

“LEADERSHIP, FOR TRANSFORMING PUBLIC INSTITUTIONS IN AFRICA”

Role of Technology in Enhancing Accountability and Effectiveness in Public Institutions – Dr. Faisal H. Issa, Mzumbe University

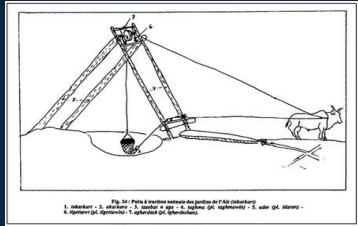
Presented at AAPAM

Capacity Development Seminar - Mombasa

6th - 8th Sept.2022

- Early Technological development
- 20th and 21st centuries' Inventions
- The most important inventions for Africa and the world?
- The magic of information technology and ability to catch up with others
- Continental framework for Technological development
- Challenges and the future of IT development in Africa
- ICT in the public service of Tanzania
- Conclusion

TECHNOLOGY - EARLY



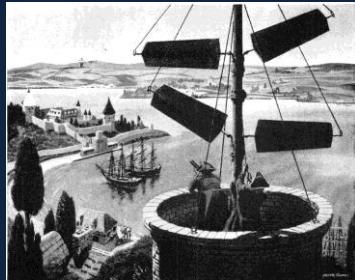
Irrigation system
Egypt



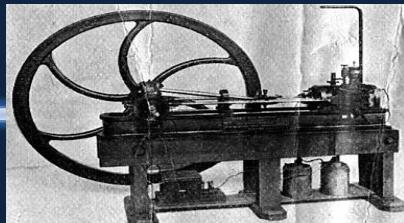
Stone weapon-



Stone tool Kenya



Semaphore 18th
Century France



Steam Engine



Early Chinese gun



Weaving loom



Catapult



Printing machine

TIME MAGAZINE'S 20 MOST INFLUENTIAL INVENTIONS OF THE 20TH CENTURY

1. Automobile
2. Radio
3. Television
4. Transistor
5. Laser
6. Electric refrigeration
7. Personal computer
8. Wireless technology
9. Manned spaceflight
10. Airplane
11. Radar
12. Magnetic tape
13. Plastics
14. Air conditioning
15. Global networks
16. Atomic bomb
17. Artificial intelligence
18. Fiber optics
19. Xerography
20. Internet

GREATEST ENGINEERING ACHIEVEMENTS OF THE TWENTIETH CENTURY

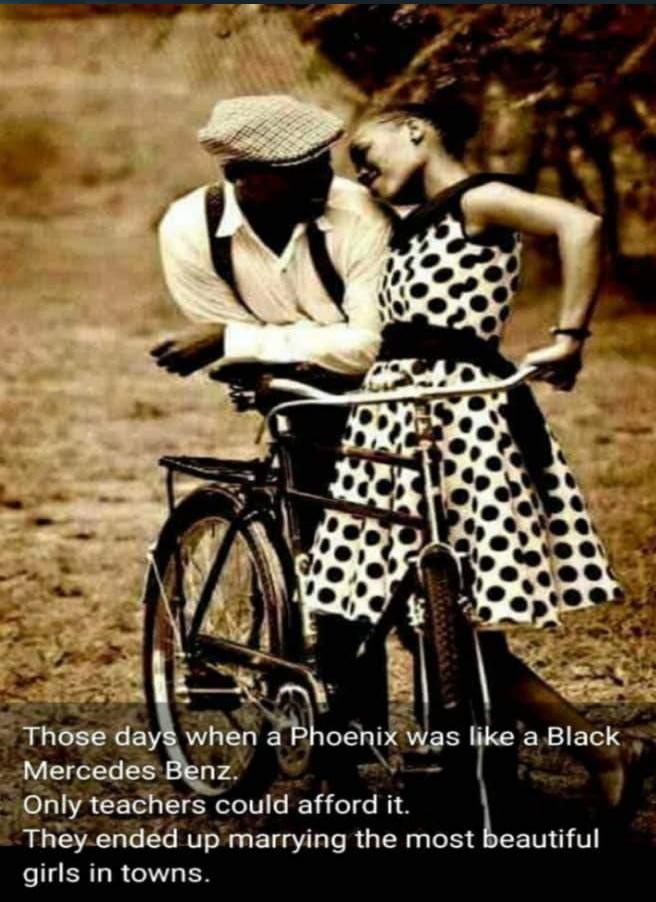
- Electrification
- Automobile
- Airplane
- Water Supply and Distribution
- Electronics
- Radio and Television
- Agricultural
- Mechanization
- Computers
- Telephone
- Air Conditioning and Refrigeration
- Highways
- Spacecraft
- Internet
- Imaging (microscopes, telescopes, etc.)
- Household Appliances
- Health Technologies
- Petroleum and Petrochemical
- Technologies
- Laser and Fiber optics
- Nuclear Technologies
- High-Performance Materials (steel)

21ST CENTURY TECHNOLOGIES – GREATEST, YET?

Digital	Medicinal	Physical	Energy and environment
<ul style="list-style-type: none">• Mobile operating systems• Online streaming• Block chain• Virtual reality and Augmented reality• Tokenization• Digital assistance• Etc.	<ul style="list-style-type: none">• Capsule endoscopy• Robot Heart• Gene editing• Retinal implants• Artificial pancreas• Robotic exoskeletons• Etc.	<ul style="list-style-type: none">• 3D Printing• Small satellites• Touch screen glass• Multi use rockets• Etc.	<ul style="list-style-type: none">• High density battery packs• Clean energy systems• Electric vehicles• Smart grids• Etc.

THE MOST IMPORTANT INVENTIONS?





Those days when a Phoenix was like a Black Mercedes Benz.
Only teachers could afford it.
They ended up marrying the most beautiful girls in towns.

Boda bodas are critical to Kenya's transport system. But they've gone rogue; March 17, 2022 4.09pm
Author Douglas Lucas Kivoi -
Principal Policy Analyst,
Governance Department - KIPPRA





OR THE SMART PHONE AND SOCIAL MEDIA?

THE MAGIC OF INFORMATION TECHNOLOGY – ABILITY TO BE AT PAR WITH OTHERS

Video

[https://www.youtube.com
/watch?v=jq2NCu9La3o](https://www.youtube.com/watch?v=jq2NCu9La3o)

A BURGEONING SOCIAL MEDIA PLATFORM- WHATSAPP COMMUNICATION

- WhatsApp, Face-book, Instagram, twitter, LinkedIn etc.
- WhatsApp is the most popular - It is adopted by both public and private organizations in enabling communication and knowledge transfer,
- WhatsApp is now also used for commercial purposes following the new launched WhatsApp for business that allow commercial brands to initiate private chat conversations with users through their direct messaging platform (Zarouali et al. (2021)).
- It is the most widely used social media platform in Africa.
- The acceptance of WhatsApp is due to real-time information sharing in terms of mobile messaging, exchanging of contacts and sharing graphic contents (Kariuki, 2017).

WhatsApp Communication and the Code of Ethics in the Public service

Benefits identified in using WhatsApp communication	The elements of code of ethics which it promotes
Facilitating easy, affordable and quick means of communication; immediate feedback; replacing less effective means of communication	Diligence; Pursuit of Excellence in Service; Proper use of official information
Provide forum for same minded people or people with same technical and functional responsibilities	Accountability; Pursuit of Excellence in Service
Assists in information sharing; forum for public notices	Accountability; Integrity; Impartiality; Respect of laws; Proper use of official information.
Elevates engagement	Pursuit of Excellence in Service; Respect of laws; Loyalty; Diligence
Immediate issues can be addressed quickly, e.g., emergency meetings, etc.	Accountability; Diligence; Proper use of official information.

?

21ST CENTURY TECHNOLOGIES PROMISES AND PERILS OF A DYNAMIC FUTURE – OECD AT THE BEGINNING OF THE CENTURY

- The use of computing power will greatly enhance possibilities in production, transportation, energy, commerce, education and health.
- Internet technology provides free and open access to a valuable asset, a common standard.
- Reaping the rewards and reducing the dangers generated by technological advances **depend on a complex interaction** with underlying economic, social and political conditions.
- Economic, social and governmental enabling conditions are important. These include:
 - i)ensuring the accessibility and reliability of information in the knowledge economy,
 - ii) developing the individual capacity to compete, assess risk and learn
 - iii) promoting co-operative pursuits of openness, tolerance, and ability to find creative inspiration in the free sharing of ideas and contrasting perspectives

- AU Commission's Science, Technology and Innovation Strategy for Africa 2024 (**STISA-2024**) places science, technology and innovation at the epicentre of Africa's socio-economic development and growth.
- The strategy is firmly anchored on six distinct priority areas that contribute to the achievement of the AU Vision. The priority areas are: Eradication of Hunger and Achieving Food Security; Prevention and Control of Diseases; Communication (Physical and Intellectual Mobility); Protection of our Space; Live Together- Build the Society; and Wealth Creation
- Its reinforcing pillars: **building and/or upgrading research infrastructures; enhancing professional and technical competencies; promoting entrepreneurship and innovation; and providing an enabling environment for STI development in the African continent**

CHALLENGES – ARE THESE OBSERVATIONS STILL VALID?

- There are significant limitations in infrastructure and human capacity
- Critical physical infrastructure and human capacity do not work synergistically to effectively implement ICTs.
- Where the basic infrastructure exists, various components do not operate synergistically to engender optimal results.

(Edoho, F.M. 2013)

- We want to get computers into everyone's hands. But half the people in the world don't have electricity.
- Over a billion don't have access to clean drinking water.
- Forget the digital divide, they need food, water, clothing, shelter and a chance for education.

(Fuchs and Horak, 2007, p. 28).

ELECTRICITY AS THE MOST IMPORTANT DISCOVERY?

- In East Africa as of 2019 electrification level was 36% with over 140m without access
- In West and Central Africa, only three countries are on track to give every one of their people access to electricity by 2030. At this slow pace, 263 million people in the region will be left without electricity in ten years.
- West Africa has one of the lowest rates of electricity access in the world; only about 42% of the total population, and 8% of rural residents, have access to electricity.

<https://blogs.worldbank.org/energy/putting-africa-path-universal-electricity-access#:~:text=West%20Africa%20has%20one%20of,too%20small%2C%20have%20grave%20consequences>

ICT SYSTEMS IN THE PUBLIC SERVICE -TANZANIA



1. **Govt. Mailing**
2. **Govt. e-Office**
3. **Enterprise Resource Management Suite**
4. **Help Desk Govt. Mobile Platform Citizens Portal**
5. **Govt. ICT Services Portal**
6. **Govt. e-Payment Gateway**
7. BRELA Online Registration
Tanzania Customs Integrated
8. TBS Services Online Application
9. Special Load Permit
10. Customer Chemicals Management
11. Agriculture Trade Management
12. e-Procurement
13. Tanzania Trade
14. Mining portal
15. **TRA Online-Gateway**
16. Marine Services
17. Insurance Portal
18. Tanzania Tourism
19. National Health Portal
20. Rural Energy library
21. TACAIDS Repository
22. EWURA
23. e-immigration Online
24. Public Service Recruitment
25. Universities Information Management
26. TCU Programmes Management
27. Salay slip portal
28. E-permit portal

CRITERIA USED TO DECIDE ON E- SERVICE TO SHARE

-Standards of integrity, verifiability, security and transparency to guarantee accurate and verifiable results

THE E-TRAVEL PERMIT FOR PUBLIC SERVANTS ABROAD

- Leadership as the catalyst for change:
 - Used during late Excellency Magufuli's tenure as Head of State
 - He was termed a bulldozer and a culture change champion
 - He was determined to strengthen central control on resources both human and financial
- Internal capacity existed:
 - There was enough technological competence to develop home grown IT Systems and useful portals
 - There were relevant institutions with the right leadership the eGA (e government Agency), the directorate of information and communication technology in the ministry for the public service
 - Public servants are computer literate
 - The government is a networked government

CONT...

- Right processes and structural configurations
 - A multilevel approval process within government hierarchy
 - Controlled and managed at the highest office
 - The public servants initiate the process through a friendly portal
 - Immediate bosses provide the early approvals, the approvals are uploaded by the public servants requesting permission
 - The CEO or top Boss or designated higher level staff endorses and forwards the request to a respective ministry,
 - The Cabinet Minister endorses the permit and forwards it to the Chief Secretary's Office
 - The top civil servant or his designate depending on the hierarchical position of the person wishing to travel approves the permit.

CONT...

- Inherent characteristics
 - Transparent system that is visible to all concerned
 - Who ever is involved can be held accountable for his actions or in action
 - No one is spared all public servants wishing to travel outside the country are to use the system; there is no alternative
 - The immigration officer can see if the permit is there for your traveling
 - The timelines are clear ; emergency requests are to be submitted to weeks before
 - SMS to follow progress can be received if one indicates a need
 - Through the portal and email you will be informed where your request is and who has done what
 - You can rescind the process yourself any time, or make resubmissions
 - You get e-permission and you can print

SUSTAINBAILITY

- It is a useful system:
 - a management tool for control that has enabled a nationwide control
 - It has strengthened sense of responsibility among approving staff
 - It is in sync with other policies such as promoting a more accountable and responsible government: staff at different levels used to be invited abroad for signing MOU and even contracts and thus come to influence govt. decision making
 - Only useful travels are approved- the multilayered system checks that
 - Control of government expenditure is strengthened: resources for travel have to be stated and source
 - It is cheap and involves no papers of physical movement
 - Can be easily audited
 - It has survived a change of government and it is given the same importance as previous government.

“Accountability and effectiveness in public institutions are the **antecedents and outcomes** of information technology development or technological development generally.”

TO CONCLUDE:

- We can agree that where public institutions are effective they are accountable and they make positive change.
- This positive changes include technological development.
- That is why where corruption is not condoned and people are ‘forced’ to be ethical there have been pursuit of excellence:
- China assemble phones, goes to the moon and the west are doing catching up for the first time.
- The US is struggling to send a vessel to the moon while it did so fifty years ago!
- Developments in formation technology promotes accountability and effectiveness in our public institutions but the context matters: **values, infrastructures such as electricity, education and abilities, and synergy between efforts, etc.**