

Nigeria's Technology Challenges

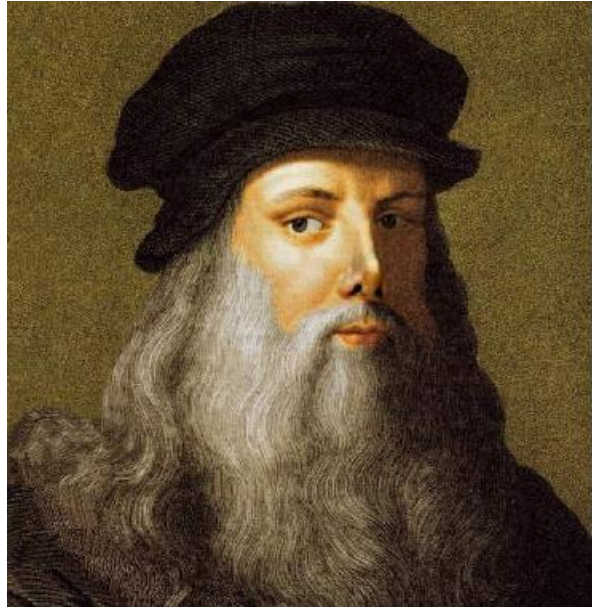
THE



ECONOMY

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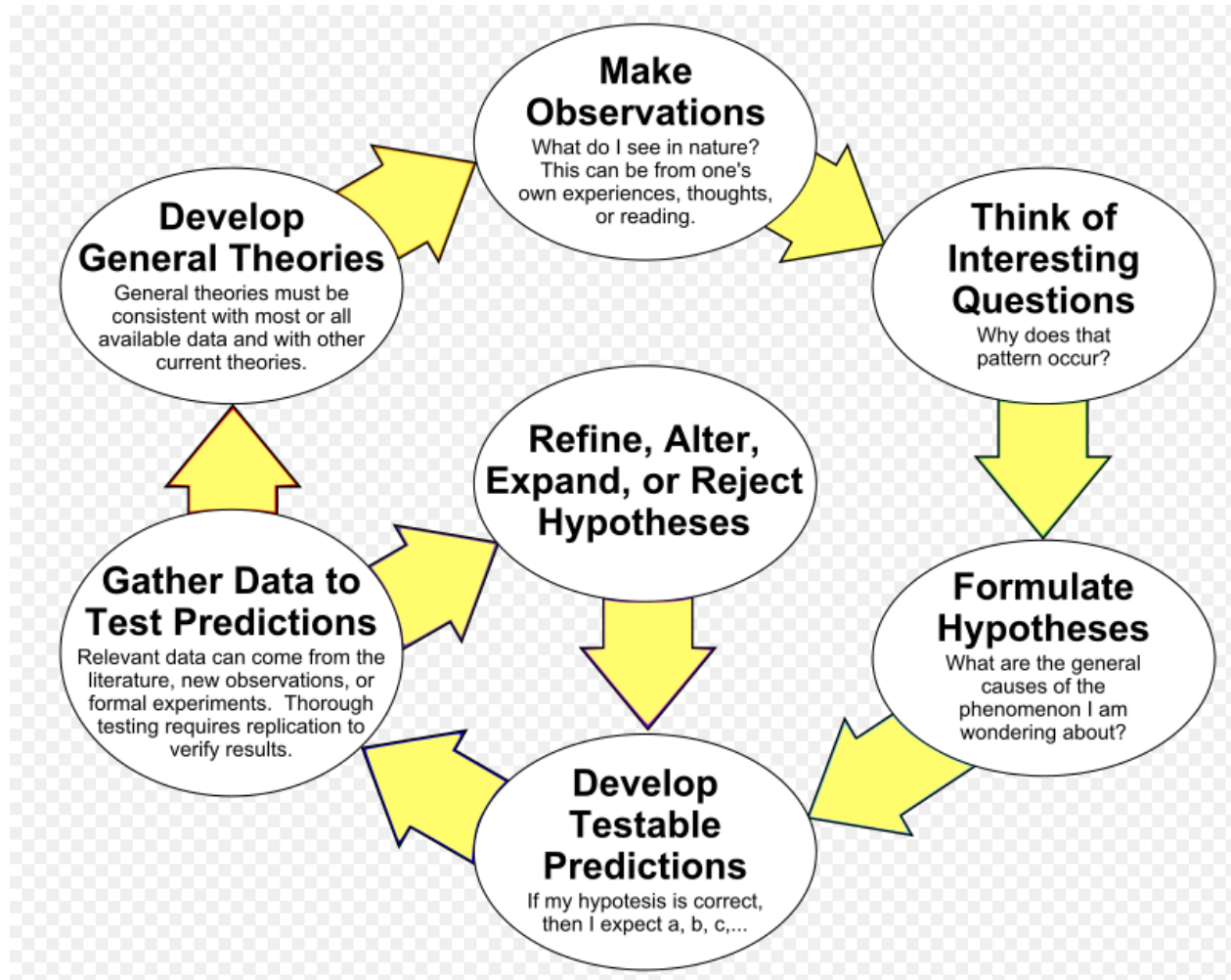
Science = Captain
PRACTICE = the Soldiers



Leonardo Da Vinci (1452-1519)

THE SCIENTIFIC METHOD

- Formulation of a question Hypothesis, Prediction, Testing, Analysis –Wikipedia
- It is essentially Data and Theory
- the scientific method is the preeminent orchestrator of Technology



DIGITAL WORLD 1.0

- In the beginning, Computers were human beings
- Katherine Goble became a computer during the battle for Space supremacy in the early 1960's (100 this year; Hidden Figures)
- The huge digital electronic machines reduced in size to portable machines, which became the gadgets we can put in our pockets
- Indispensable tools for business and living today
- They are everywhere: Bank Machines, phones, diagnostic tools, vehicle parts, etc



DIGITAL WORLD, 2.0

- A major paradigm change is underway. Let's call it DW 2.0
- Here, data itself, is the resource: The new oil; Digital companies are the new dominant global companies
- Data is the new Oil! And, just as the old oil, there are cartels, dominant players, upstream issues, refining, and the inevitable downstream! - Economist (May 2017).

DIGITAL POWERHOUSES



THE OLD AND THE NEW

Companies	Oil Company	Digital Company
Name	Exxon, Shell, Chevron, BP, Elf	Amazon, Apple, Google, Facebook, Microsoft
Upstream (Exploration)	Geological Survey, Trial Wells, Oil Blocks, Licensing, etc	Digital Espionage “gifts”: Email Accounts, Search Engine, Depositories and Storage Spaces, Social Connections, Product Searches
Processing	Transportation, Refining, Stocking	Data Mining Analytics: Machine Learning, Natural Languages Processing, etc
Downstream (Sales)	Petrol Stations, Bulk Sales, Spot Markets Crude	Advertisers, Online Shopping, Logistics

WHAT IS TECHNOLOGY?

- Technology = the distinctive mark of the human species
 - It is the means by which we (humans) have successfully dominated our environment
 - It is not the same as Science or Engineering. Technology is as old as man
- No matter how “primitive” or remote, the human is always at the top of the food chain even in the menacing presence of apparently more able animals that may seem naturally endowed with the means to turn the tables.

EPOCHS AND ERAS

- The history of the world is a tribute to technology:
 - We classify the eras into the Ice, Stone, Bronze and Iron Ages
Add the “Industrial Revolution” and “Information Age”
Of great importance: the prevailing technology of any particular period.
 - The technological paradigm of each era = the instruments made

WINNERS AND LOSERS

- The winners understand the metaphor of the age, apply it to advantage; reap great benefits
- The losers are the bystanders who look on while these technological advances and changes are taking place
- Europeans ruled: 18th to 20th Centuries
- Earlier and greater civilizations: Mongols to Ming or Moors
- Europe dominated by mastery over the oceans, etc is it a surprise that Africans were (are?) their slaves?

THE EUROPEANS TOLD US SO

- Africa interaction with the West: during the Industrial revolution that followed the “Age of exploration”.
- Our Benin Bronze is dated to the 13th century;
 - Our metallurgists have been mixing copper with tin for that long!
 - How did we know?
 - The Europeans told us so!
- Mastery of the oceans, Fire arms, Governmental sophistication

IMPORTANT TIMELINES

- 1760 -1830: Industrial Revolution created hunger for fodders for Europeans industry: Oil Palm, Timber, etc
- 1830: Lardner in Oyo
Advancing from coastal trading, looking inwards for the Niger and whatever else they could get.
- 1897: Military Action against Overami of Benin.

RESPONSES

- Our technologies: metallurgy, distillery, dyeing, sculpture, etc.
 - Lacked data, experimentation and the scientific method
 - Inaccurate transmission; Lack of writing = no spatial and temporal refinements to aid our achievements
- Largely worthless toy of the “Oyinbo” was big in our eyes
- Paid for by enslavement, removal of vital products in unfair exchanges, one sided treaties

20TH CENTURY

- More than half the 20th Century: Colonialism
 - Internal Combustion Engine took over from the horse drawn carriage
 - Wright Brothers and Air Travel
 - Warring turns Celestial (Two major wars)
 - Television Age
 - Space Race

RESPONDING APPROPRIATELY

- Should we be happy or sad that the world is going digital?
- The infrastructural bases for a digital economy?
Do we have them? Can we acquire them in a short time?
Are we moving towards or away from readiness for the new paradigm?
- Are we likely to lose badly? As we did at the Industrial Age?
Can we be enslaved again? Are we already enslaved?

DIGITAL WORLD, 2.0

- As we grapple with the questions posed earlier, consider, as a people: challenges we must face:
 - Political:
 - Infrastructural
 - Educational
 - Cultural

POLITICAL CHALLENGES

- At the right places at the wrong times
- Under the yoke of colonialism, during the development of modern transportation: Internal Combustion Engine and the massification of air travel, we were under colonization.
 - They taught us to produce what they needed – “Cash crops” mentality
 - They “protected” us from enemies that would take us from them – their French brothers
 - Developed transportation to move raw materials away to the coast and beyond. The black-white that replaced them continued. Boyz Quarters

POLITICAL CHALLENGES CONTD

- DW 1.0 Intensified late 60's to the 80's. Where were we?
- Swimming in the excessive oil boom, ruled by boys in their early 30's
- While others were drawing the blueprint of the next global paradigm (e.g. Steve Jobs, Bill Gates, etc.),
- General Gowon boasted that “Money is not Nigeria's problem, but how to spend it!”
 - In a country that had no serious mass transportation system, no sewage in large cities, illiterate population!

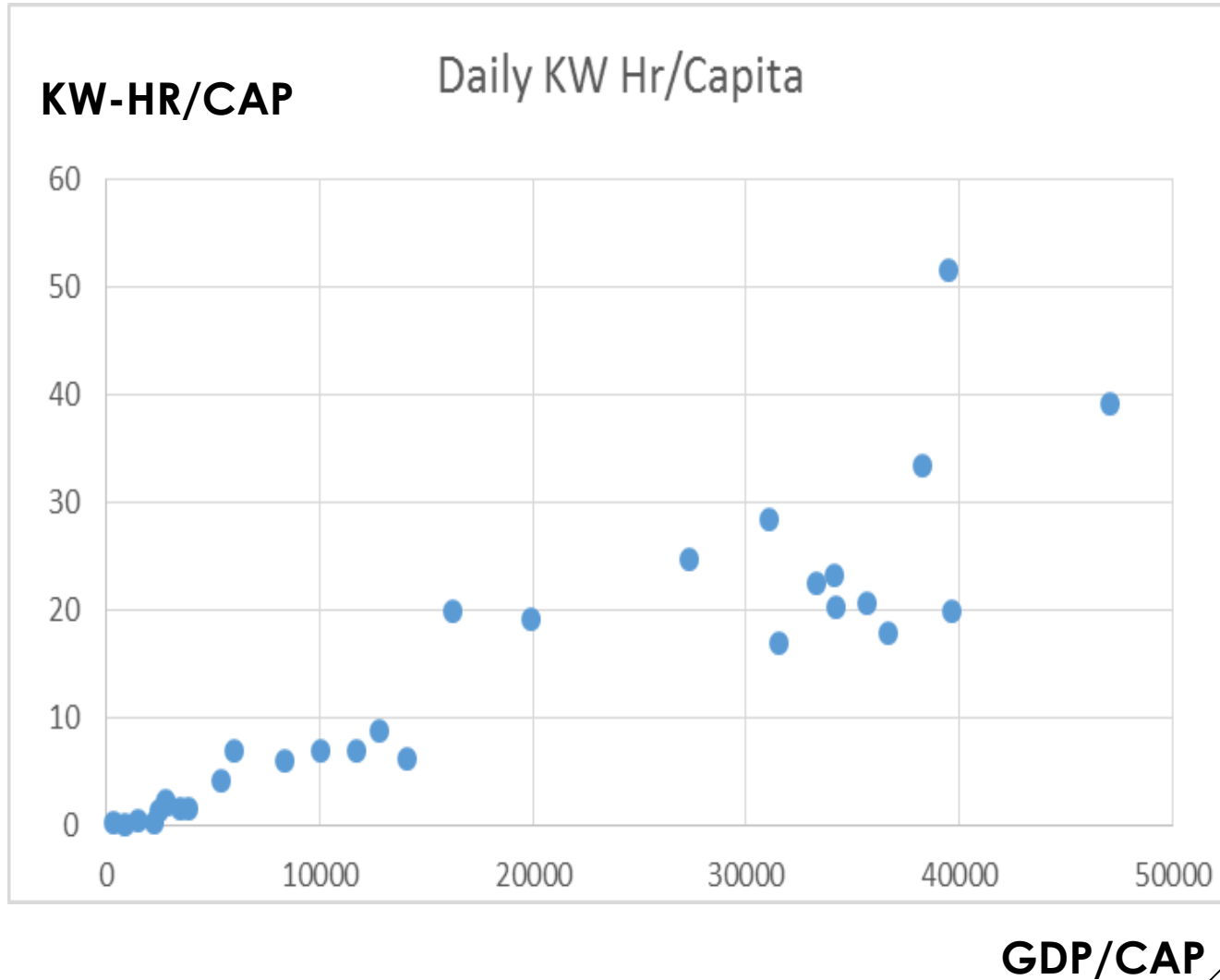
INFRASTRUCTURAL PROBLEMS

- For all their duplicity and hypocrisy, the colonialists contributed more between 1900-1960 to our infrastructural development than our brothers that succeeded them!
Our best efforts in growing might well have been in the first six years of independence!
 - Rail? Roads? Aviation? Development of GRAs,
 - Electricity?
- They were experts in making themselves comfortable and exceeded expectations in moving out the loot!

ELECTRICITY

- Our failure to provide potable power for the populace is one of two **major crimes** most succeeding governments of Nigeria commit against their peoples.
- Nigeria = South Korea in early 1970's in electricity generation.
We regressed in installed capacity;
they moved ten-fold!
- This has implications for economic development as the next slide shows!

ELECTRICITY



RAILWAYS

- 1964: Nigeria moved 11,288,000 people by rail (~ ¼ of the population)
 - 1975: Jebba disaster - more than 40 Cars destroyed by a single trailer.
 - By 2003, total passenger traffic = 1,600,000.
 - The figures for rail freight is even more depressing! (Wikipedia)
- Minister of transport = “Rail is too sophisticated for Nigerian Engineers”
 - An old railway worker: the Kuru-Maiduguri was partly constructed in (1962-64) by Nigerian owned company that employed Nigerian workers; Opened up opportunities aboard.

DIGITAL WORLD, 2.0

- We are a data-shy nation: Outsources its data responsibilities!
 - Economic data: World Bank; Meteorological data: Internet satellite reports; Local emergency: Watch CNN: etc
- “theory” has a bad name
- These make us, an unscientific people
 - Major, far-reaching decisions that affect people’s lives are taken without thorough, objective analysis.
Everything is disputable, and disputed
- O, we like to go to school and send our children.

ACT FIRST, THINK LATER

- 1974: Construction boom = shortage of Cement = Massive importation binge.
- 1975: Cement Armada Arrived and the wharves could not accommodate the ships = High demurrage of incalculable proportions. Cost nearly \$2 billion dollars.
- 1976: Massive construction of ports to accommodate large number of ships
- 1977: Massive overcapacity in unused port facilities.
- Babangida and massive party secretariats; Babangida and free cars to the military. General Amao and Military boats.

DIGITAL WORLD, 2.0

- The Same Chemistry = Different science
- Notes on Brandy: James F. Guymon, University of California, Davis, Calif 95616
- Wines for brandy distillation = fermentation at lowest temperatures and distillation as soon as fermentation is complete
- In California wines are distilled into brandy by eliminating aldehydes
- Result: Akpeteshi 200.00, Brandy: 40,000.00

SELF REGARDING VS WORLD REGARDING

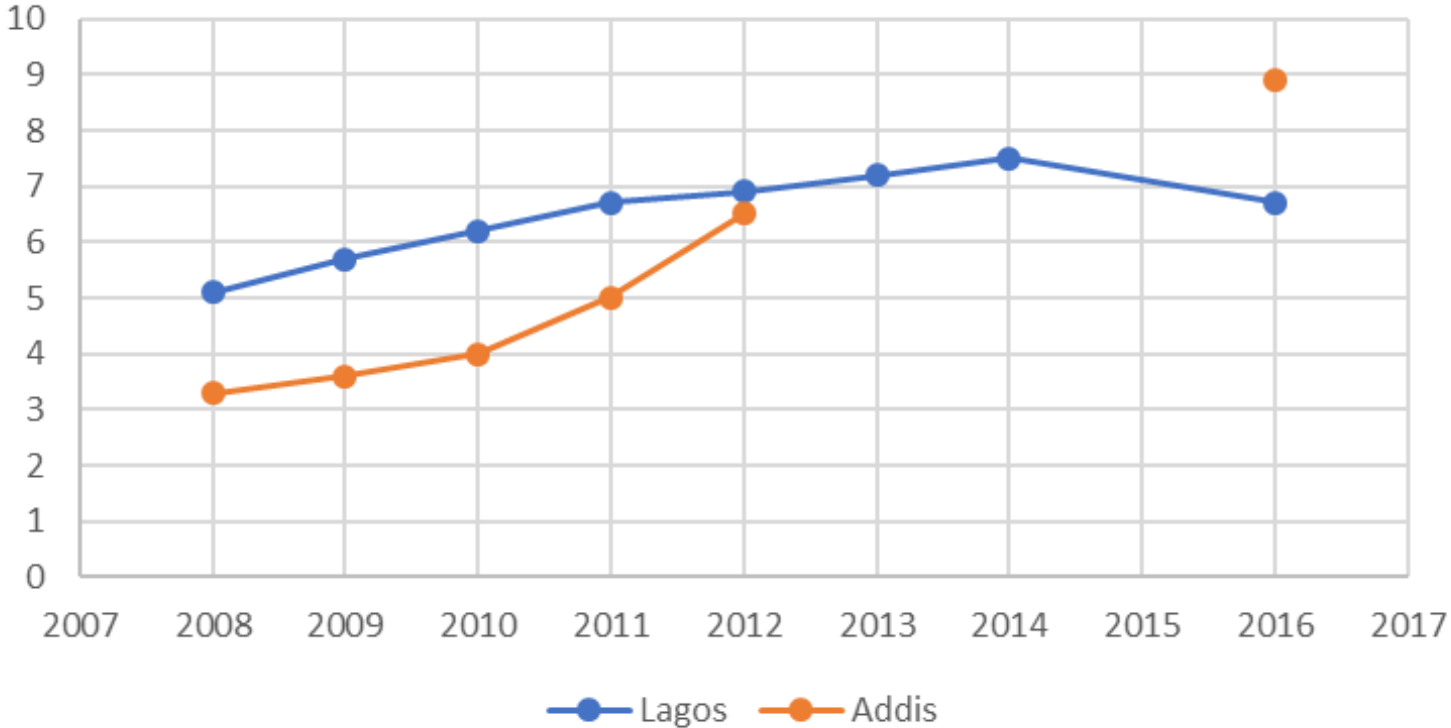
- So far = issues that challenge us all as a nation and **our** place in the world
- Now, into specifics. Remember, the “Oyinbos” knew about the world out there.
- You must be world regarding

“How is your business doing in the world”

SPECIFIC CASES

- In the context of the theory of the data driven economy world, we shall now look at specific issues that relate to the areas of business:
 - Aviation
 - Real Estate
 - Construction
 - Hospitality

Lagos vs Addis Airports



LAGOS VS ADDIS ABABA

- Lagos is flat on passenger traffic
- Addis grows yearly
- Yet, look at its position in Africa.
- Lagos has declined to 7th position after rising to 5th;
- Addis has grown steadily to 4th place in Africa.
- This cannot be glossed over by “economy is bad”.
- A more scientific explanation might be that they are paying more attention to their airlines and turning their country to a major hub
- What are we really doing?

AVIATION EXPERIENCE

- Compare Lagos vs. Edmonton: 1980, 2013.
- Airport serving a city of 1 million
- Lagos to New York 1980, 2015 by Nigerian based airline
- Nigerian operators are satisfied to be patronized by Nigerians.
- Offer services that only Nigerians will accept

- Ethiopian Airlines vs. the world
 - The difference is clear
 - Has nothing to do with economy downturn

- Aviation requires healthy airlines. Nigerians are too poor to purchase airplanes.
- Require massive intervention
- Aviation Minister and her jeeps

REAL ESTATE

- An important crime against Nigerians:
 - land documentation = a very profitable racket for individuals; Nation loses!
- Businesses in Real Estate –are speaking to a small number of lucky Nigerians. Not for ordinary people
- A salaried Nigerian for more than forty. Yet, the Real Estate ads I see are not addressed to me.

CONSEQUENCES OF THE RACKET

- Nigerians are not credit worthy, pauperized.
 - Home ownership is the most expensive purchase in the lifetime of most people in the world.
- Mortgage Finance is a stable financial system in any progressive society.
- Nigerians are affected by the artificial pricing of land by tax-free speculation.
 - Shomolu example: property value does little to benefit renters.
 - A different scenario: if individual fortune were to be tied to the market value of the houses on your street.
 - *Next slide: a water supply repair work

WATER SUPPLY REPAIR WORK AT ABULE-OJA, NEAR UNILAG GATE



MASSIFICATION OF REAL ESTATE

- Want to grow your real estate business? **Massify**
 - Without Massification, you will be chasing 400,000 when you might have been chasing 120 million!
 - Telephone analogy
- Ministry of Home Ownership
 - **Mandate: Create 200,000 new home owners each year**
 - Use all the machinery of government to punish speculators and encourage first time home ownership – especially newly married young people.
 - Increase the percentage of home owners each year

REQUIRED DATA

- To achieve this, we will need to have accurate GIS data on the distribution of land in the state
- Ownership and development state
- Register of home owners, living and dead
- Valuation of homes for taxation purposes
- Service charges: electricity, garbage and the possibility of using home values as development tools for the neighborhood.

HOSPITALITY BUSINESS

- Jebba, Nov 30, 2017: What to do when stranded in a strange town. What are the options?
- For more than 100 years, foreign missionary organizations have been solving this: Pastoral Centers, Youth Camps; etc. all have simple rooms for travelling ministers with proper accreditation and references.
- What does it take to build a business model around that idea?
- That is hospitality massified!

INTERNATIONAL TOURISM

- Nigeria wants rich foreigners to occupy hotels and resorts we create.
- How about Nigerian clients?
- What is the research and data on their preferences?
- What will make them come to these facilities?

WEF 2018

- The World Economic Forum (2018): Travel and Tourism Competitiveness Report
- An analyses the state of the travel and tourism sectors in 136 countries around the globe.
- Nigeria = one of the 20 most dangerous countries for tourists in the world.
- They cite Boko Haram and the Islamic State in West Africa.
- They forgot the Fulani Herdsmen and the militia countermeasures of some state governments.
- It lowers the glass ceiling for the Hospitality Business
<http://www.afr.com/lifestyle/travel/world/the-20-most-dangerous-countries-in-the-world-for-tourists-20170608-gwnsf>

MODELS OF TECHNOLOGY TRANSFER

Technology	Source	Destination	Quest	Success	Comments
Automobile	USA	Japan	1914	1960-70	<ol style="list-style-type: none"> 1. American Dominance & War 1914-1945 2. War Efforts. Automation & Modernization = World recognition, World dominance
MagLev Rail	Germany	China	2001	2004	<ol style="list-style-type: none"> 1. Negotiation for localization of Civil Works, 50% project value. 2. No turn key 3. Record time construction and technology 4. Mastery as a result
Cars	Suzuki	Maruti	1949	1993	<ol style="list-style-type: none"> 1. Failed closed-door policy of successive governments till 1983. 2. Created sense of Nationalism: we consume what we make 3. Bhaskarudu: One man's incompetent is another man's hero
ICT	USA	India	1980	2000	<ol style="list-style-type: none"> 1. Oversupply of university graduates 2. Outsourcing due to low cost of intellectual labor 3. Repatriation of Foreign exchange and know-how by diaspora 4. New tech giant
Mobile Community	Europe	Nigeria	1992	2015	<ol style="list-style-type: none"> 1. National players becoming technologically competitive
Electricity	Europe	Nigeria	1940	???	<ol style="list-style-type: none"> 1. Moving in circles

- ▶ Global view – keep proper perspective
- ▶ Data Collection for Quantitative Thinking
- ▶ Explore Business Models that Massify
- ▶ Urge governments to stop criminal activities on its citizens: Land documentation rackets, poor energy supply, outsourcing data responsibilities, depauperize by effective mortgage

CONCLUSION

► Omolola, Reti & Tunde

CREDITS

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42

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