for a knowledge economy is considered. The advantages of using project management processes to facilitate the achievement of knowledge economy will be explored. The paper will analyse efforts to move Nigeria into a knowledge economy. A natural sequel to this should be suggestions for the establishment of a framework for knowledge economy, and then some concluding remarks.

2. Necessity of a Knowledge Economy

A UN report states that: "knowledge economy is one in which knowledge has become the engine of the social, economic and cultural development. Knowledge-intensive economic activities are now a factor of production of strategic importance in the leading countries. They have also become the main indicator of the level of development and the readiness of every country for a further economic and cultural growth in the 21st century". This was a Country Readiness Assessment Report 2002 on Armenia by the UN Economic Commission for Europe. By this measure, about 40 per cent of GDP in the UK was generated by knowledge intensive industries. The percentage to date will be far higher. The knowledge intensive industries by OECD definition include manufacturing, finance, telecommunications, business services, education and health, etc.

3. Advantages of the use of project management processes for the achievement of knowledge economy

The scope of knowledge economy is such that it inevitably embraces all aspects of business and industry. It calls for long-term planning and implementation. Inevitably, it becomes necessary to use the processes of project management to achieve structured planning, and monitored and controlled implementation. The use of these processes becomes more imperative since a structured approach is necessary to face the challenge inherent in knowledge economy, that is: to create an economy that provides

sustainable jobs both in the long and short terms for everyone, both high-skilled and low-skilled, in all parts of the country. The successful implementation of knowledge economy in South Korea, for example, underscores the advantages of the use of project management in the planning and implementation of programs tailored towards the achievement of a knowledge economy in a country. It may be therefore relevant to review the Korean experience before taking a look at a suggested project management framework for the achievement of a knowledge economy in a developing country.

Planned Mass Mobilization – Knowledge Economy Korean Style

Vision and plan: In January 2000, President Kim Dae-jung announced his intention for Korea to become an advanced, knowledge-based economy[1]. The government presented a long-term vision to transform Korea into an advanced knowledge-based nation. The goals include[2]:

- making Korea into one of the world's top-ten information and knowledge superpowers;
- developing the next generation Internet and the information superhighway by 2005;
- promoting the use of computers by students, teachers, and the military;
- conducting radical reforms in education to prepare the country for its drive to transform into a knowledge-based economy;
- envisioning the dawning of an Internet society, where people will participate in the governance process though ICT, in a democracy based on human rights; and
- closing the development divide through productive welfare and balanced regional development

Three months later, the country put into effect a three-year action plan for implementing the knowledge economy strategy. It consisted of 83 associated action plans in the five main areas of information infrastructure, human resource development, development of knowledge-based industry, science and technology, and elimination of the digital divide. Some other aspects of the planning and implementation are as listed here:

Execution: The plan was led by five working groups that involved 19 ministries and 17 research institutes.

Top-level Support: The programs received unflinching support from Korea's highest leadership and a strong buy-in from the business elite.

Resources: The knowledge economy strategy attracted vast resources from both public and private sectors. It is widely acknowledged that companies are the engine of a knowledge-driven economy, their participation in these efforts was absolutely essential. The scale and structured pace of programs were tremendous. For example, Maeil Business Newspaper (MBN), offered a million of free Internet connections.

Funding: This included a special Informatization Promotion Fund that supported ICT training classes for housewives, elderly, farmers, etc. These were mainly conducted in stadiums.

Monitoring and control of the implementation of the strategy: It was conducted by the National Economic Advisory Council that included representatives of the private sector.

Proper financing mechanisms and coordination: A powerful Ministry of Finance and Economy was responsible for the overall coordination of Knowledge Economy program implementation. In 2000, for example, the total budget growth rate was 4.7 percent, but growth rates in the information, and research and development sectors were 12.9 percent and 13.4 percent respectively.

Results: During the four decades after the Korean War, which ended in July 1953, the Republic of Korea successfully transformed itself from a poor agrarian economy with a per capita income of less than US$100 into a highly industrialized country with a per capita income of US$12,000. It also has produced internationally recognized brands and technologies such as Samsung and LG. It did this through a systematic economic and trade development policy, including heavy investment in capacity building, human resource development, incentives for technological innovation and the development of domestic intellectual property assets. According to a study by the Korea Development Institute, technological progress was one of the most important sources of national income growth between 1963 and 2000.

Korea's Achievements: Korea has achieved one of the fastest rates of economic development of any country in the world. Between 1966 and 1996, its per capita income grew by an average of 6.8% per annum, and it became an OECD Member in 1996. Towards the end of 1997, however, Korea experienced its worst economic crisis since the Korean War. Nonetheless, Korea made a remarkable recovery from the crisis, and grew at 10.7% in 1999.

4. A suggested framework for the use of project management processes for the achievement of knowledge economy in a developing country.

It could be instructive to start by discussing the challenges in developing countries for the achievement of knowledge economy. The United Nations Commission on Science and Technology for Development report (UNCSTD, 1997) concluded that for developing countries to integrate successfully information and communication technology (ICT) and sustainable development in order to participate in the knowledge economy, they need to intervene collectively and strategically. Such collective intervention would be in the development of effective national ICT policies that support the new regulatory framework, promote the selected knowledge production, and use of ICTs and harness their organizational changes to be in line with the Millennium Development Goals.

Framework: It is clear that a knowledge economy is one which is effectively utilising the potential of the growing stock of knowledge and advances in ICT for its overall development. Moreover, it is one where knowledge is created, acquired, transmitted, and used more effectively by enterprises, organizations, individuals, and communities for greater economic and social development. As a result a framework for a knowledge economy could consist of:

- an economic and institutional organisation that provides incentives for the efficient use of existing knowledge, for the creation of new knowledge, and for the dismantling of obsolete activities and the start-up of more efficient new ones;
- an educated and entrepreneurial population that can both create and use new knowledge;
- a dynamic information infrastructure that can facilitate effective communication, dissemination, and processing of information; and
- an efficient innovation system comprising firms, science and research centres, universities, think tanks, consultants, and other organizations that can interact and tap into the growing stock of global knowledge; assimilate and adapt it to local needs; and use it to create new knowledge and technology.

These four components of the framework are consistent with the prescription of the World Bank in its pillars of knowledge economy as discussed below.

Four Pillars of Knowledge Economy: As published in the knowledge zone in the website of the World Bank Knowledge, the following pillars are four critical requisites for a country to be able to fully participate in the knowledge economy:

- **Education & Training:** An educated and skilled population is needed to create, share and use knowledge. There should be established a national education system generating a pool of knowledge specialists and a technology literate work force.

- **Information Infrastructure:** A dynamic information infrastructure, ranging from radio to the Internet is required to facilitate the effective communication, dissemination and processing of information.

- **Economic Incentive and Institutional Regime:** A regulatory and economic environment that enables the free flow of knowledge, supports investment in Information and Communications Technology (ICT), and encourages entrepreneurship is central to the knowledge economy.

- **Innovation Systems:** A network of research centres, universities, think tanks, private enterprises and community groups is necessary to tap into the growing stock of global knowledge, assimilate and adapt it to local needs, and create new knowledge. The systems should also include innovation policies, institutions, and incentives necessary for the development and commercialization of domestic and foreign innovations for the creation of a national innovation system.

Procedure: In view of the foregoing, to achieve a knowledge economy using project management processes, a country should plan to define their vision and the goals to achieve it. The starting point should be a vision statement.

Vision statement: For example, the vision statement could be to build an economy with sustained economic growth and annually decreasing unemployment within a specified number of years as the Koreans stated in their vision statement. This prosperity should be anchored on sustained growth in knowledge economy.

Goals: A country could plan to achieve their goals using the framework suggested in the preceding section that comply with World Bank Four Pillars of Knowledge Economy.

Planning and implementation: Project management introduces the discipline of structured planning and implementation of projects that will help achieve the goals, making them time-constrained so that they become objectives. We should ensure the following:

- For each objective, there should be a clear and quantifiable description of activities necessary to be executed for its achievement with their time line.
- There should be monitoring or tracking and control of the activities being executed to ensure that they remain effective for the achievement of the goals.

In the next section, we shall examine the status of knowledge economy activities in Nigeria using these two measures.

5. An analysis of Efforts towards a knowledge economy in Nigeria

The former and the current situations in these efforts will be discussed. The analysis will consider organisations involved in activities for a knowledge economy

Progress made in Telecommunication

In Nigeria, in the 1950s, 60s and even 70s, people travelled tens or hundreds of kilometres to receive phone calls. Then they used to queue at Nigeria Telecommunication (NITEL) offices to make or receive calls, both national and international calls. Today almost every literate person, who is earning some income, owns and uses a mobile phone; even, secondary school students have phones. Telecommunication in Nigeria has made impressive strides in the economic development of the country. However, as a result of increase in subscriber base and vandalism of equipment especially in areas with security challenges, there is often a dwindling call quality.

Suggested action: It is recommended that telecommunication companies should invest in infrastructure and other facilities required to improve their services.

Computers

There has been much increase in the use of computers. The government, public and private organisations, and individuals have invested much in computers. A few examples could be relevant.

Computers in secondary schools

The former governor of Anambra State, Mr. Peter Obi, was given an award of Excellence and achievement in Information Technology deployment from the Nigeria Computer Society (NCS). He equipped secondary schools in his state with computers. Speaking shortly after the award at the 25th Annual NCS Conference held in Enugu in July, he warned that there was need to face the challenges ahead with right investment

in Information Technology. He said: "We have missed industrial and agricultural era, we have to invest in IT to be part of the new economy. We have the human resources and everything in our disposal to get it right. Because I know that IT is the future, I took a bold step when I was governor, in ensuring that our children are retooled in the right way through ICT by acquiring 70,000 computers for ICT education. That was my own way of building a knowledge based economy which is the theme of this conference."

A second example of a state government intervention is the recent investment by the Lagos State Government in the training of 1000 secondary school teachers in ICT[3]. The Commissioner for Education, Mrs, Olayinka Oladunjoye, spoke at the opening ceremony of the workshop in Lagos, that it was the beginning of a series of capacity building interventions and activities for teachers in the state public secondary schools which the government was putting together. According to her, "In Lagos State, our thinking is that while it is right to build infrastructure, it is even of greater importance to build the capacity of staff who will deliver services to the teeming populace of our State.

Nation-wide

There are a number of Original Equipment Manufacturers (OEMs) of computers in Nigeria. They include Zinox Technologies, Omatek Computers, Beta Computers, Brian Integrated Systems, Ved Technology, etc. However, HP and Dell accounted for about 60% of the 743,000 computer units sold in Nigeria in 2012 [4].

Microsoft Corporation has been involved in various agreements and projects with Nigerian federal and state governments for some years. The Federal Government has long maintained partnerships with Microsoft Corporation for the licensing of its software to government institutions as well as for other collaborative efforts to grow the local ICT sector.

Galaxy Backbone and National Information Technology Development Agency

It is necessary at this point to discuss briefly the operations of two organisations created by the federal Government for ICT industry in Nigeria.

Galaxy Backbone Limited is an Information and Communications Technology services provider, wholly owned by the Federal Government. It was established in 2006 by the Federal Government based on the need for Government to pursue a coordinated and harmonized approach to information and communications technology acquisition, operation and use in the public sector. It should enable the Federal Government to derive more value from its investments in information and communication technology by eliminating duplication, establishing economies of scale, enhancing interoperability of systems and improving Government's capacity to deliver electronic services. Since commencing operations in 2007, it has provided services to various government organisations, ministries and agencies. In its website, it states that its objective is the facilitation of national development through information and communication technology infrastructure and services that will help the attainment of national development goals.

National Information Technology Development Agency (NITDA)

NITDA was established by the provisions of the National Information Technology Development Agency Act (NITDA Act) of 2007 to regulate, monitor, evaluate, and verify the progress of the development of the Information Technology industry.

In February 2013, the National Information Technology Development Agency (NITDA) reported that it established over 228 Rural Information Technology Centres (RITC) in five years across the country, to drive internet penetration. The Director-General (DG) of NITDA, Professor Cleopas Angaye, explained that the centres were established between 2007 and 2012, with majority of them located in the rural areas of the country in a bid to reach both the un-served and under-served areas of the country in line with the country's Millennium Development Goals (MDGs) and the International Telecommunication Union (ITU) directive.

Professor Angaye explained that the agency planned to establish such centres in all the 774 local government headquarters of the country in the years ahead. According to him, the deployment of rural information technology centres across Nigeria was part of MDGs and NITDA's target objective of providing internet access to the undeserved communities. He noted that the centres were a part of the government's response toward providing access to the rural populace across Nigeria and making them an integral part of the new global economy driven by ICT. He said: "Nigerians who reside in the rural communities cannot be neglected in any meaningful citizen-centred programme."

Speaking on the achievements of the centres, Angaye said they contributed in boosting Internet usage from over two million users in 2005 to about 10 million users in 2008 and over 44 million internet users in 2012, thereby positioning Nigeria as one of the fastest growing internet users in sub-Saharan Africa.

"It is expected that Internet users will reach 70 million by 2015 and NITDA hopes that the various centres being deployed across the nation will help push the level of usage in the years ahead," Angaye said.

In the area of technology incubation centres, Angaye said NITDA invested in two ICT incubation centres to facilitate software development in the country. "The centres are in Lagos and Cross River State, and it is hoped that they will create 25 successful ICT businesses by 2015," he said.

Problem of Sustainability of services

"Multi-Million Naira Rural IT Centres Abandoned", this was the headline on September 15, 2012, of a report by Sahara Reporters. The report goes on to narrate that in 2007, Federal Government, through its National Information Technology Development Agency (NITDA), announced the establishment of Rural Information Technology Centres (RITC), the objective of which was to provide Internet access to underserved communities. It goes on to explain that most of the RITC's were opened across the country in 2008, "costing massive amounts of money". One of such Rural Information Technology Centres, located in Jahun Local Government area of Jigawa State, has

suffered such neglect that its expensive equipment is gathering dust and becoming rusty.

People of the Jahun Community, according to the report, complained that the centre, which was commissioned in 2008, “has become a major hideout for miscreants in the area who turned the centre into a haven for carrying out heinous plans. Residents say the C-Band Internet facility planted in the centre only functioned on the day it was commissioned.

According to the residents, none of the equipment, including the expensive solar power instrument installed in the centre, functioned afterwards. Adeniran Muiz, a graduate of Yaba College of Technology who was in the community for his service in the National Youth Service Corps, said that most of the computers and the UPS in the centre failed to come up when he accessed the centre. He suggested that the failure of the equipment has been caused by long years of neglect, and expressed disappointment at the infrastructural neglect by the government and its agency. This was his observation: "Initially, I felt members of the community did not understand the value of the centre because of their perceived level of unawareness but when I began to interact with the youths and some concerned literate elders, I realized that I had maintained a very wrong position about the whole situation". He said he was surprised at the eagerness and level of awareness of the people of the Jahun community after he engaged them in discussion regarding the benefits of the long abandoned and rusting Information Technology centre in their community. He explained that the youths of the community lectured him on the function of the neglected Information Technology centre, stating that it had died off for lack of maintenance. They also drew his attention to the failure of the installed solar system to supply power, and the fact that the Internet facility had no subscription.

Despite all that, the people of Jahun Community took it upon themselves to revive the centre, with the help of Muiz. His account indicates how the aspiration of the community people helped them revive the moribund IT Centre at that time.

Lessons: The IT centre has a capacity to admit about 90 students but suffers from poor management and funding. The agency that set up the place, NITDA, has reportedly failed to show up to ensure continuous and productive management of the centre. The reporter claims: “Even when contacted about how the centre is fairing, no response came, which suggests a complete lack of interest from the agency on a centre it set up using huge amounts of money. The agency failed to show the will to maintain and use the centres set up in all the locations where it did to benefit the people of host communities”.

One of the volunteers managing the centre complained: "The Internet service is quite expensive to run due to the nature of the C-Band subscription. By and by, the subscription we made a couple of months ago will expire and there is currently no hope for continual subscription as the community seems to have been overstressed already by the financial burden of sustaining the centre. In addition, the solar facility at the centre is faulty. Consequently, the centre runs solely on diesel since the government cannot provide stable power for its citizens."

According to the reporter, “The RITC in Jahun is not the only place set up by the NITDA that has gulped millions of Naira, only to be abandoned by the government. Within Jigawa State alone, I know of at least two other centres that are not functional and have been abandoned by the Agency since the inception of the projects,” Muiz observed. “There is one abandoned in Aujara town in Jahun LGA and another one Zareku town in Miga LGA that I personally know of."

The preceding account suggests that the facilities put in place by NITDA in some rural areas are not being monitored and maintained and reportedly abandoned.

Education at the Tertiary Level and Research Centres

Sadly, our tertiary institutions, like many other organisations in the country, have been bogged down in recurrent strikes on conditions of service. These tend to overshadow and indeed relegate to the background the important role they should be playing for the development of the nation. The roles include:

- Networking and collaborating with universities overseas to help them decide on how to make meaningful contributions to the economic growth of the nations.
- In addition to straightening out their conditions of service, there should be a funding system that supports technological development across higher education institutions.

Some of the roles of universities and public research organisations in a knowledge economy are as follows:

- Universities should be at the heart of the knowledge economy. In addition to their education role, they should support the economy directly by being a key contributor to the research base. They should excel in conducting applied research to solve practical and local and national technical business challenges.

- They should connect directly with their local economies by cultivating relationships with local businesses and helping to focus some of their programmes in meeting local needs and solving problems.

- These routes are important for the knowledge generation and transfer relationships that should help develop our knowledge economy.

- Important factors for the creation of effective education and innovation systems for the advancement of the knowledge society include the availability of a reliable high-speed Internet broadband connection to support remote educational systems, including distance learning software support systems, digital library access systems and logistics support systems. It is doubtful whether or not many of these exist in our institutions of higher learning today.

- The provision of reliable and rapid forms of communication between academic institutions

Concluding Remarks

In concluding this paper, two points that are considered necessary to be emphasised further are the development of human resources and coordination of efforts and monitoring of developed facilities.

Building a pool of highly developed human resources: This is one of the Four Pillars of a Knowledge Economy. Governments in most developed nations recognise that one prerequisite for realising knowledge economy is that higher education, research and innovation systems need to be more tightly linked to economic and social development. Their economy should be characterised by a highly educated pool of knowledge workers, driven by a sustained expansion in the graduate workforce. An economy that should show improvements across all disciplines, with much emphasis given to the quality of science, technology, engineering, and maths (STEM) graduates.

Coordination and Monitoring of Developed Facilities: There should be monitoring and control of the activities being executed to ensure that they remain effective for the achievement of the goals. It does not help if millions of dollars are invested to build and commission structures to achieve goals then the commissioned products or services are neglected after a few months. Such products or services should be built for long-term sustainability otherwise, they will fail after a few years and no progress will have been made.

The major failure in efforts to achieve sustained economic development in Nigeria and some other developing countries is the inability to monitor and sustain systems, products and services built with much investment of funds and other resources. This is as a result of failure to plan for the monitoring and controlling of the services to ensure their continuous availability. As a result, many products fail a few years after commissioning, the country then returns to the condition before the services and products were commissioned.

Another major failure has been lack of coordination. As has been shown in this article some efforts have been made in the country to develop the ICT industry. However, it appears that a coordinated planned strategic programme is not in place for the achievement of a knowledge economy. The outlook is that of a series of activities with no structured implementation plans for the achievement of defined goals that comprise a holistic planned programme for the achievement of knowledge economy.

There needs to be deliberate efforts to coordinate structured program of projects that will lead to the establishment of defined goals aimed at achieving the envisioned objectives within specified time frames. It is not feasible that current apparent haphazard uncoordinated efforts will yield an effective and sustainable knowledge economy irrespective of high investment of funds into the projects. It is therefore essential to introduce project management processes to help us in disciplined planning and effective implementation of our goals to achieve a knowledge economy in Nigeria.

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