



# THE *Regulator*

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October - December, 2013

QUARTELY MAGAZINE OF TANZANIA COMMUNICATIONS REGULATORY AUTHORITY

## 10<sup>th</sup> Anniversary TCRA



## Tanzania Captures Best Regulator Award



# MAMLAKA YA MAWASILIANO TANZANIA

## MWONGOZO WA KUWASILISHA MALALAMIKO



**Wasilisha Malalamiko kwa Mtoa Huduma  
(Kampuni ya simu, Posta, Wasafirisha  
vifurushi, Televisheni, Redio, n.k)**

*Endapo hujaridhika*



**Wasilisha Malalamiko kwa  
Mamlaka ya Mawasiliano Tanzania  
(TCRA)**

*Endapo hakuna suluhu katika hatua ya pili*



**Kata Rufaa katika Kamati ya Malalamiko  
ya Mamlaka ya Mawasiliano Tanzania**

*Endapo hujaridhika na maamuzi ya Kamati ya Malalamiko*



**Kata Rufaa katika Baraza la Uamuzi wa Haki  
(Fair Competition Tribunal)**

**Kwa maelezo zaidi wasiliana nasi:**

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# CONTENTS

From the Director Genral's Desk .....	3
East African Countries to harmonise tariffs, charges .....	4
Tanzania Awarded S42 Addressing Standard Recognition Certificate ..	6
TCRA Deploys Experts To Access Digital Migration .....	9
Tanzania emerges "OUT STANDING REGULATOR COUNTRY" .....	10
Experts Access Digital Migration .....	12
Tanzania Receives Another Award; This Time On Internet Domain ..	13
Nguvu Ya Teknolojia Ya Habari Na Mawasiliano .....	15
History of Broadcasting .....	27
Digital Television .....	28
Analogue Transmission Switch Off (ASO) .....	29
Reason for a Successfully Analogue Switch Off .....	30

The Tanzania Communications Regulatory Authority (TCRA) Prof. John S. Nkoma (right) accords welcome to the Hon. Vice President Dr. Mohammed Bilal as the latter arrives to grace the TCRA 10th Anniversary Event in Dar Es Salaam in November 2013. From Second left, Minister for Communication, Science and Technology Prof. Makame M. Mbarawa and the TCRA Acting Board Chairperson.

Mrs Magret Mnyagi.

Cover photo: By Semu Mwakyanjala.

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# From the Director General's Desk

## THE 10TH ANNIVERSARY OF TCRA: A DECADE OF COMMUNICATIONS REVOLUTION IN TANZANIA”

The Tanzania Communications Regulatory Authority (TCRA) is celebrating 10 years of its establishment with remarkable series of achievements and success stories in the transformation of the communication sector in Tanzania.

TCRA was established on 23rd November 2003 as a statutory body responsible for regulating the Postal and Electronic Communications sector including telecommunications and broadcasting and in Tanzania. TCRA was established by the TCRA Act No.12 of 2003 which merged the Tanzania Communications Commission (TCC) and the Tanzania Broadcasting Commission (TBC). As we celebrate the 10th Anniversary of TCRA we have every reason to be proud of our successes and achievements in the last 10 years TCRA has strived to realize its strategic goal:- “To enhance the welfare of Tanzanians through effective and efficient regulatory framework that ensures universal access to communications”. In the last decade, Tanzania has witnessed a tremendous growth in the communications sector. The introduction and adoption of the Converged Licensing Framework (CLF) on 23rd February 2005, was the biggest achievement. The CLF was a catalyst in the development of communication network infrastructure, network services, applications and content (radio and broadcasting).

In the electronic communication we have by Nov 2013 FC-21, NS-16 and AS-92. There has been an exponential growth of subscribers reaching about twenty-million from one before TCRA was established in 2003 to over seven operating companies with about twenty eighty million SIM Cards in the market. Mobile telephony has changed lives of Tanzanians with multiple mobile services such as mobile money transfer, payment of utility bill and many solutions in the use as

well as other services that have eased their lives.

The Postal sector has grown from one Public Operator to over 50 courier service operators, with international and local courier service operators across the country. The introduction of New Addressing and Postal Code is yet another milestone into the success story of TCRA.

There is tremendous growth in the Broadcasting Sector as well. From one radio station at in 1961 to 87 Radio Stations and 26 TV Stations in Nov 2013. Internet service users have increased from about one million in 2005 to about eight million in 2013. The Digital Migration Project currently being implemented by TCRA has marked a complete change in the way broadcasting is used. Broadcasting is much more interactive Broadcasting is now anytime and anywhere and anyhow through a multiple of fixed and mobile devices.

In the last ten years the Authority has won several International Awards for outstanding performance in the regulation of the communication sector. In the past decade several countries come to Tanzania to learn from the achievements and success on regulatory issues, such as CLF, Digital Migration, Post Code System, Numbering and Frequency management.

As we enjoy multiple benefits from the transformed communications sector members of the Tanzania community should expect greater benefits than the ones they enjoy currently.

TCRA absolutely assures the Government and the People of Tanzania that the next ten years the communications sector will be the leading contributor to the National Economy.

**Prof. John S. Nkoma, Director General  
TCRA**

# East African Countries to harmonise tariffs, charges

By Semu Mwakyanjala

Consumers in the East African Region stand to benefit from a harmonized and reduced communication tariff and charges under the East African Communications Organisation (EACO) member states concerted efforts.

Some 300 delegates from Tanzania, Kenya, Uganda, Rwanda and Burundi, who attended the 20th EACO Congress and Exhibition that started on 24th June 2013 and ended on 28th June 2013 in Nairobi worked on agreed terms of reference that would eradicate disjointed hiked communication tariffs like roaming charges that currently affect the peoples and the economies of member states.

The Tanzanian delegation to the EACO Congress was led by the Tanzania Communications Regulatory Authority (TCRA) Director General Prof. John Nkoma. The TCRA delegation to the event comprised of top experts in Postal, Telecommunication, Broadcasting, Human Resource, Legal and ICTs that contributed immensely to the EACO Workshop and Congress. The

EACO member states commended TCRA for including community based organisations in its delegation to the event in Nairobi, like the Tanzania Youth Alliance (TAYOA), UhuruOne, MUX operators, National ICT

back Bone (NICTBB), Tanzania Network Information Centre (tzNIC) and DTBI who exhibited their products and services.

Opening the EACO Workshop and Exhibition at the Kenyatta International Conference Centre (KICC) on 27th June 2013, the Kenyan Cabinet Secretary in the Ministry for Information, Communications and Technology (ICT) Dr Fred Matting's said that harmonization and creating a single ICT regional market was a key factor to ensure low communication charges and would empower people and

enable them to access information. Communication experts, creative and innovative people from Tanzania, Kenya, Uganda, Burundi and Rwanda came together in collaboration with researchers sharing new ideas and experiences that would



Tanzania Best Regulator Country Award

give solutions to increased demand for ICT services among member states. This year's theme for the 20th EACO Congress and Exhibition is "Making Broadband Work for Socio-Economic Growth in Africa". Observers from South Sudan and the Geneva based International Telecommunication Union (ITU) also attended the grand event.

Dr Matiang'i commended Tanzania for spearheading efforts to transform from Analogue to Digital Technology. He appealed to EACO members to speed up their efforts of going digital lest their countries become dumping ground of obsolete analogue technology equipment that were currently dumped out at every corner of the world.

The guest of honour underlined the urgency of fast-tracking the harmonisation of communication services and appropriate application of ICTs in the region to optimise benefits from the sector and stem down criminal acts within countries in the region. "Harmonisation of policies and regulatory frameworks across the region is also

necessary in order to fast-track the creation a single regional ICT market." He said. Speaking during the event, the Director General of Communications Commission of Kenya (CCK) Mr Francis Wangusi said the theme to the exhibition and workshop: 'Making Broadband work for the socio-economic growth in Africa' was designed to resonate with the fast changing speed, size, scale and even scope of the networked world. Mr Wangusi said Broadband communication should be focus of EACO member states, now and in future as the countries move towards fulfilling the developmental visions of respective countries. "Throughout history, Africa has lagged behind in many developmental spheres. This should never be the case anymore. ICTs present to us a unique opportunity to leap and catch up with the best anywhere. I am glad he Governments in the region have acknowledged this and have put in place strategies to make the region fully connected to high speed ne-work." Said the CCK DG.



TCRA Director, Consumer and industry Affairs Director Dr. Raynold Mfungahema (left) receives "Best Regulator Country Award" from the Kenyan Permanent Secretary for communication.

# TANZANIA AWARDED S42 ADDRESSING STANDARD RECOGNITION CERTIFICATE

## 1. INTRODUCTION

On 1st November 2013, the United Republic of Tanzania was awarded by the Universal Postal Union (UPU) a recognition certificate for her contribution to the UPU S42 Addressing

(United Rep.), Belarus, Belgium, China (People's Rep.) and Czech Republic qualified for the award of recognition certificate.

Quality addressing and postcode systems are essential to the socio-economic



*The picture of the S42 Addressing Standard Recognition Certificate*

Standard Template Development. The recognition ceremony was organised during the conference of the Postal Operations Council at the capital city of Switzerland which is the seat of the Universal Postal Union which is a specialized agency of the United Nations (UN) in matters related to postal communications. Besides Tanzania

infrastructure and development of a country. They also form the cornerstone of quality postal services, facilitating business transactions and hence the country's economic growth. Address networks are crucial to businesses' ability to operate. Address networks are infrastructures that facilitate the process of doing business and, consequently, economic development.





*From left representative of Czech Republic, Chairman of the Addressing Group, Mr. Ali Bakheet from Saud Arabia Director General of the UPU, Ambassador Bishar Hussein, Representative of Tanzania Mrs. Rehema Makuburi, Director Postal Affairs TCRA and China representative.*

## 2. S42 INTERNATIONAL

### ADDRESSING STANDARD

The UPU standard provides a kind of dictionary of the possible components of postal addresses, together with examples and constraints on their use in a given country. The S42 international addressing standard consists of:

- a set of postal address components used in worldwide addresses;
- languages for expressing address templates, i.e. formal descriptions of address formatting rules;
- provides country-specific address templates. A country defining its S42 template provides precise information about its address elements and formatting rules;
- creates a library of templates that can be easily incorporated

into computer systems for managing addresses.

During the process of launching of template development, Tanzania contacted the S42 expert group at the Universal Postal Union by submitting a sample data set, which consisted address examples representing all the address formats recommended by the United Republic.

Each address in the sample needed to be mapped into S42 elements reflecting their use in the country. For example, mapping the address lines in different delivery methods and explaining whether is a rural or urban address with indication of thoroughfare type.

On the basis of a mapped sample, the S42 expert group creates a template which is fed into a computer program known as a tester. This program reassembles each address from elements and checks the result against the submitted data. The test of the template is positive when all addresses from the sample have been

assembled correctly.

At the end of the process, the Tanzania delegation to the Addressing Group was involved in checking the following:

- that all addresses in the sample data set are properly formatted;
  - the sample contains a sufficiently complete representation of formats recommended by the United Republic; and
  - the addresses are correctly mapped to S42 elements.
- Following the procedure above, the Tanzania S42 standard was approved in April 2013 and a ceremony was planned for 1st November 2013..

### 3. RECOGNITION CEREMONY

The Certificate of Recognition is granted when a country has achieved the development and maintenance of an agreed or accepted address template. The S42 recognition ceremony is normally designed to raise postal administrations' awareness on the value of S42 and encourage them to join the S42 certification program.

### 4. TANZANIA S42 TEMPLATE

The approved Tanzania S42 template comprising of 6 address types:-

- I. URBAN - Street type (Use of Ward Postcode)
- II. URBAN - Informal Settlements (Use of Ward Postcode)
- III. RURAL with the village setup - Village + Hamlet or Kitongoji (Use of Ward Postcode)
- IV. POSTAL OFFICE DELIVERY (P.O. Box, Private bag, Postrestante) - (Use of Post office

Postcode allocated to the respective post offices)

- V. Combination of P. O. Box and Street type (Use of the Ward Postcode)
- VI. Combination of Street type with Big mailers assigned Postcodes (Use of Government or Big mailers Postcode)

### 5. THE IMPORTANCE OF THE S42 ADDRESSING STANDARD RECOGNITION CERTIFICATE

- Efforts by Tanzania to implement the new addressing and postcode system have produced positive results in the international arena.
- Standards are important prerequisites for effective postal operations and for interconnecting the global network. Tanzania is expected to boost its global connectivity.
- The standards improve the exchange of postal-related information between posts, and promote the compatibility of UPU and international postal initiatives.
- Tanzania has become one of the elite group of countries to attain S42 Addressing standard recognition.
- The address template represents the internally used and publicly promoted address format. The postal sector is expected to capitalize on this strength to promote its domestic business.
- It is a good example to the world for the country that has offered the UPU a Special Ambassador to drive the Addressing the World – an Address for Everyone initiative.

# TCRA DEPLOYS EXPERTS TO ACCESS DIGITAL MIGRATION

The country's Postal, Telecommunication Services Regulator, the Tanzania Communications Regulatory Authority (TCRA) has deployed a total of 27 researchers comprised of 13 ladies and 14 men to access performance levels of the digital broadcasting services.

The researchers are under a team of 10 supervisors who include the TCRA Director of Broadcasting Mr N. Habbi Gunze an overall supervisor, Prof. Nerey Mvungi, Eng. Andrew Kisaka coordinator and Eng. Joel Chacha. TCRA conducted a special training for the researchers at the Mawsiliano Towers in Dar Es Salaam as they were deployed on 1st August 2013.

It is with great pleasure that I am here today to participate in this Opening Ceremony of the Training programme for conducting assessment on Performance of Digital Broadcasting Services. On behalf of the TCRA Director General, let me welcome you all here this morning for this very important training. Again I say Thank you for being here.

**Ladies and Gentleman**  
I would like also to

congratulate all of you for being nominated to participate on this very important exercise of assessing the performance of digital broadcasting services.

## **Ladies and Gentleman.**

As you remember, The Migration from analogue to Digital Television Broadcasting Made an important landmark on 31st December, 2013 where the analogue switch off begun in Dar Es Salaam.

The migration exercise was conducted in phase. The first phase involved Dar Es Salaam, Arusha, Dodoma, Mwanza, Tanga, Mbeya and Moshi. Phase I was completed on 30th April, 2013 where by Analogue transmission sites in Mbeya were switched off.

## **Ladies and Gentleman**

Following the completion of the First Phase of analogue switch off an evaluation committee was formed with the view of assessing the performance of Digital Broadcasting Services to areas where analogue transmissions were switched off.

This is very important exercise as it will guide the Authority towards the Second Phase of analogue switch off which is expected to start in September, 2013.

The aim of this training is to enhance your capabilities towards the assessment exercise. The Authority in collaboration with experts from the University of Dar Es Salaam has prepared a special programme to enable you to efficiently perform the task ahead of you.

It is my hope that you will participate fully in the training where you will be allowed to ask as many questions as possible any the expert will be at your disposal and clarify any issue that you will ask.



# TANZANIA emerges

By: Semu Mwakyanjala

## “OUTSTANDING REGULATOR COUNTRY”

TANZANIA emerged ‘Outstanding country Regulator’ in the East African Region during the grand exhibitions that involved 37 exhibitors during the 20th East African Communications Organisation (EACO) Congress and Exhibition held at the Kenyatta International Conference Centre (KICC) in Nairobi recently.

Tanzania was proven to have played a leading role in conforming to global reforms to the communication sector, like successfully embarking on ‘Migration from Analogue to Digital Broadcasting, the take-off to the Postcode System Project, effectively establishment of the Telecommunication Traffic Monitoring System (TTMS) and promising steps towards Number Portability issues among others.

Judges at the EACO Congress commended Tanzania for putting in place sound communication policy, actively involving and empowering the youth in ICT innovativeness, in-addition to spear-heading reforms in the communication sector. TCRA had taken several community based Tanzanian ICTs organisations that operate at the grass roots level for the EACO Congress and Exhibitions, 2013 under theme: “ Making Broadband work for Socio-economic Growth in Africa” . Tanzania was also commended for freely sharing its innovative ideas and experiences with other EACO member states thus subsequently helping to speed up and up-grade the communication sector in the region.

The designate Kenyan Principal Secretary, Information and Communication Technologies Mr

Joseph Tiampati presented the special award to the Tanzania Communications Regulatory Authority (TCRA) Director, Consumer and Industrial Affairs (DCIA) Dr Raynold Mfungahema who received the award on behalf of the TCRA Director General Prof. John Nkoma during a colourful event held at night on 27th June 2013, at Carnivore grounds in Nairobi. The event was organised and hosted by the Communication Commission of Kenya (CCK).

A total of 300 enthusiastic delegates from Tanzania, Kenya, Uganda, Burundi, Rwanda, South Sudan and observers from the Geneva based International Telecommunication Union (ITU) attended the memorable event that was beamed with magnificent lights and thrilling entertainments of rejuvenating, African cultural dances.

Earlier in day the delegates to the Congress and Exhibitions listened with keen interest as the TCRA DG. Prof Nkoma briefed the Congress on strategies that TCRA had employed and subsequently implemented the digital migration process. He told the delegates that digital migration was not only a complex but also a challenging process. Prof. Nkoma said digital broadcasting switch-over needs special preparations in technological transformations like having enough decoders on the market in the region where the switch is to be affected. The TCRA Chief told the Congress that involved Regulators, Postal Operators, Telecom Operators, Broadcasters, Human Resource, Legal and ICTs experts among others that involvement of political leaders was very key for the success of the process.

“You have to have substantial support

from the top political leaders including Ministers who are very important partners in this global change' said Prof. Nkoma

The TCRA DG said digital migration was also a policy issue and there should be legal reforms.

In Tanzania, is said the digital migration move is backed by The Electronic and Postal Communications Act (EPOCA) of 2010. He said

there is need to hold massive campaigns and public education among members of the community including business communities before effecting changes, saying Tanzania started way back in 2005 and the President of The United Republic of Tanzania His-Excellency Dr JakayaMrishoKikwete launched the Digital Migration Logo in 2010, as part process of the Analogue to Digital Switch-over exercise that was first effected in Dar Es- Salaam on 31st December 2013.

During the exhibition, the Tanzania Youth Alliance (TAYOA) scooped three awards that included the 'Overall Best Stand Winner'-for the 20th EACO Congress Exhibitions 2013, 'Best electronic display stand'-for displaying unique seamless flow of presentation that provided uninterrupted flow of information and TAYOA emerged second runner-up after WIOCC-Kenya for innovative solutions best interpreted the theme by showing how broadband can be used to inform citizenry on various issues affecting them like health, education etc, regardless of their geographical position in Tanzania. the for the 20th EACO Congress Exhibitions 2013.

The EACO Congress also entailed workshop the following topics, Board-



TCRA Officers with Best Regulator Award in Nairobi

band and Economic Growth-Global Trends and Development, Impact of Broadband and Economic Growth, East African Experience on Broad band Deployment-Regulatory Perspective among others.

Opening the 20th EACO Workshop and Exhibition 2013, the Cabinet Secretary in the Ministry of Information, Communications and Technology (ICTs) Dr Fred Matiang'i say ICT was key to building an informed society and bring about sustainable human development. "Today's increasingly digital world has elevated access to information and Communications Technologies (ICTs) to a basic human right. Indeed, access to ICTs is now one of the key determinants of whether individuals have adequate or scarce access to information. Research has established a clear relationship between extreme poverty, ignorance, disease, hunger and poor living standards in Africa to lack of access to information." Said Dr Matiang'i. The Cabinet Minister said the EACO Workshop theme 'Making Broadband work for Socio-Economic Growth in Africa,' was therefore, relevant as it recognises and seeks to harness the immense transformative power of high speed internet in improving the lives of the citizens in the region.



# EXPERTS ACCESS DIGITAL MIGRATION

*OPENING REMARKS BY THE DIRECTOR  
OF BROADCASTING ON THE OCCASION OF  
TRAINING OF RESEARCH ASSISTANTS FOR  
ASSESSMENT OF PERFORMANCE OF DIGITAL  
BROADCASTING SERVICES IN TANZANIA  
01/08/2013*

The country's Postal, Telecommunication Services Regulator the Tanzania Communications Regulatory Authority (TCRA) has deployed a total of 27 researchers comprised of 13 ladies and 14 men to access performance levels of the digital broadcasting services. The researchers

are under a team of 10 supervisors who include Mr N. Habbi Gunze an overall supervisor, Prof. NereyMvungi, Eng. Andrew Kisaka coordinator and Eng. Joel Chacha. TCRA conducted a special training for the researchers at the Mawsiliano Towers in Dar Es Salaam as they were deployed on 1st August 2013.

# TANZANIA RECEIVES ANOTHER AWARD; THIS TIME ON INTERNET DOMAIN NAME REGULATORY

(By Eng. J. M. Kilaba of TCRA)

*At the 47th ICANN Meeting held in Durban, South Africa 14th – 18th July 2013, the Tanzania Network information Centre (tzNIC) was awarded a second Award as best African Domain Name Registry of dotTZ (.TZ). The first Award went to South Africa's Registry of dotZA (.ZACR).*



*The tzNIC Manager Eng. Abibu Ntahigiye receives the Award and Certificate from Ms. Walda Roseman the COO of the Internet Society (ISOC).*

*The tzNIC Manager Eng. Abibu Ntahigiye with Dr. Steve Croker the Board Chairman of ICANN*





*Seated are the Awards Winners*



*The Award*



*The Certificate*

The other Registries who were put in the race included Namibia (.NA), Senegal (.SN), Burundi (.BI), Chad (.TD) and Tunisia (.TN). There were also three Registrars who contested for the Award; they are AFRIREGISTER, KHEWEUL.COM and DIAMATRIXCC. The KHEWEUL.COM won the prize.

*The Tanzanian delegation to the 47th ICANN meeting in a group photo. From left are Mr. Kenneth Wakati and Mr. Frank Goyayi Members of tzNIC Policy Advisory Committee (PAC), Dr. Steve Croker the Board Chairman of ICANN, Eng. Abibu Ntahigiye Manager tzNIC, Eng. James M. Kilaba from TCRA and Ms. Walda Roseman the COO of the ISOC. Not in the photo is Eng. Simon M. Balthazar the Technical Officer of tzNIC.*





# NGUVU YA TEKNOLOJIA YA HABARI NA MAWASILIANO (TEKNOHAMA) KATIKA KURAHISISHA MAENDELEO YA KIJAMII PAMOJA NA KIUCHUMI: ENEO LA UTAFITI TANZANIA.

## Dibaji

Lengo la waraka huu ni kujadili uwezo wa teknolojia ya habari na mawasiliano (TEHAMA) katika kuwezesha maendeleo ya kijamii pamoja na ya kiuchumi nchini Tanzania. Tutaangalia aina mbalimbali za Tehama kama zifwatazo: Zana za aina mbalimbali za tekinolojia ya habari na mawasiliano, vitarakilishi au kompyuta za kisasa, muundo wa serikali mtandao, sera za teknohama, sharia na kanuni mbalimbali, mfumo wa leseni, ongezeko wa soko la watoa huduma, ongezeko la soko la watumiaji wa huduma, ongezeko la miundombinu ya mawasiliano, rasilimali adimu za mawimbi ya utangazaji, rasilimali adimu za namba, kuahama kutoka mfumo wa utangazaji analojia kwenda dijitali katika kurusha matangazo, kutangaza mfumo wa postkodi nchini Tanzania. Tunaenda kuangalia faida mbalimbali zitokanazo na mifumo mbalimbali ya tenohama kama: Serikali mtandao, Elimu- mtandao, Kilimo, Afya- mtandao, Kilimo Mtandao, Biashara mtandao, changamoto zitokanazo na maendeleo ya Teknohama pia zimejadiliwa kiufasaha. Makala inajadili pia njia bora na faida za matumizi ya tehama kwa maendeleo ya kijamii na kiuchumi nchini.

## Utangulizi

Lengo la waraka huu ni kujadili uwezo wa teknolojia ya habari na mawasiliano (TEHAMA) katika kuwezesha maendeleo ya kijamii pamoja na ya kiuchumi nchini Tanzania. Ni bora kutambua kwamba

mdhibiti wa teknolojia ya habari na mawasiliano (TEKNOHAMA) nchini, Mamlaka ya Mawasiliano Tanzania (TCRA) (Kif. 1) kinasema na kuamini kwamba kuna ushahidi wakutosha kwamba matumizi ya TEKNOHAMA yanawezesha wananchi kuishi maisha bora, na hatimae kupata maendeleo ya kijamii na kiuchumi. Kwamfano, katika makala iliyo chapiswa katika chapisho la Kiuchumi, the Economist, imeelezwa kwamba katika simu za mkononi 100 katika nchi inayo endelea, kipato cha mananchi kinaongezeka kwa asilimia 0.8 (Rej. 2, Jarida la Uchumi-Economist 20009).

Mpangilio wa waraka huu ni kama ifuatavyo. Tutaangalia vipengele mbalimbali vya TEKNOHAMA, kama ifwatavyo: vifaa ya TEKNOHAMA, kompyuta bora zakisasa, mfumo wa kitasisi, Sera za TENOHAMA, sheria, kanuni, mfumo wa leseni, ukuaji wa soko – watoa huduma, watumiaji wa huduma, ongezeko la miundombinu, rasilimali adimu za masafa, rasilimali adimu ya namba za mawasiliano, kuhama kutoka analojia kwenda digitali katika utangazaji, na kuanzisha mfumo wa postkodi nchini Tanzania.

Sehemu ya tatu, tunajadili TEKNOHAMA sambamba na ukuaji wake kijamii na kiuchumi kwa pamoja. Sehemu ya 4, tutajikita katika changamoto za maendeleo ya TEKNOHAMA zinazo kinzana na Maendeleo ya TENOHAMA, katika kuelewa changamoto hizi, tutakua katika nafasi nzuri zaidi ya kupambana nazo na kuzipatia ufungumbuzi. Sehemu ya 5, ni hitimisho.

## 1. Maelezo ya jumla ya TEKNOHAMA

### 1.1 Vifaa mbalimbali vya TEKNOHAMA

Katika miaka ya hivi karibuni, kumekuwa na ongezeko kubwa la matumizi ya vifaa (vyombo) mbalimbali vya TEKNOHAMA. Vyombo hivyo vya TEKNOHAMA, redio, televisioni, kompyuta, kompyuta za kiganjani, kamera, na vifaa vingine vya mawasiliano vya kiganjani (baadhi vimeonyeswa katika picha na 1). Maendeleo ya kisayansi na utafiti wa kiufundi katika kipindi cha miaka michache iliyopita vimeleta mafanikio yanayojulikana kama mwingiliano wa teknolojia, ambapo chombo au kifaa kimoja cha mawasiliano kinauwezo wa kufanya kazi mbalimbali za mawasiliano. Matumizi ya vyombo ya TEKNOHAMA, kama simu za mkononi, kwa uhakika vimeboresha maisha ya wananchi, na kuchangia katika maendeleo ya taifa-kijamii na kiuchumi.

### Mwingiliano wa teknolojia

Picha 1: vyombo vya TEKNOHAMA na mwingiliano wa Teknolojia



Chombo cha TEKNOHAMA kama kompyuta kuu (picha 2) ni kompyuta yenye uwezo mkubwa zaidi wa kazi na kasi kubwa zaidi. Nchini Tanzania, kompyuta kuu inapatikana katika Tasisi ya Teknolojia jijini Dar Es Salaam) (Angalia picha 3).

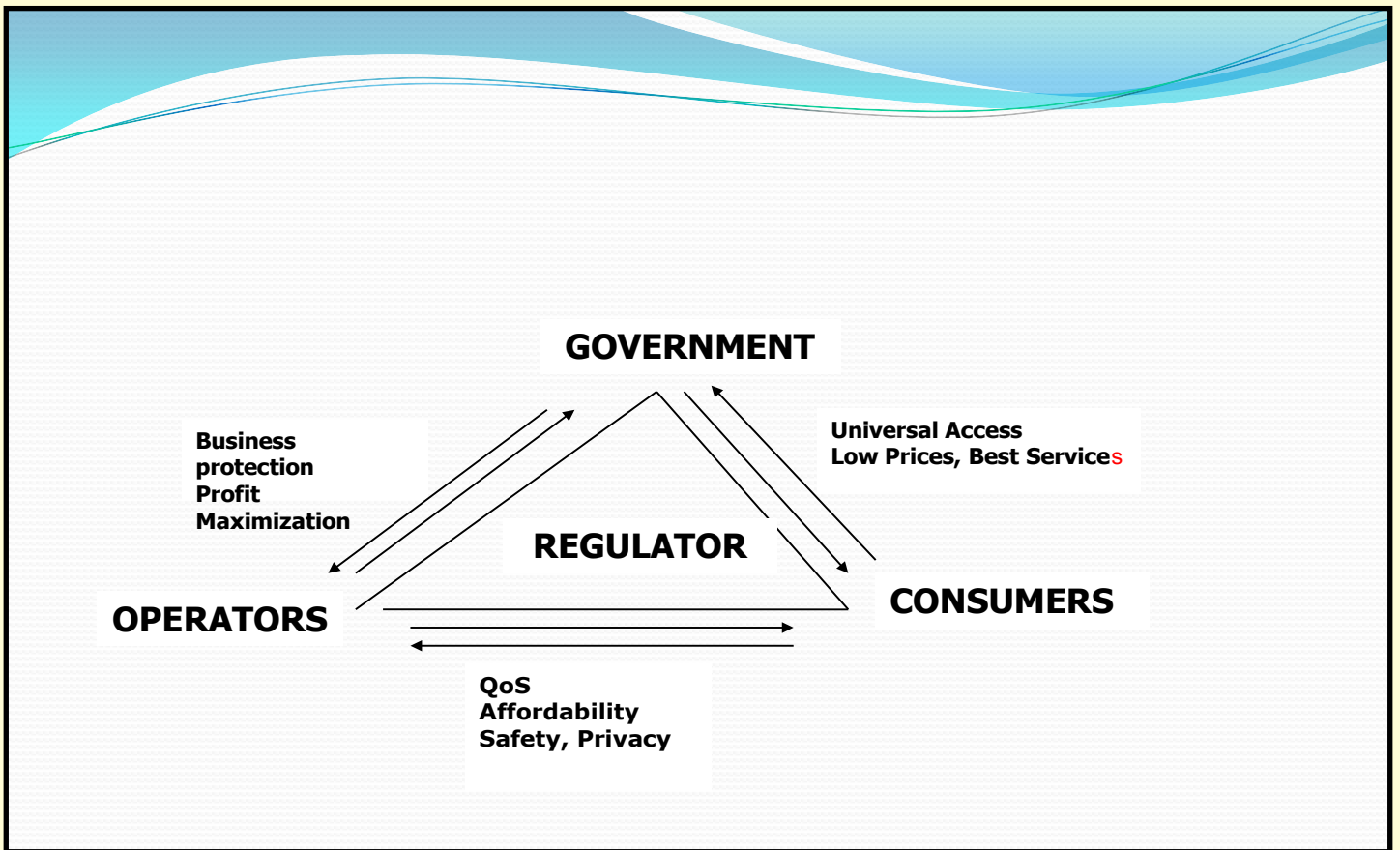


Picha 2: Kompyuta Kuu

## 1.2 Mfumo wa Kitasisi

Swala la TEKNOHAMA ni suala mtambuka, pia niswala la mfumo wa kitasisi, linawezesha utambuzi wamadau mbalimbali ikiwemo serikali, (Wizara ya Mawasiliano, Sayansi na Teknolojia, Watoa huduma au makampuni yanayo toa huduma zamawasiliano, kama Vodacom, Airtel, MIC Tigo, Zantel, TTCL, Sasatel, Benson on Line (BOL) na mengineo (angalia kumb. 3 to 10), Watoa huduma wa Mkonga uliopo chini ya baharí kama, Seacom na EASSY (angalia kumb. 11 na 12), Watumiaji huduma na mdhibiti (Mamlaka ya Mawasiliano Tanzania (TCRA) (angalia kumb. 1). Hii imeonyeswa katika kielelezo cha picha na 3. Wadau mbalimbali wana malengo tofauti na mazingira ya udhibiti yanatakiwa yavutie na kuruhusu uwekezaji, usimamizi wa kanuni, na kulinda maslahi ya watumiaji wa huduma za mawasiliano

Serikali, mdhibiti, watoa huduma, watumiaji wa huduma



Picha 3: Mfumo wa Kitasisi

### 1.3 Sera, Kanuni and Sheria

#### 2.3.1 Sera

Kwa kila sekta kufanyikisha maendeleo bora ya kijamii na kiuchumi, lazima kuwena será nzuri. Serikali ya Jamhuri wa Muungano ya Tanzania, inatekeleza será bora mbalimbali za mawasiliano. Kwa kila sekta kupata maendeleo mazuri ya kijamii na kiuchumi lazima kuwenasera bora zilizo ainishwa vizuri, kwa lengo la kuboresha maendeleo ya mawasiliano Tanzania nzima. Hizi nipamoja na:

- Sera ya Taifa ya Mawasiliano ya simu ya 1997
- Sera ya Taifa ya TEKNOHAMA ya mwaka 2003
- Sera ya Taifa ya Habari na Utangazaji, 2003
- Sera ya Taifa ya Posta 2003

Sera zilizotajwa hapo juu zinaweza kupatikana katika tovuti ya TCRA (angalia kumb.1). Sera ya TEKNOHAMA ipo katika mchachato wa kuboresha kupitia Wizara ya mawasiliano, Sayansi na Teknolojia.

#### 2.3.2 Sheria

Serikali ya Jamhuri ya Muungano wa Tanzania inatekeleza será mbalimbali za sekta ya mawasiliano, ikiwa pamoja na:

- Sheria ya Uwanziswaji wa Mamlaka ya Mawasiliano Tanzania Na 12 ya mwaka 2003
- Sheria ya Uwanziswaji wa Mfuko wa Kuendeleza Huduma za Mawasiliano Vijijini ya mwaka 2006
- Sheria ya Mawasiliano ya Kielektroniki na Posta ya mwaka 2010 (EPOCA) (Baada ya kuboresha Sheria ya Mawasiliano Tanzania Na 18 ya 1993 na Sheria ya Huduma za Utangazaji Tanzania Na 6 ya mwaka 1993).

Sheria hizi zinaweza kupatikana katika tovuti ya Mamlaka ya Mawasiliano Tanzania, TCRA (Angalia Kumb. 1).

#### 2.3.3 Kanuni

Ili kusimamia vizuri sekta ya mawasiliano, ziko kanuni mahsuszi zinazopelekea sekta

ya mawasiliano kusimamiwa vizuri zaidi. Hizi ni pamoja na;

- Kanuni za Ubora wa Huduma Mawasiliano ya Ki-Elektroniki na Posta, 2011
- Kanuni za Mawasiliano ya Ki-Elektroniki na Posta (Mtambo wa Kumbukumbu na Utambuzi wa vyombo vya mawasiliano ya Ki-Elektroniki-CEIR), 2011
- Kanuni za Mawasiliano ya Ki-Elektroniki na a Posta (Mfumo wa utangazaji wa dijitali), 2011
- Kanuni za Mawasiliano ya Ki-Elektroniki na Posta (Masuala ya dharula kwa kompyuta- C E RT) 2011
- Kanuni za Mawasiliano ya Ki-Elektroniki na Posta (Ushindani), 2011
- Kanuni za Mawasiliano ya Ki-Elektroniki na (Ushuru wa foroza, 2011
- Kanuni za Mawasiliano ya Ki-Elektroniki na (Uhamaji na Namba yako, kwenye mitandao), 2011
- Kanuni za Mawasiliano ya Ki-Elektroniki na Posta (Huduma za Posta), 2011
- Kanuni za Mawasiliano ya Ki-Elektroniki na Posta (Mawimbi ya Mawasiliano ya Redio), 2011
- Kanuni za Mawasiliano ya Ki-Elektroniki na Posta (Gharama za Mwingiliano), 2011
- Kanuni za Mawasiliano ya Ki-Elektroniki na Posta (Mahesabu Tenganishi ), 2011
- Kanuni za Ki-Elektroniki na Mawasiliano ya Posta (Kulinda Watumiaji wa Huduma), 2011
- Kanuni za Mawasiliano ya Ki-Elektroniki na Posta (Namba za Ki-Elektroniki na Anuani), 2011
- Kanuni za Mawasiliano ya Ki-Elektroniki na Posta (Postikodi na Anwani za makazi), 2011
- Kanuni za Mawasiliano ya Ki-Elektroniki na (Utoaji wa Leseni ), 2011
- Kanuni za Mawasiliano ya Ki-Elektroniki na Posta (Mawasiliano ya Ki-Elektroniki), 2012 (Zitachapishwa)
- Kanuni za Mawasiliano ya Ki-Elektroniki na Posta (Utangazaji) Kanuni, 2012 (Kusainiwa,

Kanuni hizi zinapatikana kwenye tovuti ya TCRA (Angalia kumb. 1).

## 2.4 Mfumo wa leseni:

Tanzania kwa kupitia kwa mdhibiti wa sekta ya Mawasiliano nchini, TCRA, ni moja ya nchi za mwanzo kabisa barani Africa kusimamia sekta ya Teknolojia ya Habari na Mawasiliano (TEKNOHAMA) kwa kutumia mfumo mpya wa leseni wa mwingiliano wa teknolojia kuanzia mwaka 2005.

### Leseni hizo ni zifwatazo:

- Leseni ya ujenzi wa Miundombinu (Unaruhusu mtoa huduma kugenga miiundombinu ya mawasiliano, kwa mfano mawasiliano yanayo tumia nyaya, yasiyotumia nyaya, ya Satelaiti, na ya mkonga.)
- Leseni ya Kutoa huduma (Leseni hii, inamuruhusu kutoa huduma

mbalimbali kama, huduma za simu za mezani, simu za mkononi, sauti, tarifa, takwimu, n.k.)

- Leseni ya Huduma Matumizi ya Kielektoniki. (huruhusu mtoa huduma kutoa huduma za ziada kama ya mtandao-intaneti, taarifa, kusarisha na kupokea pesa, malipo ya huduma kama za maji, umeme na kuweka pesa banki kwa kutumia mtandao)

- Leseni ya Utangazaji (leseni hii inamuruhusu mtoa huduma kutoa huduma za Utangazaji wa Redio, na Televizieni-kwakutumia nyaya na bila ya kutumia nyaya, za Digitali, Satelaiti, kwa malipo ya TV ya kabla na baada.)

Leseni hizi hazichaguwi “Aina ya Teknolojia” na “Aina ya Huduma” na zimegawanyika katika masoko manne

(Soko la Kimatiafa, Kitaifa, Kimkoa, na soko la Kiwilaya). Leseni ya Utangazaji ina soko la ziada katika ngazi ya jamii.

**Leseni zingine zitolewazo na TCRA ni:**

- Leseni ya Mtoa Huduma za Posta wa Umma
- Leseni ya Kusafirisha Vifurushi na Vipeto
- Leseni ya Matumizi ya Masafa
- Leseni ya Kujenga na Kukarabati
- Leseni la Uingizaji na Usambazaji
- Leseni ya Uthibitisho wa Ubora
- Leseni ya Namba maalum

**2.5 Ukuwaji wa Soko la Watoa Huduma**

Watoa huduma za Teknolojia ya Habari na Mawasiliano (TEKNOHAMA) wameongezeka kwa kiwango kikubwa katika kipindi cha miaka michache iliyopita, tofauti na kipindi kirefu, cha miaka mingi ya Ukiritimba ya 1993, iliyofuatiwa na biashara ya soko huria.

- Leseni za Kujenga Mtandao zimeongezeka kufikia 21 hadi Juni 2012.

- Leseni za Watoa Huduma zimeongezeka hadi kufikia 17 mpaka mwezi Juni 2012.

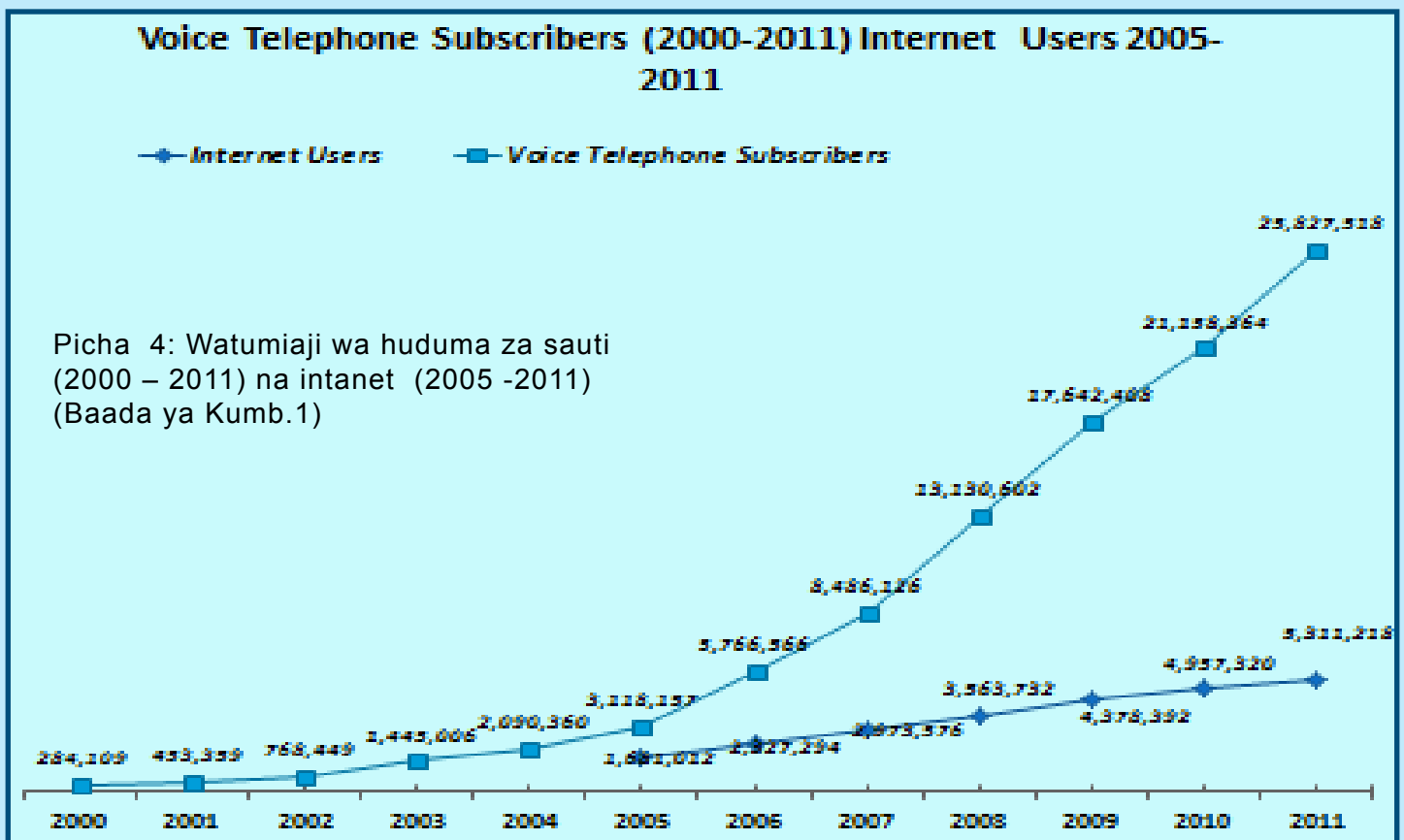
- Leseni ya Utoaji wa Huduma zimeongezeka kufikia 84 hadi Juni 2012.

- Leseni za Utangazaji zimeongezeka hadi kufikia Vituo vya Redio 88 na Vituo vya Luninga ni 26 hadi kufikia Juni 2012.

Orodha ya watoa huduma wote inapatikana katika tovuti ya TCRA . (Kumb. 1).

**2.6 Ukuwaji wa Soko la Watumiaji ya Huduma**

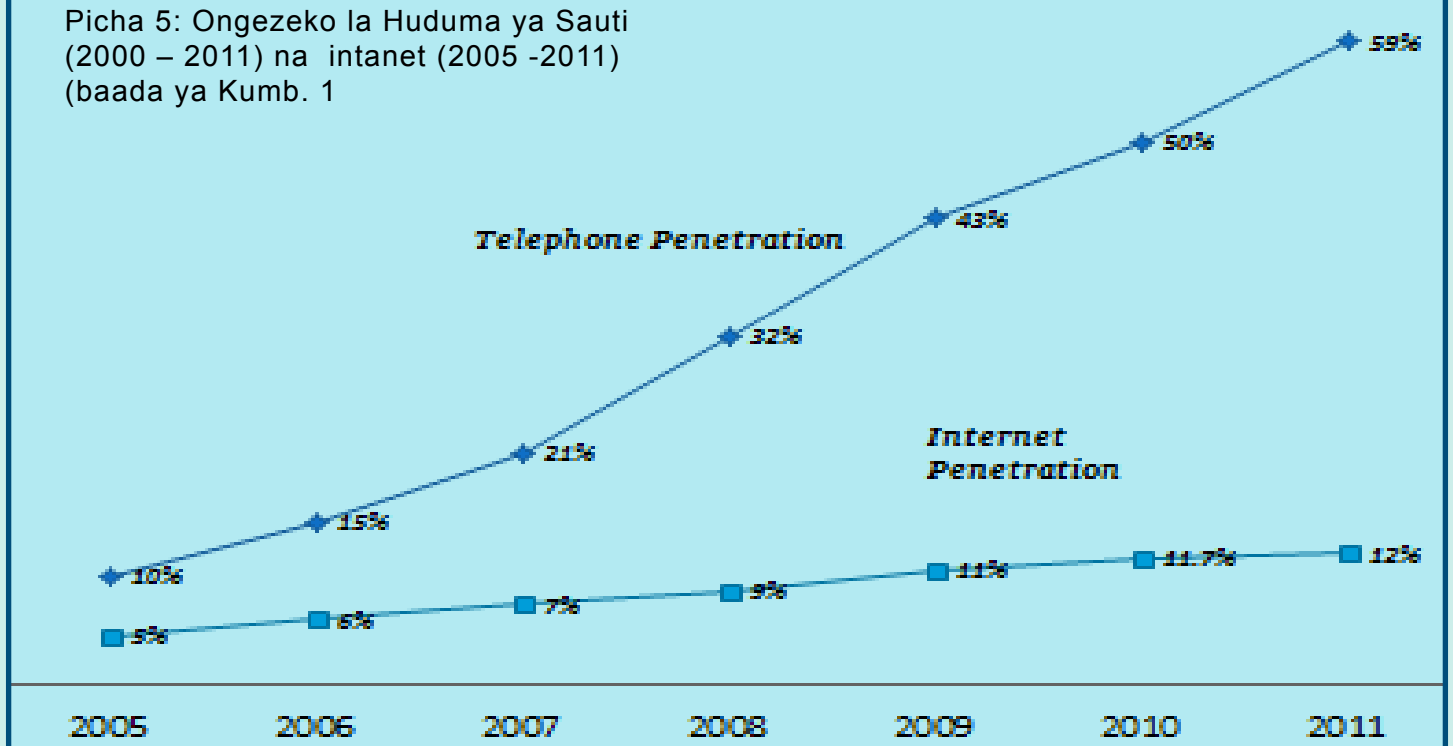
Idadi ya watumiaji wa huduma za Mawasiliano imeongezeka kwa kiwango cha juu, had kufikia kiasi cha watumiaji wa huduma ya sauti 300 000, mwaka 2000 mpaka takribani 26 000 000 mwaka 2011 kama ilivyo onyeswa katika picha 4. Watumiaji wa huduma za intanet wamefikia kiasi cha 5 000 000 hadi mwaka 2011. Takwimu hizi zimeelezwa pia katika jedwari na 5.



Picha 4: Watumiaji wa huduma za sauti (2000 – 2011) na intanet (2005 -2011) (Baada ya Kumb.1)

## Telephone and Internet Density/Penetration

Picha 5: Ongezeko la Huduma ya Sauti (2000 – 2011) na intanet (2005 -2011) (baada ya Kumb. 1)

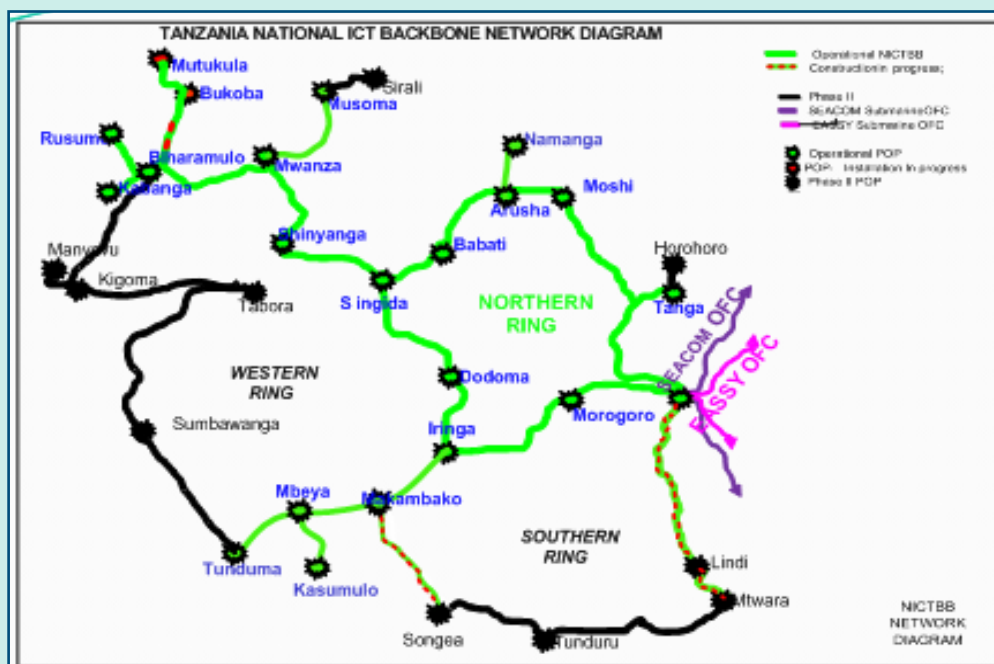


## 2.7 Ongezeko la Miundombinu

### 2.7.1 Mkongo wa Taifa

Serikali ya Tanzania imewekeza katika kujenga Mkongo wa wa Mawasiliano wa Taifa ujuliakanao kama, “National ICT Broadband Backbone (NICTBB)” kama ilivyoonyeswa katika picha ya 6. Uziada umehakikishiwa kwasababu ya kuwepo hazama tatu: Hazama (ring) ya Kaskazini,

Hazama ya Magharibi na Hazama ya Kusini. Hali kadhalika muunganisho muhimu na nchi jirani nane kwa Taifa letu la Tanzania. Nchi hizo ni Kenya, (kupitia Namanga), Uganda (kupitia Mutukula), Rwanda (kupitia Rusumo), Burundi (kupitia Kabanga), DRC (itaunganiswa), Zambia (kupitia Tunduma), Malawi (kupitia Kasumulo) na Msumbiji (kupitia submarine).

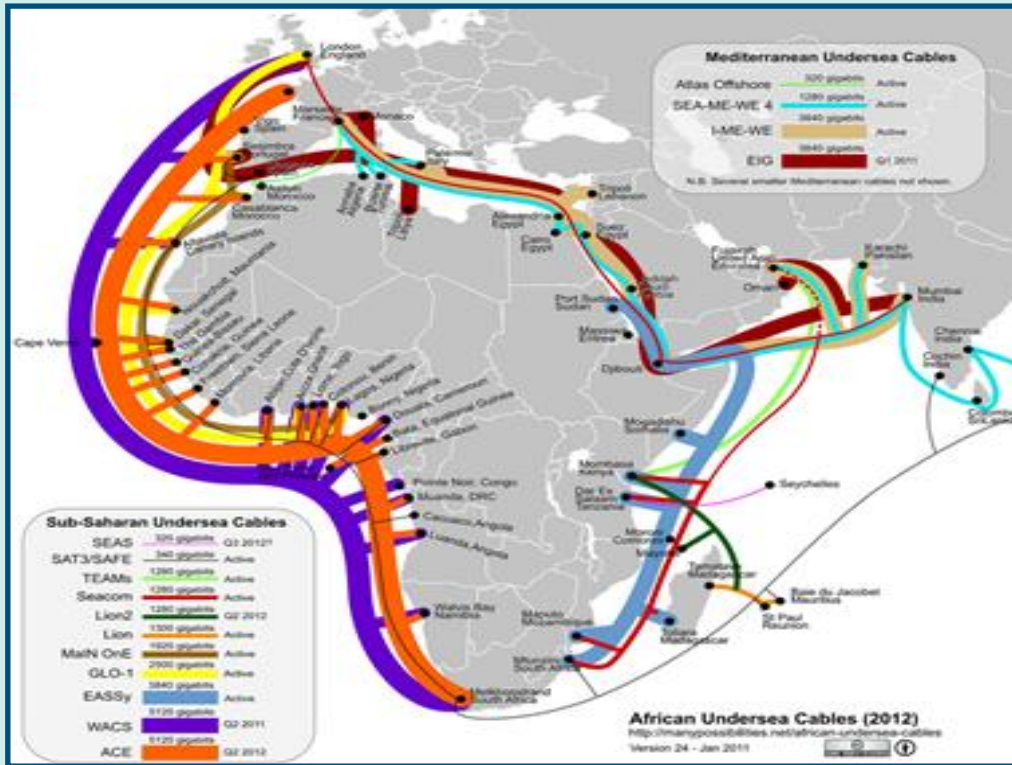


Picha 6: Mkongo wa Taifa wa Mawasiliano ukionyesha Hazama ya Kaskazini, Hazama ya Magharibi Hazama ya Kusini.

## 2.7.2 Nyaya ya Mkonga chini ya Baharí Barani Afrika

Katika miaka michache iliyopita, Pwani ya Afrika Mashariki imeshuhudia kutandazwa kwa Nyaya za Mawasiliano chini ya Baharí ya Hindi, baada ya kufika nyaya za Seacom jijini Dar es Salaam mwaka 2009, Mkonga wa EASSY, mwaka 2010 na Mkonga wa SEAS mwaka 2012.

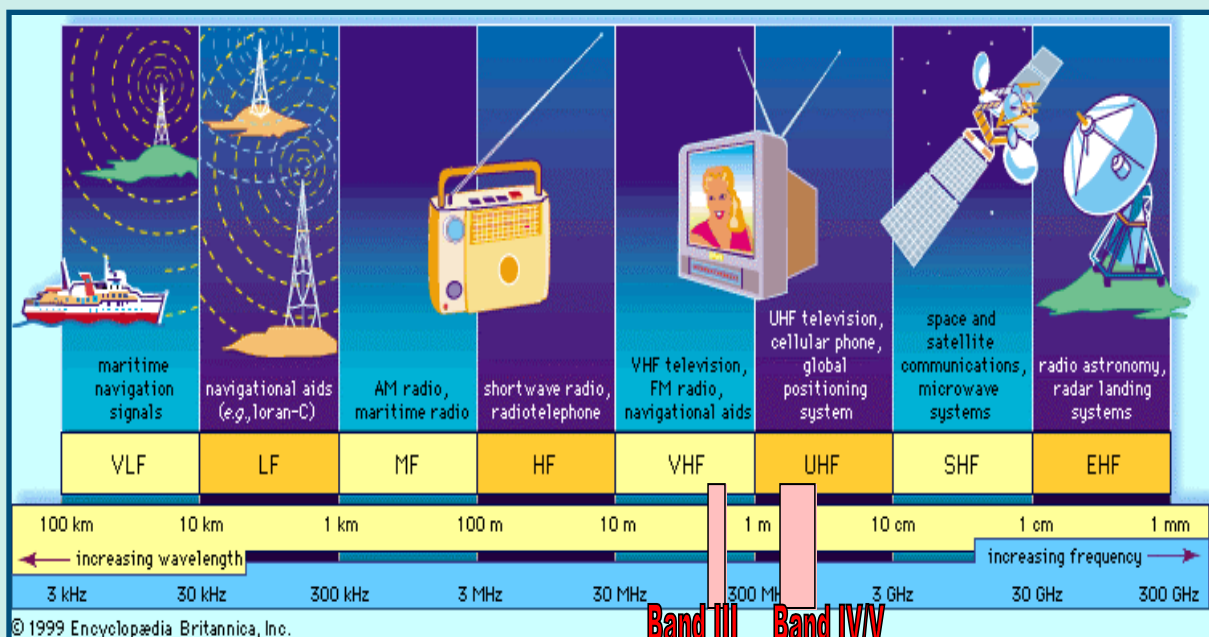
Picha na 7 inaonyesha mtandao wa nyaya za mawasiliano zilizopita chini ya baharí barani Afrika. Nyaya hizi zimeboresha muunganisho wa mawasiliano ya kimataifa, ambayo hapo awali yalikuwa yana tegemea mawasiliano ya chombo cha Satelaiti.



Picha 7: Mkonga wa Mawasiliano, Afrika

## 2.8 Masafa Hadimu ya Mawasiliano

Masafa ni rasilimali adimu, ambayo ni muhimu sana katika kuwezesha Mawasiliano kama inavyo onyesha kwenye picha, picha na 8.



Picha 8: Rasilimali hadimu ya Masafa



## 2.9 Rasilimali hadimu ya Namba

Mamlaka ya Mawasiliano Tanzania TCRA inapanga, mpango wa rasilimali ya namba kwa ajili ya Mawasiliano ya aina mbalimbali, kwa mfano namba kwa huduma za kipesa za ki-elektroniki: \*150\*XY#, imeonyeswa katika picha, 1.

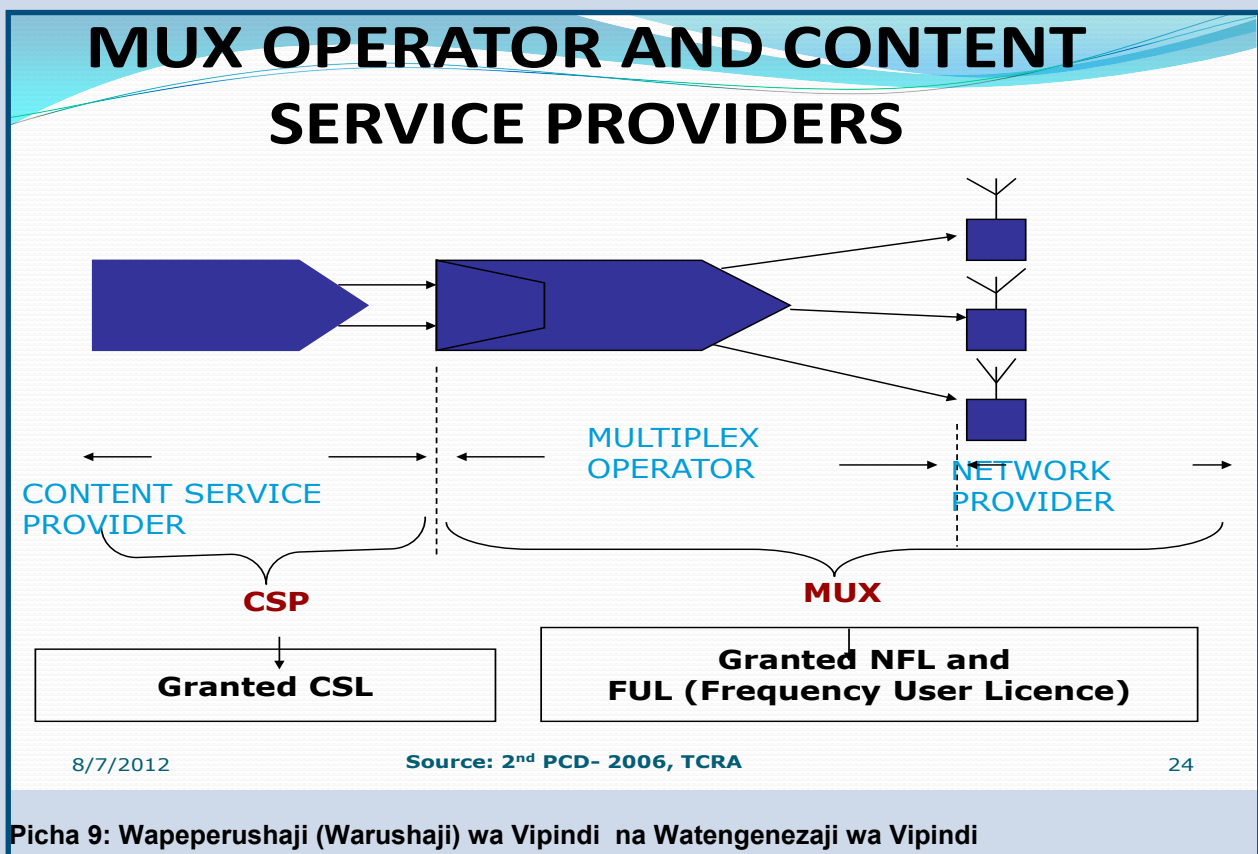
Mtoa huduma	Namba	Mtoa huduma	Namba
MPesa (Vodacom)	*150*00#	TPB	*150*21#
Tigo Pesa	*150*01#	NBC	*150*55#
Z Pesa	*150*02#	NMB Mobile	*150*66#, *150*68#
CRDB	*150*03#	DTB	*150*77#
Airtel Money	*150*60#	Mkombozi Bank	*150*06#
KCB	*150*22#	Push Mobile	*150*33#

Jedwali 1: Namba kwa ajili ya huduma za fedha, \*150\*XY#

## 2.10 Kutoka Analojia kwenda Digitali

Kama ilivyo kwa nchi nyingine duniani, Tanzania ipo katika harakati za kuhama kutoka mfumo wa utangazaji wa Analojia kwenda Digitali. Katika utangazaji wa digitali, kutakuwepo na utenganisho kati ya Watengenezaji wa Vipindi vya kurusha hewani - content service providers (CSP)

na wasambazaji wa vipindi hivyo (signal distributor au multiplex operators) kama inavyo onyeshwa katika picha na 9. Faida za kuhamia katika mfumo wa Utangazaji wa Digitali ni nyingi ikiwemo, upatikanaji wa nafasi zaidi ya masafa bora ya utangazaji; mgawanyo wa masafa ya kidigitali ambao utawezesha kupatikana kwa nafasi ya masafa ya ziada ya utangazaji na matumizi ya mtandao; muonekano bora wa picha za luninga na sauti safi; vipindi bora zaidi; mtandao wa utangazaji ulioboreshwa zaidi.



Picha 9: Wapeperushaji (Warushaji) wa Vipindi na Watengenezaji wa Vipindi

## 2.11 Anwani za Makazi na misimbo ya Posta (Postikodi)

Kuanzishwa kwa mfumo wa Anwani za Makazi na postikodi, ni utelekezaji wa Sera ya Taifa ya Posta ya Mwaka 2003. Sera ya Taifa ya Posta inasisitiza umuhimu wa kuwa na anuani kamili za makazi zinazoonyesha jina la mtaa, jina la jengo, namba ya nyumba na postikodi ili kuwezesha na kurahisisha na pamoja na mambo mengine usambazaji wa barua na vifurushi hadi majumbani.

Katika mfumo huu wa anwani za makazi vitu vifuatavyo vitajumuishwa kutimiza anuani kamili:

1. Mitaa na barabara itapewa majina kama taratibu za serikali za mitaa zinavyosema;
2. Maeneo yaliyo pangwa namba mpya zitapewa namba kuanzia pale mtaa unapoanza. Kushoto kutakuwa na namba witiri na kulia kutakuwa namba shufwa.
3. Maeneo yenye mzunguko yatapelewa namba kwa mtiririko wa kawaida wa

namba kuanzia kushoto.

4. Maeneo ya vijijini na yale yasiyopangika kutakuwa na utaratibu wa kutoa namba kufuatana na Kitongoji. Namba hazitakuwa sawa na.
5. Anuani kamili itakuwa na namba zakiposta ya Postikodi yenye tarakimu tano (5).

Postikodi ni namba zinazotolewa kwa madhumuni ya kulitambua eneo na kuwezesha kufikisha huduma kirahisi, Postikodi inatofautisha eneo fulani na eneo jingine.

Kuna aina mbili za Postikodi nazo ni;

- Namba
- Namba na herufi

Tanzania tutatumia postikodi ya namba yenye tarakimu 5 ambapo nchi yetu imegawanywa katika Kanda sita (6) na Zanzibar.

### MGAWANYO WA TARAKIMU 5 ZA POSTIKODI

Mfumo wa Postikodi	Ufafanuzi wa Postikodi
X X X X X	Tarakimu 5
X - - - -	Tarakimu ya 1 = Kanda au eneo
X X - - -	Tarakimu Mbili za mwanzo (ya 1+2) ni Mkoa katika kanda au eneo.
X X X - -	Tarakimu tatu za mwanzo (ya 1+2+3) ni Wilaya katika Mkoa
X X X X X	Tarakimu zote 1+2+3+4+5 = Kata wadi(Zanzibar), watumaji wakuu wa huduma za posta, land marks, afisi ya Posta.

Mifano ya ni simbo ya posta (postikodi) ni: 11101 Kinvukoni, Ilala 12101, Dar es Salaam; 23101 Seke Arusha; 33106 Kirumba, Mwanza; 41105 Makole, Dodoma; 57103 Mfaranyaki, Songea; 63219 Msanga Mkuu, Mtwara; 73104 Mkokotoni, Kaskazini Unguja; 74209 Wawi, Chake Chake.

Mamlaka ya Mawasiliano Tanzania imechapisha orodha ya postikodi za kata zote Jamuhuri ya Muungano wa Tanzania kwenye gazeti la serikali Na. 220 la tarehe 22 Juni 2012. Postikodi imeanza kutumika kama sehemu ya utambulisho wa kila mtanzania katika kitambulisho cha Taifa.

Hapana shaka mfumo huu wa anwani utaboresha maisha ya Watanzania katika maendeleo ya kijamii na kiuchumi. Hii ni fursa kubwa kwa sekta ya posta kutoa mchango zaidi katika kutoa chachu ya

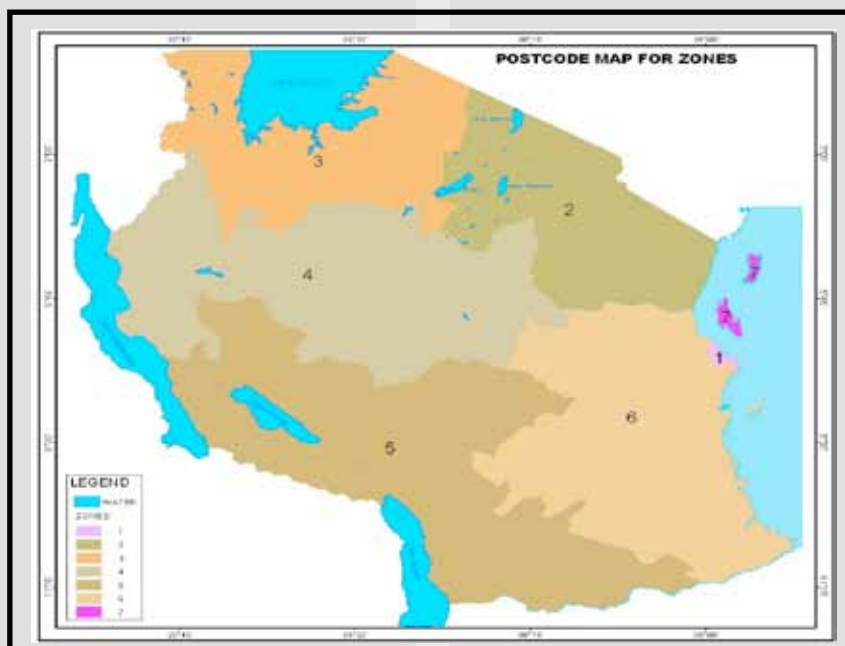
maendeleo ya kiuchumi katika nchi yetu. Zipo faida nyungi za anwani mpya na simbo za posta zitafanya kila mtanzania atakuwa na anuani yake, itakuwa rahisi kufika ofisi za serikali, biashara na hata makazi. Itasaidia ukusanyaji wa kodi mbalimbali za Serikali za Mitaa; zitaboresha huduma kama zima moto pia itasaidia kutumika kwa teknolojia za kisasa katika kutambua maeneo ya miji yetu. Baada ya utekezaji wa mpango huu Arusha na Dodoma, Katika maeneo ya kati ya miji, kwa sasa utekezaji umeanza Dar es Salaam na Zanzibar.

### 3 TEKNOHAMA NA UKUWAJI WA KIJAMII NA KIUCHUMI KWAPAMOJA

Aina mbalimbali za TEKNOHAMA

zilizojadiliwa katika sehemu ya 2 zinauwezo wa kuwezesha ukuwaji wa kijamii na kiuchumi kwapamoja. Kama iivyonukuliwa katika sehemu ya 1, kwenye makala ya kwenye Jarida la Kiuchumi la The Economist, imebainika kwamba katika kila simu za mkononi 100 katika nchi inayo endelea kiuchumi, kipato cha mwananchi kwamwaka (GDP) kinaongezeka kwa asilimia 0.8 (Kumb. 1a). Ukweli huu umebainika hapa Tanzania pia kuwa ni kweli.

TEKNOHAMA ina fursa mbalimbali kama ifwatavyo;



- Serikali Mtandao (e-Government) itaongeza uwazi na kupunguza mda ambao viongozi wa serikali hutumia kujibu maswali kwa wananchi. Kwa kutumia Serikali Mtandao Wananchi hawapashwi kutembea umbali mrefu kufwatilia majibu ambayo wanapata kwenye mtandao.

- Elimu-Mtandao
- Afya Mtandao
- Kilimo Mtandao

- Biashara Mtandao

- Usajili wa mtandao wa Taifa .tz domeni, idadi ya majina inatakiwa kuongezwa. Mtandao huu unawezeswa na Kituo cha Mtandao wa Mawasiliano Tanzania, Tanzania Network Information centre (tzNIC, kumb 13) ambacho kinamilikiwa kwapamoja kati ya Tasisi za Umma, TCRA, na Tasisi Binafsi, yaani Public Private Partnership (PPP), TCRA na Umoja wa watoa humuma zamtandao Tanzania, Tanzania internet Service

Providers Association, TISPA.

- Fursa mpya zitokanazo na Utangazaji wa Digitali
- Fursa mpya zitokanazo na Mfumo wa Misimbo ya Posta.

#### **4. CHANGAMOTO ZITOKANAZO NA MAENDELEO YA TEKNOHAMA**

Kunachangamoto nyingi katika maendeleo ya TEKNOHAMA. Baadhi ni kama ifuatavyo;

- Miundombinu ya TEKNOHAMA inahitaji iboreshwe na kukarabatiwa mara kwa mara. Kwa mfano Mkonga wa Taifa
- Bei kubwa ya mitandao
- Uratibu wa Masafa
- Kusambaza huduma za TEKNOHAMA vijijini
- Ushuru na bei nafuu
- Usalama kwenye mtandao
- Usajili wa laini za simu
- Utengenezaji wa maudhui ya vipindi kwa ajili ya wavuti na utangazaji
- Mabadiliko ya tabia ya nchi
- Taka za ki-elektroniki
- Miundombinu kutokuwa katika hali nzuri: Umeme, Barabara, Reli
- Elimu kwa watumiaji wa huduma: Kuchagua
- Uwiano wa sera, kanuni na sheria katika Kanda, kupitia Umoja wa Tasisi za Mawasiliano Afrika Mashariki (EACO) na Umoja wa Wadhibiti wa Mawasiliano Kusini mwa Afrika (CRASA) n.k.
- Na nyinginezo

#### **5. HITIMISHO**

Katika waraka huu, tumejadili nguvu ya TEKNOHAMA katika kuwezesha maendeleo ya kijamii na kiuchumi kwa pamoja nchini Tanzania. Tumeona kwa undani vipengele mbalimbali vya TEKNOHAMA kama: Vyombo au vifaa vya TEKNOHAMA, kompyuta bora za kisasa, mfumo wa tasisisi, sera za TEKNOHAMA, Kanuni, Sheria, mfumo wa leseni, ukuwaji wa soko la watoa huduma, ukuwaji wa soko la watumiaji wa huduma, ongezeko la miundombinu, rasilimali adimu ya masafa, rasilimali adimu ya namba, utangazaji kutoka analojia kwenda digitali na utambulisho wa mfumo wa postkodi nchini Tanzania.

Kuna fursa mbalimbali zitokanazo na matumizi ya TEKNOHAMA kama Serikali mtandao, E-limu Mtandao, Afya mtandao, Kilimo Mtandao, Biashara mtandao, na mengineo. Pia tumejadili changamoto zitokanazo namatumizi ya TEKNOHAMA, pia njia mbadala ya kuboresha matumizi ya TEKNOHAMA miaka ya badae.

Kuhitimisha, nitoe maoni jinsi gani tunaweza kuboresha kiwango cha maendeleo ya TEKNOHAMA nchini Tanzania, ambayo yataboresha maendeleo ya kijamii na kiuchumi nchini Tanzania;

- Kuongeza maendeleo ya elimu ya TEKNOHAMA na ujuzi katika ngazi mbalimbali za mfumo wa elimu (shule za msingi, sekondali, vyuo, vyuo vikuu) na tasisi nyingine za elimu. Msisitizo maalum uwekwe katika kuelimisha idadi kubwa ya rasilimali watu wenye ujuzi na utalaam katika fani hii ya TEKNOHAMA.

- Uwekezaji zaidi katika miundombinu ya TEKNOHAMA, huduma and matumizi pia vihimizwe.

- Uwezo mkubwa wa serikali mtandao, elimu-mtandao, afya-mtandao, kilimo-mtandao, biashara-mtandao na huduma nyinginezo za kimtandao pia zihimizwe nakutumika ipasavyo kwamanufaa ya WaTanzania wote.

# History of Broadcasting

**B**roadcasting started on 01st July, 1957 where the first Radio Station was established under the colonial rule. The station was named “Voice of Dar Es Salaam” and it covered only some parts of Dar Es Salaam.

In July, 1956 Tanganyika Broadcasting Corporation was established and later in 1965 it became “Radio Tanzania Dar Es Salaam” as a unit within the Ministry responsible for Broadcasting.

Up to 1993 there was only one public radio station in the country.

In 1993 the broadcasting industry was liberalized and government allowed for private ownership of broadcasting instruments (Radio and Television).

Following the liberalization of broadcasting industry, the sector has witnessed a tremendous growth from one Radio and Television Stations in 1993 to 93 radio stations and 28 television stations nationwide.

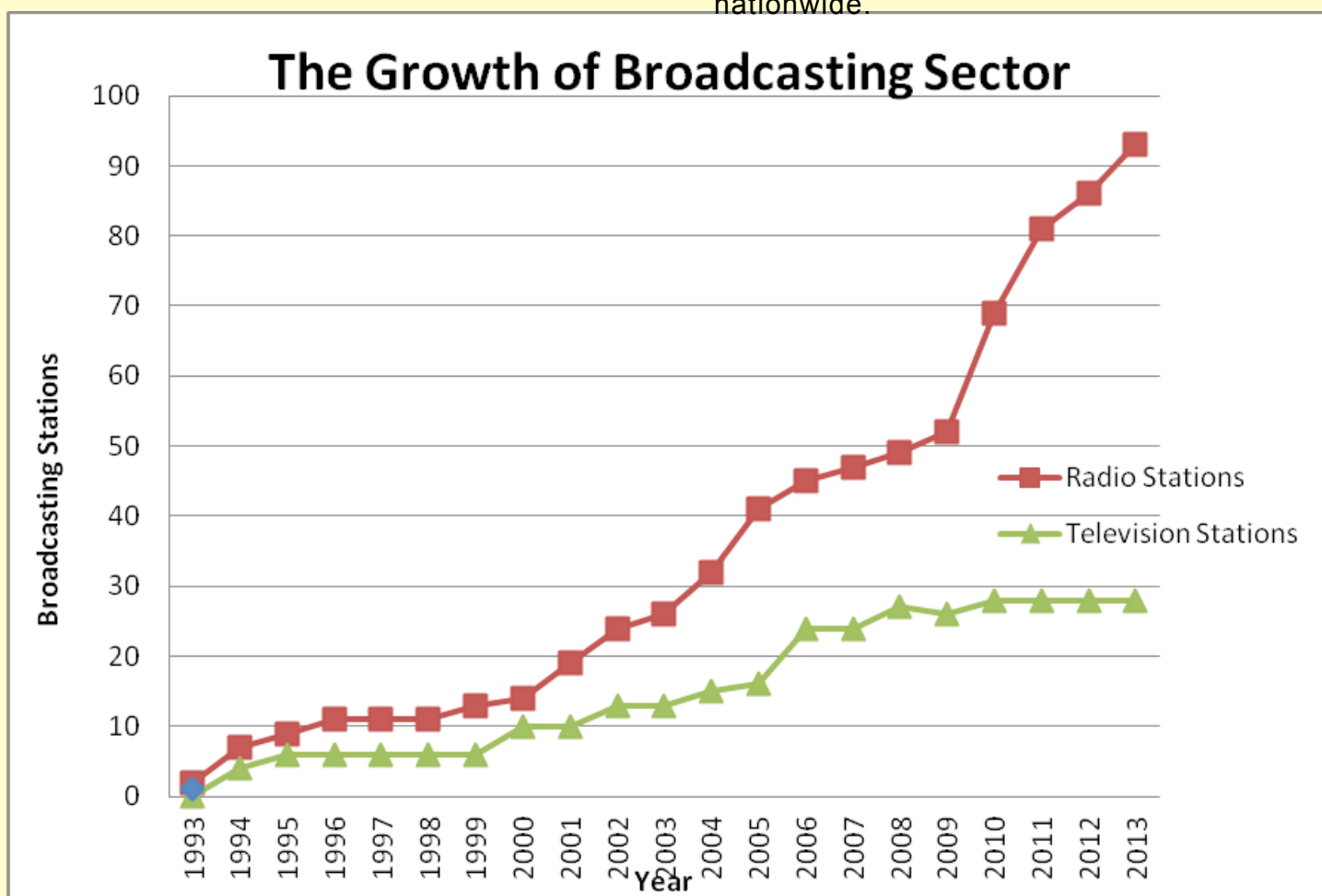


Figure 1: Trend of Broadcasting Sector in Tanzania

# DIGITAL

# TELEVISION

Following the adoption of Digital Terrestrial Television Broadcasting (DTTB) for Region 1 countries and Part of Region 3 countries by the RRC-04 (Preparatory Conference from 10th – 31st May, 2004) and RRC-06 (Planning conference 15th May- 16th June, 2006) Tanzania started preparations for the analogue to digital migration.

The preparation for analogue to digital migration started from 2005 and passed through the following milestones:-

2005: Adoption of Convergence Licensing Framework

2005: First Public Consultation Document (PCD):- The document explained Digital Terrestrial Television and highlighted advantages of DTT over analogue television.

2006: Second Public Consultation Document (PCD): Established licensing framework for DTT;-Separation of Content and transmission; Case for establishment of Multiplex Operators (MUX) as signal distributors.

2007: Formation of the National Technical Committee on DTT Broadcasting (NTC-DB). The committee drew members from the Ministry, Regulators, Consumers Consultative Committee, Content Committee and University Professor;

2008: National Steering Committee (NSC): Inter-Ministerial Committee as a Government Organ to oversee migration.

2010/11: Legal Framework was put in place. The Electronic and Postal Communications Act, 2010 was enacted

and Regulations Governing Digital migration was signed in 2011 it provided for a switch off date

2010: Licensing of MUX through an open tender. Three Multiplex Operators were licensed to provide digital signal distribution in Tanzania.

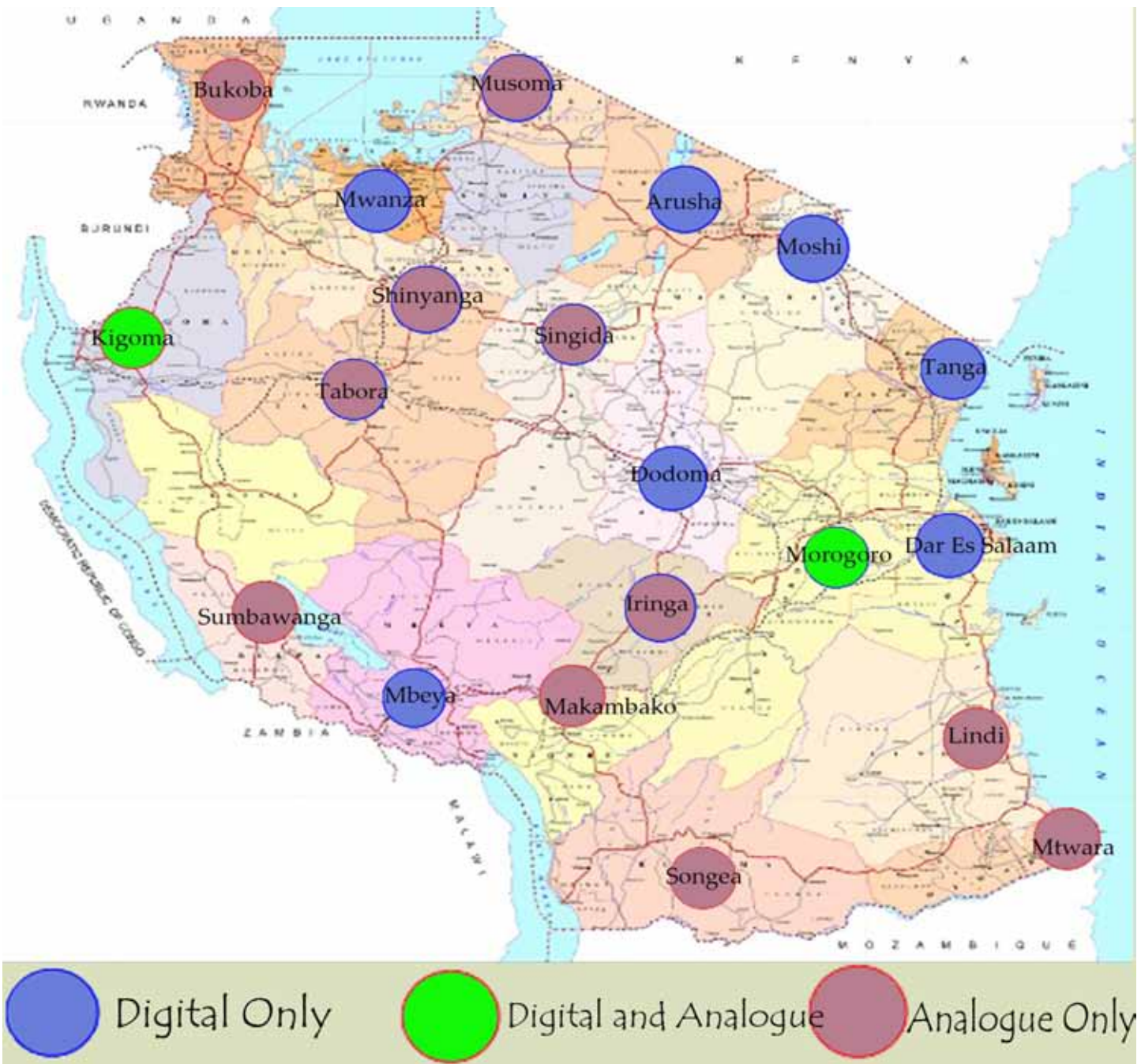
2011: Formation of the National Public Awareness Campaign Team (NPACT).

2012: The Government through the NSC approved a phased ASO in all simulcast service areas starting from 31st December, 2012.

# Analogue Switch Off (ASO)

Following the adoption of the phased approach to the analogue switch off, the implementation started with Dar Es Salaam city on 31st December, 2012. Up to date seven cities namely Arusha, Moshi, Mwanza, Dodoma (The Capital

City), Tanga, Mbeya and Dar Es Salaam have already switched off the analogue transmitters. It is expected that by June, 2014 all remained analogue transmitters will be switched off.



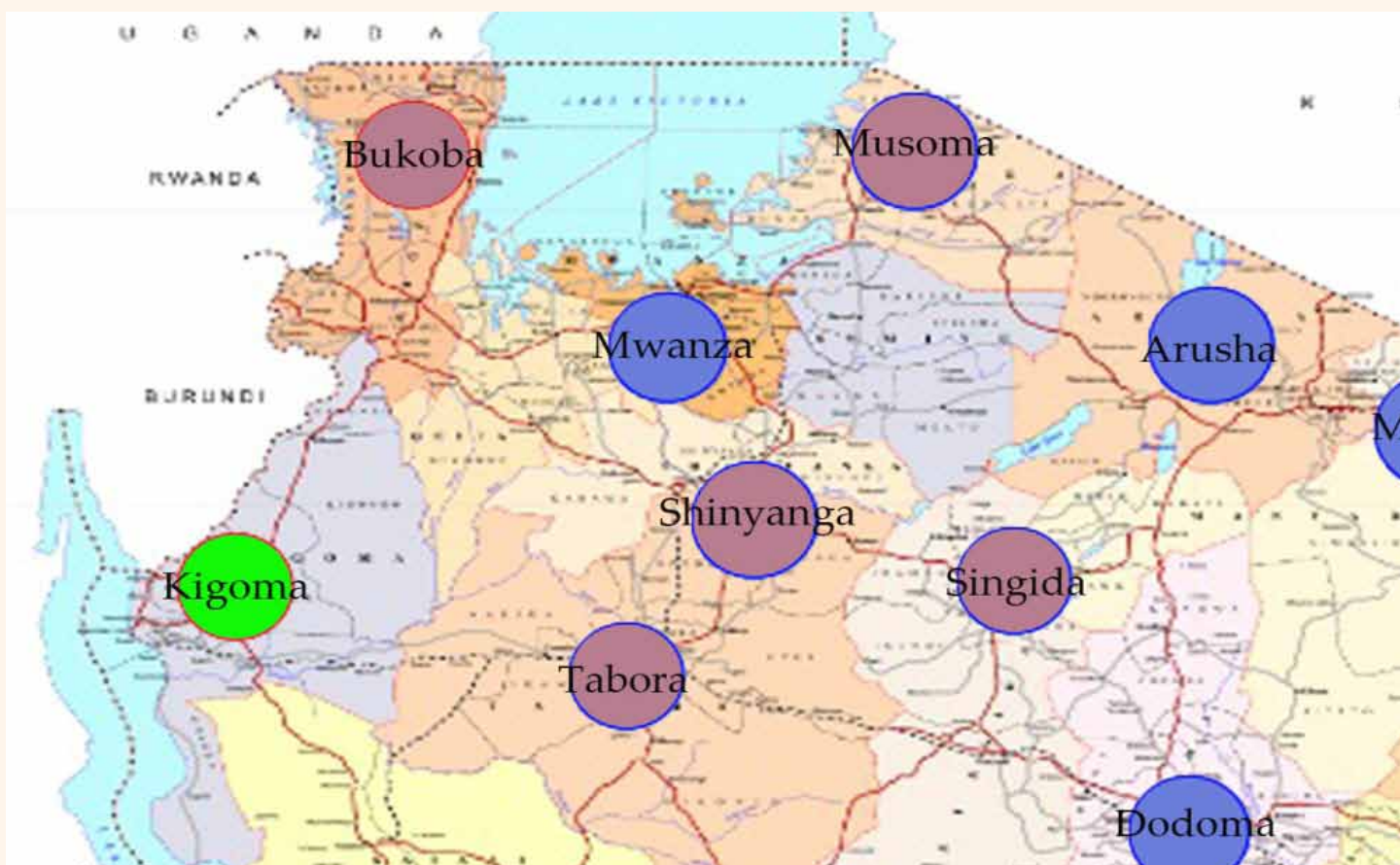
# Reasons for Successfully Analogue Switch Off

## 1. Digital migration road map:

The Tanzania Communications Regulatory Authority (TCRA) drew a migration Roadmap consisting of activities, events and timelines from 2005.

All stakeholders (Government, Operators and Consumers) were well consulted.

## 4. Communication strategy.



*The President of the United Republic of Tanzania Launching the DTT public awareness campaign.*

## 2. Political will

Government provided full support to ensure timely migration. The migration had a full support from the President of the United Republic of Tanzania, His Excellency Jakaya Mrisho Kikwete.

TCRA formulated a Communications Strategy (CS) and approved by the Government.

CS provided for all communications outlets including print and electronic media (newspaper, TV/Radios), road shows, talk shows, meetings/seminars and outdoor advertising.

## 3. Consultation with stakeholders



The President of the United Republic of Tanzania launched the Public Awareness Campaign and the digital logo on 24th August, 2011.

## 5. DTT Financing

Public Private Partnership (PPP) for the public signal distributor (public broadcaster entered into a joint venture with a foreign company to build DTT infrastructure; Private Investments for two additional signal distributors with local and foreign shareholders ; Government exempted import duty on STBs to make them affordable to consumers.

## 6. Consumers Education

Public education to consumer were conducted throughout the country through various media (Radio, Television, Social Media, Road Shows, Seminar.



*Public awareness Campaign in diferent part of the Country*

## Challenges of DTT Migration

The analogue switch off was faced by number of challenges. The DTTB migration implementation challenges can be grouped as follows:

- Content Service related challenges
- Multiplex related challenges
- Regulatory challenges
- Customer related challenges

### Content Service Providers Related Challenges

High cost for Simulcast period:- During this period, Content Service Providers were required to run their analogue transmission sites at the same time pay transmission fee to Multiplex Operators.

High transmission fee imposed by Multiplex Operators:- The charged by MUX operators were too high for most of Content Service Providers to meet.

Lack of enough local and premium content on digital terrestrial platform to attract customer migrate.

Upgrade cost for transmission studios to suite the digital environment.

### Multiplex Operators Related Challenges.

Weak signal reception in some points within a defined service area due to uneven terrain (Digital Cliff). This may requires installment of additional transmitters within same area.

Unwilling of Content Service Providers to pay the transmission fee. Content Service Providers (CSPs) are claiming that the fee imposed by Multiplex operators is prohibitive.

The usage of satellite for distribution networks which is very expensive as compared to optic fiber. This has increased the cost of distribution of content to regional transmitters.

Support services/ customer care

including paying for calling the call centers when customer asking for support services.

- Land acquisition for TX facilities from the local government
- Availability of powers supplies to some areas
- Process of environmental impact assessment
- Delay process In Acquiring Building Permit

### **Regulatory Challenges**

- Licensing of Multiple Channels:- One of advantage of digital broadcasting is the increase number of channels. Now it is possible for one company to have more than one channel (This applies for both Free to Air and Subscription). Challenge here is how do you licence. License aggregator or every channel?
- Separation of jurisdiction of Signal distributors and CSPs
- Requirements of having SLA between Signal distributors and CSPs
- Interoperability of Set Top Boxes:- Currently the set top boxes that are available in the market are tied to the MUX network and thus are not interoperable. The Authority has so far adopted the Common Interface set top box where by the customer will use the Common Interface Module (CAM) and will publish the minimum set top boxes specifications.
- Sustainability of FTA network
- Promotion of the digital services in underserved areas. Multiplex operators are deploying network in the cities and thus people in the village are left without information.

### **Consumer Challenges**

- Lack of Education

- Set Top Box interoperability.
- The set top boxes (STBs) were not required during analogue transmission. Most customers sees as unnecessary additional cost.
- Lack of attractive, sufficient and diverse local content in DTT platform.
- Dual Illumination has made most of Customers relaxed
- Consumer behavior; Consumers were used to Free to Air channels during analogue transmission. They want to view all channels for free in DTT as it was in Analogue time

### **Lesson**

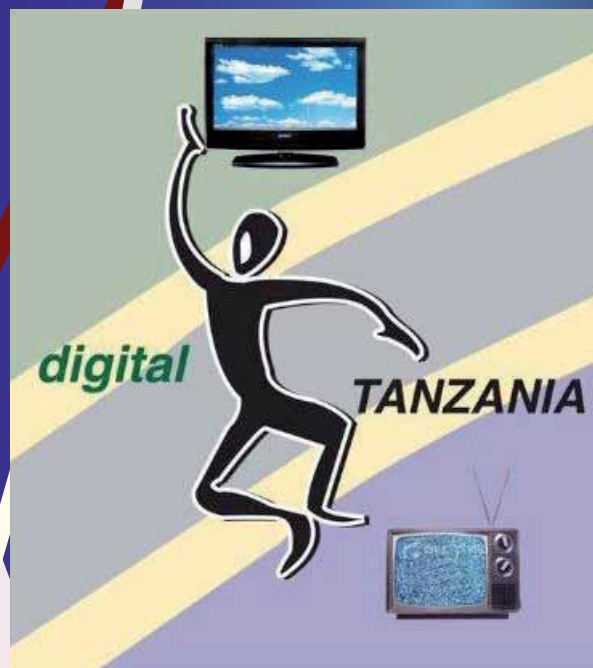
Success of digital migration based on practical experience

in Tanzania depends on the following key factors;

- (a) Political will: Full support from the Government
- (b) Roadmap (SMART-Specific, Manageable, Attainable, Realistic and Time-bound);
- (c) Legal and Regulatory instruments; Convergence Licensing Framework, The Analogue Switch Off date pronounced in the Regulation
- (d) Concerted Public Awareness Campaigns;
- (e) Regular consultations with stakeholders;
- (g) DSO team (skills): Well trained staff for DTT migration
- (h) Champions (Head of State, Minister, Artists);
- (i) Operators goodwill;



## **MAMLAKA YA MAWASILIANO TANZANIA**



**MASWALI YAULIZWAYO MARA KWA MARA**

**KUHUSU MABADILIKO YA TEKNOLOJIA YA**

**UTANGAZAJI KUTOKA ANALOJIA KWENDA DIJITALI**



## CREATING A LEVEL PLAYING FIELD

The Tanzania Communications Regulatory Authority (TCRA) is a quasi independent Government body responsible for regulating the communications and broadcasting sectors in Tanzania. It was established under the Tanzania Communications Regulatory Authority Act NO.12 of 2003 which merged the Tanzania Communications Commission and the Tanzania Broadcasting Commission .The Authority became operational on 1 st November 2003 and effectively took over the functions of the defunct two Commissions.The Authority is a statutory body established as part of the Government Policy reforms in the communications sector with the aim to improve the availability of the info-communications services to the public as well as allow new players into the market.

### VISION

To be a world- class regulator, creating a level playing field among communication service providers and promoting accessible and affordable services to consumers in Tanzania.

### MISSION

To develop an effective and efficient communications regulatory framework, promote efficiency among the communications services providers, and protect consumer interests with an objective of contributing to socio-economic and technological development in the United Republic of Tanzania.



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