

Quest for Internet

In the 92nd installment of our weekly series at emeagwali.com, we present a Portuguese language interview and profile of Philip Emeagwali in one of Brazil's leading newspapers as well as entries from his diary. Excerpt from this interview was published in Portuguese language in the Brazilian newspaper O Estado de S. Paulo (www.estadao.com.br, September 11, 2001). The interview was conducted by Joa Magalhaes.

O ESTADO DE S. PAULO

QUARTA-FEIRA

● Edição dos 2014

SP, RJ, MG, PB e SC: R\$ 2,50. Demais Estados: ver tabela na página A2.

10 de junho de 2009 - ANO 130, Nº 42239

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DIRETOR:
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estadao.com.br

Investimento desaba e consumo segura PIB

Queda de 0,8% no trimestre indica recessão, mas já há sinais de leve reação

O PIB do primeiro trimestre de 2009 caiu 0,8% na comparação com o último trimestre de 2008 e 1,8% ante o mesmo período do ano passado. O resultado obrigará "processos seletivos" nas fábricas de aço, celulose e mercado. O crescimento dos serviços contrabalançou a forte queda na indústria. No setor de transformação, a contração foi de 32,6% sobre o primeiro trimestre de 2008. A expansão do consumo das famílias e dos gastos do governo sustentou parcialmente o intenso recuo dos investimentos, que chegou a 12,5% em relação ao último trimestre de 2008 - a maior desde 2004. O presidente Luiz Inácio de Silva se disse "triste" com o resultado. O ministro da Fazenda, Guido Mantega, defendeu o programa de estímulo e novos estímulos setoriais. ● **PÁG. B2 e B3**

RESUMENHO DA ECONOMIA

Ante 4º trimestre de 2008 **↘ -0,8%**

Ante 1º trimestre de 2008 **↘ -1,8%**

Variação ante trimestre anterior

Trimestre	Variação (%)
1/03	-4,40%
1/04	2,40%
1/05	0,80%
1/06	1,20%
1/07	1,70%
1/08	1,60%
4/08	-0,8%

Senado usou 300 atos secretos para beneficiar amigos

Sarney diz desconhecer medidas

Levantamento feito por técnicos do Senado nos últimos 45 dias detectou cerca de 300 atos administrativos secretos, alguns deles adotados há mais de 10 anos, relatam os repórteres Rosa Costa e Leandro Caloni. Na relação aparecem nomeações de um filho do presidente do Senado, José Sarney (PMDB-AP), e da ex-mulher do deputado Eliasse Padilha (PMDB-RS), além de medidas impopulares como a suspensão de assistência odontológica e psicológica vitalícia a esboços de ex-parlamentares. Boa parte dos decisões foram originadas pelo então diretor-geral do Senado, Agnelo Maia, para agradar aos vários presidentes

Neto de Sarney ganhou cargo

Ele tem 22 anos e ainda não completou a faculdade. Mas graças à revelação dos atos secretos do Senado sabe-se que ele ocupou um cargo com R\$ 7,6 mil mensais de remuneração. João Fernando Michel Gonçalves Sarney é neto de José Sarney. ● **PÁG. A4**

Rubens Ricupero

A impressão é que o primeiro trimestre é um bom augúrio para o resto do ano. ● **PÁG. B2**

Ilan Goldfajn

O que se pode dizer é estimo na direção certa, mas a passos lentos atrás. ● **PÁG. B2**

The interview and profile of Philip Emeagwali in this newspaper are shown below.

O BILL GATES AFRICANO

A que o senhor atribui seu sucesso?

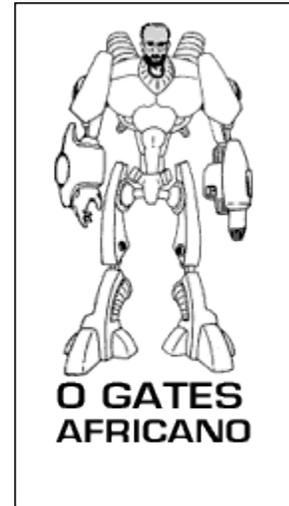
Eu trabalho duro e acredito no ditado que diz: "Sair cedo da cama para fazer a colheita, torna os homens saudáveis, ricos e sábios". E sempre falo para mim mesmo que se as coisas não dão certo da primeira vez, deve-se tentar de novo.

O que a tecnologia pode fazer pela África?

A tecnologia gera riqueza e desenvolvimento. E como disse Kwame Nkrumah (líder de Gana, propôs a criação de uma África unificada), socialismo sem ciência é inútil. Então, o que a África precisa é de bons cientistas para se tornar um continente rico e desenvolvido.

Quem o influenciou em seu trabalho?

O matemático africano Euclides. Ele nunca pôs os pés fora da África e viveu numa cidade predominantemente negra, ao lado de uns poucos imigrantes judeus e gregos. Ele é lembrado como o mais importante matemático de todos os tempos e seu livro Os Elementos só perde em tiragens para a Bíblia.



Como o senhor chegou à Máquina da Conexão.

O computador moderno é produto de uma série de invenções, desde que, há dois mil anos, na China, surgiu o ábaco, que era um engenho de calcular. Em cada geração, cientistas o reiventam. Eu sou um deles. Fui o primeiro a demonstrar que muitos computadores interligados são mais rápidos do que um só, com um superprocessador. Se duas cabeças pensam melhor do que uma, o que dizer então de 65 mil cabeças. Por essa razão, programei um computador para trabalhar com milhares de outros. Em 1988, compartilhei 65 mil processadores que conseguiram realizar 3,1 bilhões de cálculos por segundo. Agora a Apple e a IBM estão se valendo da minha criação.

Desde quando o senhor acessa a Internet e para quê?

Desde 1974. Em 1970, era apenas uma rede internacional de computadores, freqüentada por poucos acadêmicos que se comunicavam imprimindo palavras em teletipos. Não havia fotos, música, vídeos, voz. Os domínios eram raros. Mas também não precisávamos de nenhum pontocom ou pontoedu para enviar nossos e-mails. Em 1987, eu ficava 14 horas por dia, pendurado na NSFnet (National Science Foundation), a predecessora da Internet. Eu usava o Telnet (acesso remoto) e o FTP (protocolo de transferência de arquivos) para me conectar com uma dúzia de centros de computação, como o Laboratório Nacional de Los Alamos, na Califórnia. No livro 'A História da Internet', de Christos J. P. Moschovitis, há muita coisa a meu respeito. Atualmente, dedico-me a distribuir meus artigos para jornais e revistas online e impressos.

De que forma Internet beneficia inventores como o senhor?

Pessoalmente, não tenho outra escolha a não ser estar sempre online. Os supercomputadores que eu programei estão a quilômetros de distância e só posso alcançá-los via Internet. Além disso, conquistei novas audiências. Em dias normais, recebo e-mails de uma pequena cidade africana

pedindo-me ajuda ou de um inventor à cata de orientação. Para mim, a Internet é boa e má. É boa porque me permite trocar idéias férteis com pessoas que nunca vi na vida. É má porque fragmenta meu tempo, me torna ansioso e me força a responder e-mails de dúvidas e mais dúvidas sobre como obter sucesso profissional. Por causa disso, minha mulher me apelidou de 'Dear Abby' (coluna de grande sucesso popular, publicada por centenas de jornais norte-americanos e assinada por Pauline e Jeanne Phillips, mãe e filha, respectivamente).

Quais são os seus sites favoritos?

Adoro sites de jornais estrangeiros. Dá a impressão de que estou viajando por esse mundo afora. Tenho um pouco de dificuldade de ler em português, mas assim mesmo acessei o portal do **Estadão** que me pareceu bem dinâmico.



Estado: What is your background in Nigeria?



Emeagwali: My hometown is Onitsha (Oh-nih-chaah), a corruption of the word Orisha (Oh-rih-chaah).

In the 1550s, the slave wars forced my ancestors to flee the Benin Kingdom to present day city of Onitsha. The Portuguese exported to Brazil, hundreds of thousands of slaves that were of the Orisha faith. The British and Spanish also exported Orisha slaves to the Caribbean Islands of Haiti, Cuba, and Trinidad. The influence of the Orisha faith is seen in the religious rites, myths, music and beliefs of Brazilians of African descent.

Growing up in Africa was the most interesting period of my life. I was active in the Catholic Church choir. I was also an altar boy for a group of Irish priests of the Holy Ghost traveling and we traveled together to churches in small African communities.

After completing my seventh grade, civil war broke out in Nigerian and I was forced to drop out of school and live in refugee camps. Five million people or one in three Biafrans became refugees.

I spent my teenage years trapped in refugee camps. Dodging the rubble underneath ceilings crumbling from rocket shells. Living in fear and poverty with no money to pay my school fees. I was forced to drop out of school and study on my own. I studied from 6 a.m. to midnight to earn my high school equivalency diploma.

Food was scarce in the refugee camps. We ate in the International Red Cross feeding centers, when food is available. I spent my days gathering palm nuts from the rain forest, hunting birds with slingshots and fishing on the River Niger. One million Biafrans died from hunger and starvation. You couldn't find a dog within the refugee camps. They've all been eaten. There were

few adult men in our refugee camp. The men were conscripted into the army and sent to the war fronts.



Subject: Burutu

Date: Wed, 11 Jan 2012 10:10:37 +0100

From: Behrendt <georg@behrendt.es>

Dear Professor Emeagwali!

My grandfather, Gerardo Martín Miranda, died last 17th of November at the age of 95. He was captain of the Spanish merchant marine. I found a picture dated 15-12-1941 in Borutu; he is the left sitting man. As I saw that your mother comes from Borutu I thought that it would be nice to share this very old picture with you.

I send you my best regards.

Georg Behrendt Martín

Bilbao, Spain

NOTE: Philip Emeagwali's mother lived in Burutu in 1958 but hails from Onitsha.

2/10-17-2011

3/10-17-2011

↑
move
into

For a decade, I searched for my
~~supercomputer~~
~~internet~~ as a planet-sized hyperball ^{internet} ↑
 and in the ~~eight~~ ~~eight~~ ~~continent~~
 in the sky but discovered it as a

sixteen-dimension

↑

hypercube ^{is} ~~super~~ internet
 in my bed room. That ~~my~~
 quest for an internet
 search, took me across various regions

of the United States — from the

Pacific Northwest ^{in 1974} ↑ to the East Coast ^{in 1971} ↑ to
 the Rocky Mountains ^{in 1986} ↑ (~~Wyoming?~~) to
 the Midwest regions in 1987.

one of my earliest

in the East Coast

In ^{one of my earliest} my Eureka moments!, in 1984 ^{in the East Coast} ↑ I
 asked myself:

"~~But~~ Are you not the treasure-hunter

that was born in Western Region of Colonial Nigeria
 and that left Biafra to Nigeria
 The ~~Gold~~ medal within us 01

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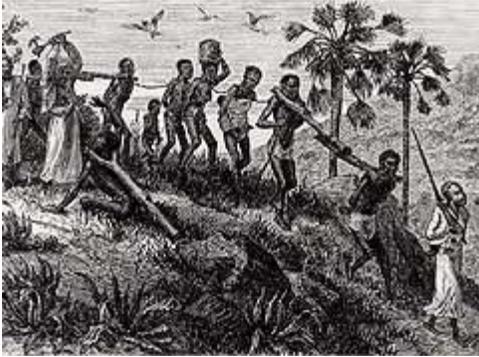
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A slave caravan on the west coast of Africa



Estado: Suppose you have heroes or persons you admire the most. Who are they?



Emeagwali:

One memorable story that has been told and retold over several generations within my family was how King Chima helped my ancestors escape from the wicked King Esigie of the Benin Kingdom. Esigie sold many Africans to Portuguese slave traders. With the exception of Nigeria, Brazil has more people of African descent. My ancestors who could not escape from Esigie brought the Orisha faith to Brazil.

In the 1550s, King Chima led his people to make a heroic and arduous journey to freedom. I admire his courage, leadership and ability to lead his oppressed people to freedom. Without his courage, all my ancestors would have been enslaved in Brazil, Cuba, Haiti and Trinidad. His courageous journey was not easy. It was a time animal spirits occupied the rain forests. It took a lot of courage for King Chima to lead the Orishas away from the Benin Kingdom and into the rain forest wilderness.

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 **Estado:** When and where did you become a refugee?

 **Emeagwali:** I lived in refugee camps during the 1967-70 civil war between the nations of Nigeria and Biafra. The civil war was provoked by an ethnic uprising in which 50,000 Igbo-speaking Nigerians were killed in retaliation for their role in a 1966 military coup. The massacre of 50,000 people forced one million Igbos, including my family, to flee to their homeland.

As the war progressed, five million Igbo refugees fled the advancing Nigerian army. We fled for the fifth time when the Nigerian army captured Onitsha on March 20, 1968. The reason we fled was that the Nigerian army did not keep prisoners. In my hometown of Onitsha, 2000 men who did not flee were killed by the Nigerian army. In one widely reported case, three hundred worshippers were dragged out from an Onitsha Church and were executed before a firing squad. The women were forced to become comfort women for the soldiers.

As war refugees, we lived in palm-frond shelters and abandoned school buildings. We were rocked by Soviet made combat planes that were piloted by Egyptians and East Germans. We spent long hours hunkering inside bomb shelters.

 **Estado:** You are famous and the whole world refers to you as the Bill Gates of Africa. Do you agree with it?

 **Emeagwali:** Africans were offended when President Bill Clinton described me as the “Bill Gates of Africa.” They argued “Bill Gates is the Philip Emeagwali of America.”

Bill Gates and I are information technologists. Bill Gates is an entrepreneur. I am a computer scientist. I am an explorer of knowledge and ideas. I create the knowledge that makes it possible to have computers and the Internet. Bill Gates commercializes and profits from the ideas of people like me.

 **Estado:** In few words, what do you attribute your success to?

 **Emeagwali:** I work very hard and believe in the saying “early to bed and early to rise makes a man healthy, wealthy, and wise.” I always tell myself that if at first I don't succeed that I should try again.

 **Estado:** About your famous computer, how did you think of it?

 **Emeagwali:** The first computer was invented 2,000 years ago in China. It is called an "abacus." In fact, the word "computer" was coined 600 years ago. Therefore, our modern computer is the product of a succession of inventions.

Each generation reinvents the computer and I am one of the people that reinvented computing for our generation. I was the first computer scientist to demonstrate that a computer with several brains is faster than one with only one brain.

If two heads are better than one then 65,000 heads will be 65,000 times better, I argued. Because a problem is made smaller when it is shared I programmed my computer to use thousands of brains, instead of one.

In 1988, I used 65,000 processors to perform the world's fastest computation of 3.1 billion calculations per second. My breakthrough was recognized and rewarded with the 1989 Gordon Bell Prize, considered the Nobel Prize of the computing field. Later, President Bill Clinton expressed his admiration for my breakthrough in a televised speech.

My 65000-processor breakthrough inspired the reinvention of the computer and is now incorporated in designing both personal computers and supercomputers. The most powerful personal computers manufactured by Apple Computers now use multiple processors to achieve 3.1 billion calculations per second. The fastest supercomputer manufactured by IBM now use thousands of processors.

 **Estado:** What are your favorite websites?

 **Emeagwali:** I love to read foreign newspapers. It makes me feel like I visited a country. The problem is that I can only read two languages and this makes it difficult for me to read Web pages written in Portuguese, French and Spanish. I visited www.estadao.com.br but

could not understand what is published there.



Estado: How do you use the Internet? How long have you been online?



Emeagwali: I have been online for 27 years. I am a computational scientist and the Internet was created to enable researchers in my field to access remote supercomputers.

From 1974 to 1989, I used the Internet to access remote computers and supercomputers. I used it to figure out how to discover and recover petroleum from oil fields.

Presently, I like to use the Internet to talk directly to people in other countries. Now that many Brazilians have access to the Internet, I receive email from Brazil and look forward to visiting your beautiful country.



Estado: How would you evaluate the current state of computer technology as it relates to African-American culture. Are we embracing the technology or hiding from it?



Emeagwali: (Unanswered)



Estado: Many computer scientist are called “Father of the Internet.” Are you one of them? What do you think about this matter?



Emeagwali: The reason the media calls me “A Father of the Internet” is that I made my contributions over the past 27 years. For example, the book HISTORY OF THE INTERNET credited me as the first person to fully harness the power of the Internet when I used it to access 65,000 processors and perform the world’s fastest computation. The authors also praised me for inventing the first INTERNational NETWORK.

It is important that we remember that the Internet is the product of a succession of inventions. Therefore, the Internet has many fathers, mothers, uncles and aunts.

The difference between I and the other “Fathers of the Internet” is that they are white Americans and I am a black African. The United States government spent billions of dollars to purchase computer and Internet research equipments. Due to employment discrimination, only white

scientists could work at government funded research projects. As a result, the other “Fathers of the Internet” were paid a good salary for their contributions.

Employment discrimination meant that I was forced to work alone and even fund my own research. I worked without pay while white scientists were paid six-figure salaries and some of them eventually became dot com millionaires. Employers who were impressed with my qualifications and wanted to hire me always changed their minds when they saw at the interview and were surprised that I am black. The struggle was harder for me because I was an African working in America. My path was strewn with thorns while theirs was strewn with roses. I began my journey from an African civil war refugee camp and Bill Gates began his from the home of his affluent family. The destination may be the same but I walked the farthest and climbed the highest mountains.

Their work was driven by their paycheck and mine was driven by a sense of higher purpose. I was responding to an inner voice that reminds me that my life is God's gift to me and that my invention is my gift to God.



Estado: What have you discovered to be the biggest benefits that the Internet brought to human being?



Emeagwali: Thirty years ago, the only purpose and benefit of the Internet was it allowed scientists to access supercomputers.

Today, the biggest benefit of the Internet is to send e-mail. However, it is widely used for socializing: chatting, instant messaging. Students prefer Internet, over books, as an information source for their homework assignments. Many use the Internet to play and download games and music. Others love to surf for fun.



Estado: In the future, what will be the biggest benefits that the Internet will bring to humanity?



Emeagwali: In the future, the Internet will be obsolete. It will be replaced with what I call a SuperBrain, an electronic super-being that will grant some of us eternal life.



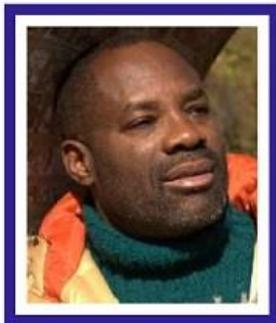
Estado: What negative event changed your life in a positive way?

 **Emeagwali:** After mailing out 1,000 resumes and several unsuccessful job interviews, I learned one important lesson that they don't teach a black student in school: a white employers will always hired a lesser qualified white applicant and rationalize to themselves that the black applicant is not qualified.

By the mid-1980s, I had an impressive resume that included three graduate degrees and some working experience. However, several employers who practically offered jobs by telephone changed their minds after the interview. What I found most discouraging was those employers offered the same jobs that I was denied to a white male fresh out of their undergraduate schools.

Also in 1986, I had three graduate degrees and was employed as a civil engineer by the United States Bureau of Reclamation in Wyoming and paid \$23,000 a year. A white engineer with similar qualifications will have been paid three times what I was earning. (In other words, I was paying an "invincible black tax" of \$46,000 on a \$69,000 job.) My supervisor, a white male, had only a high school education and I had to train him on how to use computers to make engineering calculations. Discouraged, I resigned after I completed my mandatory one-year service.

I also became disenchanted about civil engineering and engineers and decide to become a computer scientist that solves difficult mathematical problems within the field of engineering. In this instance, a negative event forced me to change careers, make a lemonade out of lemons and, subsequently, become "a famous computer scientist" instead of a civil engineer that operates dams and hydroelectric powerplants in Wyoming.



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