



My Quest for an Internet

In this, the 48th installment of our weekly series at emeagwali.com, we present an excerpt from Nigeria's 50th anniversary lecture at the Embassy of Nigeria, Paris.

Memories of Colonial Africa

– Part 2 of 5

By [Philip Emeagwali](#)

Excerpt from Nigeria's 50th anniversary lecture at the Embassy of Nigeria, Paris. Lecture video and audio are posted at <http://www.youtube.com/emeagwali#p/a/u/1/ulb-ZyZi2BY> and emeagwali.com.

I was born in 1954 in colonial Africa. One of my most cherished mementos from the colony of Nigeria is one of the pennies I received for my school lunch allowance. The coins bore the likeness of Edward VIII, who became King of England on January 20, 1936, and were minted in anticipation of his reign. However, Edward abdicated the throne on December 11th of that year before he could be crowned. He gave up the British kingdom to marry the love of his life, an American divorcee.

In 1960, a typical day in my life began at our compound on Yoruba Road, in Sapele. Our compound was adjacent to the Eagle Club, a night club where I ran errands for music legends, such as master trumpeters E.T. Mensah, Eddy Okonta, and [Zeal Onyia](#). They would give me a penny to buy two sticks of cigarettes and I would bring back their half-penny change.

I am the artist that told stories about how the Laws of Motion gave rise to the eternal truths of calculus; timeless truths that will outlast the changing opinions of all times.... and my reinvented algorithms became my fingerprints on the sands of time.

Looking forward 50 years, I foresee that nations delivering information and communication technologies will indirectly rule Africa.

Some mornings, my mother would give me a penny with the instructions: "Buy rice with a farthing, beans with a

farthing, and bring back a half-penny change."

When I told this story to my son, Ijeoma, he interrupted, saying, incredulously "Daddy, you can't get change for a penny!" I then show him my souvenir: a British West African central-holed coin, bearing the head of King George V and minted in 1936 with the inscription "one tenth of a penny." The central hole was for stringing the coins together, to carry them. The world has changed greatly since my youth!

must look back to the first 46 years, spent under colonial rule, to understand the 50 post-colonial years of their self-rule. Looking backward, like the Sankofa, is a prerequisite for understanding the way forward.

With self-rule came responsibility. We're now being held accountable for our actions and inaction, our coups and corruption, and our civil wars in Biafra, Congo, and Rwanda.

Nigeria has existed for 96 years and has been independent for 50 years. Nigerians

Looking backward 96 years will enable Nigeria to understand when and where

its train derailed and how to put it back on track. I believe our train derailed because, although the 46 pre-independence years were a brain-gain period, the 50 post-independence years have been marked by the largest brain drain since the Atlantic slave trade.

Looking forward 50 years, I foresee that nations delivering information and communication technologies will indirectly rule Africa. I see the cellular phone, the computer, and the internet enabling Africa to replace selection with election. I see the internet enabling citizens to become reporters, decentralizing the media. I see technology enabling freedom of the press and democracy in Africa.

Kwame Nkrumah said, "Socialism without science is void." I say, "Democracy without technology is void."

A scientist can be famous yet remain unknown. The grand challenge for scientists is to focus on discoveries that reduce poverty rather than on winning prizes. To focus on the prizes we have won, instead of the discoveries we have made, would be akin to dwelling on a hero's medal and ignoring his heroism.

Discoveries and inventions that increase wealth and reduce poverty are the "heroes" of science and technology and

one hundred nations have printed their revered scientists' likenesses on their currency. This elevated those scientists as exalted bearers of their people's best vision of themselves.

Please allow me to answer a question I was asked: What did I contribute to science and technology? I reformulated and solved nine partial differential equations listed in the 20 Grand Challenges of computing.

The equations I invented are akin to the iconic Navier-Stokes equations listed in the Seven Millennium Problems of mathematics. Those Seven Millennium Problems are to mathematics what the Seven Wonders of the World are to history. To be accurate, the equations I solved were not exactly solvable, but were computably solvable. That is, I digitally solved the grand challenge version, not the millennium one that must be solved logically.

A novelist is a storyteller, and a scientist is a history maker. A novelist creates a fictional world, but [a scientist discovers factual stories about our universe](#). I am an internet scientist who discovered factual stories. **I reprogrammed and reinvented an internet to tell 65,000 factual stories to as many sub-computers.**

The internet—meets humanity's fundamental need to compute and communicate—and spreads like bush fire, and resonates decade after decade, and maybe century after century. The internet is a technology that both connects people and connect with people in a way that will forever remain deep and enduring.

I am the artist that told stories about how the Laws of Motion gave rise to the eternal truths of calculus; timeless truths that will outlast the changing opinions of all times. My restated Second Law of Motion became my footprints; my reformulated partial differential equations became my handprints; and my reinvented algorithms became my fingerprints on the sands of time.

I'm the physicist and the mathematician who told a story in which a new technology came alive through three boards: a storyboard, a blackboard, and a motherboard.

My story has been retold from boardrooms to newsrooms, from classrooms to living rooms. It all began as a dialogue between a supercomputer programmer and his 65,000 sub-computers, which he reprogrammed as an internet.

During a conversation conducted in the languages of physics and mathematics between me and my machines, in 1989, I performed a world record of 3.1 billion calculations per second: This occurred when my keyboard replaced the handwriting on my blackboard and bridged the gap between man and motherboard. I became known for my discovery that a supercomputer is an internet and vice versa, and I, the storyteller, became both the story and the witness.

My journey to the frontier of knowledge did not begin in America. It began in 1960 in Colonial Africa.



My mother, Mrs. Agatha Iyanma Emeagwali (*nee* Balonwu), is second from left. Photo taken with her distant relatives. Mrs. Ifejika (*nee* Oranye of Umuasele Village of Onitsha), Ms. Orakwue (of Umudei Village, Onitsha), Ms. Nwaosisi (Umuasele Village, Onitsha). Photo taken in Forcados, Nigeria in about May 1958.



I lived here, adjacent Eagle Club, from 1958 to 1962. The little boy stands in front of my family's former room-and-parlour residence. (Yoruba Road, Sapele, Nigeria. Photo taken on 11-29-00)

ZEAL ONYIA

<http://www.youtube.com/watch?v=4Nxi4YRIAXI&feature=related>

<http://www.youtube.com/watch?v=4Nxi4YRIAXI>

<http://www.youtube.com/watch?v=xIIMy9g0J5E&feature=related>

EDDY OKONTA

http://www.youtube.com/watch?v=7_QoMDG7t30&NR=1

<http://www.youtube.com/watch?v=9W XKMR6PaKs>

E.T. MENSAH

<http://www.youtube.com/watch?v=9m1TaPgO14k>

<http://www.youtube.com/watch?v=CSc7C4sf2P0&feature=related>

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E.T. Mensah performed at the Eagle Club, adjacent to my family compound.





Philip Emeagwali has been called “a father of the Internet” by CNN and TIME, and extolled as a “Digital Giant” by BBC and as “one of the great minds of the Information Age” by former U.S. President Bill Clinton. He was voted history’s greatest scientist of African descent by New African.

Date: 10/2/2006, 11:22 am, GMT +6

Name: Ike Bruno
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A genius in our time. You make my life whole by your accomplishments, unrivalled, unequalled by any one. Keep the flag flying. You are truly loved and God loves you more.

Ikenna Onyeso

Date: 10/2/2006, 8:26 am, GMT +6

Name: afolabi femi <84.254.166.178>

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you are a source of inspiration and hope for us all.our world is waiting earnestly for minds like yours to effect positive change

in mankind. Happy independence anniversary of our motherland Nigeria.

Date: 9/30/2006, 8:05 pm, GMT +6

Name: Obodoechina
Akolisa <80.78.18.64>

Location: Onitsha Anambra state Nigeria

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i just want to commend you on your website because i learnt a lot from it. keep it up.

Date: 9/30/2006, 1:30 am, GMT +6

Name: UCHENNA TIMOTHY
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Location: MAIDUGURI, BORNO STATE
NIGERIA

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I congratulate you.

I visited your websites and it was a glorious experience ; it was packed with literary Contents and Brilliant ideas of academic and intellectual benefits, thus armed with the courage and other spiritual weapons gained from your site, which drives you towards the zenith your profession. I hereby vote you in my world as My Great Hero, My Great Role Model, and My Archetype of Excellence.

I admire your spirit of enterprise and of endeavour. You have shed lustre on Biafran - our country and our race. You have proved by example that tenacity of purpose is the key to unlock the barred gates of mystery and of fate. You have taught me by your efforts that the word "impossibility" must be erased from my mind, and that with requisite determination, assiduity, self confidence and industry, the dizzy heights of academic fame can no longer be reserved for a given few.

On your Speeches especially the one Titled: " How Do We Reverse the Brain drain?" and "Black History:Lost, Stolen or Strayed" if i did not learn any thing, I

learnt to intensify in my struggle to receive a better education, and it also dawn on me that Education is the sore need of our country(Nigeria) and the education that she is needs is in my own words, "not Europeanising, but rather Euro-Africanising the Africans" And this is my aim in whatever activity i enagage myself.

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