MATHEMATICS: A PIVOTAL REBRANDING TOOL FOR CHANGING COMMUNITIES

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Abstract

A strong brand is invaluable as the battle for it is high. Nigeria is a country that has been linked with corruption, high unemployment rates, underdevelopment among others. Rebranding Nigeria transforms it into a new haven and placing it side by side with developed nations of the world. O'Tudor (2009) reiterated that as a country, we need personal, corporate and institutional reformation to achieve a transformational repositioning of our national brand identity. Some developed countries like United States of America, USA, India, and Japan rebranded before reaching their status as world leaders today. The resounding presence of Mathematics is evident in all fields of human endeavor. This paper examines the pivotal role that Mathematics plays in all aspects restating it as a central tool for changing communities.

In March 2009, rebranding Nigeria project was launched with a slogan "Nigeria; Good People, Great Nation". According to former information Minister, Prof. Dora Akunyili, "Nigeria cannot wait until it solves all her problems before it can start to give serious thought to rebranding its' battered image. This is because our development is tied to our image (Economic Confidential, 2009). Every nation seeks positive change. Developed nations of the world started up as developing countries before they reached their present position as World Leaders. Changing communities is the ability of a country to improve the social welfare of the people. It involves development of infrastructure such as roads, hospitals, airports, dams, schools, education, health, sports as well as development of its citizenry. Changing communities encompass economic development which is the increase in the standards of living of a nation's population with sustained growth from a simple, low-income economy to a modern, high-income. So, economic development and growth implies a changing community.

Mathematics is a branch of knowledge that deals with measurement, numbers and quantities. Mathematics is a tool, its knowledge and skills are the bedrock of all societal transformation and transfer of ideas into reality (Otunu-Ogbisi, 2009). Each of the diverse branches of mathematics has useful applications on which fields of human endeavor hang. This pivotal position that Mathematics occupies makes it a tool for rebranding. This paper focuses on the position of Mathematics as a pivotal rebranding tool for changing communities.

Rebranding Nigeria for Changing Communities

Rebranding is the creating of a new name, term, symbol, design or a combination of them for an established brand with the intention of developing a differential (new) position in the mind of stakeholders and competition (Wikipedia, 2011). According to Daniel (2009), "Rebranding Nigeria simply means to redefine our concepts of Nationhood and engage wholly in the process of National renewal to attain a height where national interest is exalted far above personal, ethno-religious and religions interest". These renewal changes are typically aimed at the repositioning of a brand, sometimes in an attempt to distance itself from

certain negative connotations of the previous branding.

However, the main reason for a re-brand is to communicate a new message intentionally through a deliberate change in strategy from emergent situations. Firms have rebranded due to the need to shed a negative image.

Nigeria is currently termed a developing nation. Omale (2009) recalled that the closest Nigeria ever made to rebranding was when General Buhari and Idiagbon genuinely attempted to redirect the future of Nigeria through the Introduction of War Against Indiscipline (WAI). Nigeria's population is estimated at 158.2 million with an area of 923,768sq Km. Nigeria as a nation has been linked to 419 internet scams, corruption, voodoo, poverty and government corruption. It is campaigning for a new image and a new reputation in an effort to attract some much needed investment, developmental and economic growth in all facets of its hierarchical levels. Stories abound of inhumane and gory stories of treatment meted out to Nigerians and abroad just because they are "Nigerians". Aririesike (2009) opined that it is a herculean task marketing Nigeria brand in the international community. It is not a task that cannot be accomplished because Nigeria stands to gain tremendously from rebranding. However, O'Tudor (2009) cautioned that before rebranding Nigeria, we ought to perfect the internal process that constitute the brand DNA. He submitted that successful nations started with rebranding and now have brands associated with them for example, India has the education system regarded as the best in the world, Japanese, has global brands like Sony, Toyota and Nikon. Strength of these brands and the economic power they have delivered to their owners to be great World powers today.

Mathematics, Its Branches and Uses

Mathematics is an indispensable tool in all human endeavors. The richness of mathematics is evident in each branch:

Mathematics Education: The practice of teaching and learning mathematics along with the problem of solving techniques and issues relating to curriculum.

Practical Mathematics: Arithmetic, elementary algebra, plane and solid geometry.

Trigonometry: Covers measuring degrees, equations and formulae essential to equip for trade or craft.

Abstract and mathematics concept: Involves set and functions.

Euclidean Geometry: Number Theory; branch of pure Mathematics concerned with the properties of numbers in general and integers called higher Arithmetic.

Geometry: Involves Mathematics concerned with questions of size, shapes, relative position of figures and with properties of space.

Mechanics: Concerned with behavior of physical bodies when subjected to focus or displacement and subsequent effect of the bodies on their environment.

Probability: Mathematics of chance, quantification of our rational belief, Mathematics structures used to model pair wise relations between objects from a certain collection for studying shortest route path.

Commercial Mathematics: Mathematics of accounts, profit and loss.

Mathematics as a Pivot Rebranding Tool

Nigeria needs rebranding for its economic growth. The usefulness of mathematics in all fields that are needed for changing communities is highlighted below:

Science and Technology

Mathematics is the foundation base of Science and Technology. Ugbebor (2009) professed that Mathematics is the language of Science and Technology hence prioritization of mathematics teaching and learning in the bid for changing communities is a basic requirement in all subjects' right from primary, secondary to tertiary levels. Mathematics is

needed in integrated science right to physics, chemistry, biology and engineering courses which lead to Technology. Countries like Japan, Taiwan, Singapore, South Korea, China and India are recognized due to their Science, Technology and Innovation (STI) driven performance. Ibidapo-Obe (2011) resounded that scientific knowledge is fundamental to addressing the critical issues of economic transformation of unemployment, under poverty, hunger and disease and the sustainable use of natural resources facing the world today. Otunu-Ogbisi and Ukpebor (2009) also supported that Mathematics is an indispensable tool for the transformation of technological development to reality since technology development communicates the idea of growth expansion and improvement in goods and services emanating from practical application of science.

Stock Exchange:

Investors use a stock broker to purchase securities from the stock exchange. A client asks for a quote from a stockbroker to make a purchase, stockbroker must calculate the purchase price which involves computing. The stockbroker must take the price/share of the stock at that minute and multiply it by the quantity that the client wants to purchase. Then the broker will add a commission fee to that total. The stockbroker will need to calculate this total rather quickly to give a client a quick and accurate estimate (Money eHow, 2011). All these calculations involve the use of Mathematics.

Banking Sector:

Sanusi (2011) stated that "Banking system plays the important role of promoting economic growth and development through the process of financial intermediation and is the conduit for the implementation of monetary policy". Banks play the central role in development in every economy by mobilizing resources for productive investment. Transaction in banks is with money but money is valued, counted and recorded using numbers. Bank transactions are recorded using Mathematics in stock bonds, asset base, etc. Daily, monthly, quarterly transactions are prepared with applications from profit and loss, percentages and higher arithmetic. Banks recently consolidated with a capital base of ₦25 billion naira, this is valuation using numbers, and this strengthened the banks.

Cryptography:

Cryptography is the study of hiding information for creating codes for Automated Teller Machines ATM/Credit cards. ATM cards use pins that are numbers and this gives access to accounts wherever it may be. Since the inception of ATM card in Nigeria, banking transactions have been less stressful. With just 4-number pin-code, transactions ranging from banking, money transfer, utility payment like Power Holding Company of Nigeria PHCN, Water Rates, revenue tax payments can be effected, even payments like cable television payment and mobile phones recharge cards can be paid.

Cryptography is indispensable to safety in modern communication (Ugbebor, 2010). She further stressed that Number Theory thought to be an abstract area of Mathematics has in modern times turned out to be the basis of cryptography. Ojugo, Oyemade, Orhionkpaiyo and Aghware (2010) resolved that cryptography as the science and art of ciphers/codes that allow two users to exchange data in such a way that other users cannot understand through the use of data altering schemes such that only an intended recipient can undo and discover the original text sent by the sender.

Medicine:

Mathematics is also a key to Medicine. Functional numeracy is an essential tool to an

aspiring medical professional as functional literacy. Mathematics skill needed in medicine include basic mathematical knowledge sufficient to calculate drug doses, concentrations, an understanding of the core statistical concepts most commonly represented in the medical literature, knowledge of Algebra to understand calculations of acid-base status, ability to appreciate whether or not results are mathematically plausible (Nusabanum, 2006). Logical reasoning that is necessary for the study of Mathematics is an essential element of clinical reasoning. A medical practitioner needs the ability to manipulate numbers, including fractions, ratios, powers of ten (10) and logarithms. Basic understanding of Probability, graphs and simple Algebra are all needed by medical practitioners. Developed countries have low prevalent rate of spread of diseases, this is calculated using percentages, using ratios and probability.

Weather/Forecast:

Weather forecast is the science of making predictions about general and specific weather phenomena for a given area based on observations of such weather related factors. In meteorology, primitive equations are a version of the Navier-Strokes equation that describes hydro dynamical flow on the sphere. Thus, they are a good approximation of global atmosphere flow and are used in most atmospheric models. Synoptic forecasting is based and rooted with the QG-Omega equation, calculus, differential equations and partial differential equations are all essential tools of a meteorologist. Weather forecasting helps us to make more informed daily decisions and help keeps us out of danger. Weather reports are expressed using numbers 300C, 700C, 200C, 500km below sea level, etc. These forecasts prepare countries for any eventualities, natural disaster like tremor, earthquakes and its aftershocks, floods, etc. This information make the country to gear up its emergency rescue teams like National Emergency Management Agency NEMA, Fire service and rescue squad to be strengthened and stronger and even to put some gadgets and agency in place as prevention strategies.

Agriculture:

Agriculture can be defined as the tradition, the art and/or the science-technology of culturing, multiplying, maturing and sustaining reproducibility of biological (plant, animal and aquatic) life for the ultimate purpose of providing nourishment support and sustenance of human life and existence on planet earth (Emekoma, 2010). Agriculture provides the Nation with food essential for the nutritional development of a nation. The number of crops to be planted, amount of fertilizers to be used in ratio is estimated using numbers. The planting of root and tree crops involves knowing the dimensions and spacing between each crop and the number of crops and the required plot it will take for its proper propagation is mathematically calculated. Knowing the quantity of chemical which will include the hatching of eggs to fingerlings and the capacity of fingerlings that each pond will contain depends on Mathematical knowledge (Otunu-Ogbisi & Ukpebor, 2010). Harvest are recorded using numbers. Rainy/dry season are predicated using probability. Animal in animal farming are recorded using numbers, chicken feeds are measured using kilogram and ratio of chickens to the feed. Ratio is used to share tractors to agriculture rich states as well as fertilizers; this in all will improve national food security. Emekoma (2010) advocated that with adequate farm tractor, over 80% of direct human effort in the farming endeavor has been cared for and productivity of the individual farmer is increased over a hundred fold.

Everyday Life Activity:

In everyday life, Mathematics is still central to the well-being of our day-to-day activities. We project to wake up using time, take account of budget for the day and how much the daily/weekly/monthly expenses will consume. We consider how many people are our dependents, use ratios to share money to them according to age, need, size or priority. At school/work, we check our work load and project % of accomplishment that will give us satisfactory pass mark. We consider weather report that meteorologists have used Mathematics to deduce if we need to take umbrella, or it will be best to stay at home. We use computer that is founded on the principles of abacus and binary operation (0, 1), mobile phones are results from technology that mathematics is its foundation base to connect to our friends, family and business associates. At the end of the day, we assess the percentage of accomplishment for the day. Each of our daily activities centers on the use of Mathematics.

Conclusion

Mathematics is an indispensable tool in all human endeavors and in any nation especially in our country Nigeria that aspires to be a great world power. The central position that Mathematics plays in all fields have been highlighted above from Science and Technology, Stock Exchange, Banking Sector, Cryptography, Medicine, Weather Forecast, Agriculture and in Every-day-to-day activities.

Recommendations

The teaching of Mathematics should be done to help learners see, evaluate and appreciate the beauty and inherent universal usefulness in all sphere of the economy. There is the need to keep learners firmly anchored on a set of human values; to teach young teachers how to process the vast variety of information so that they pick up Mathematical knowledge that are qualitative and functional to themselves and the society at large (Abubakar, 2010).

Rebranding is a welcome development in Nigeria and it is the duty of Nigeria to rebrand Nigeria. We all can re-brand Nigeria, once we continue to re-brand ourselves then Nigeria can be re-branded (Aririesike, 2009). With Mathematics, rebranding ourselves ultimately rebrands Nigeria transforming Nigeria into a world rich economy. And we can ultimately claim "Nigeria; Good People, Great Nation".

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