AFRICAN MEDIA INITIATIVE

REPORT FOR

THE

ANALOGUE TO DIGITAL MIGRATION TELEVISION MIGRATION WORKSHOP

HELD ON

3RD - 4TH DECEMBER 2014

AT

AFRICAN ADVANCED LEVEL TELECOMMUNICATIONS INSTITUTE

NAIROBI, KENYA

[2014]

TABLE OF CONTENTS

Figure 1: Delegates registering

Figure 2: Sharing notes

3 December 2014

Dear Delegate,

Welcome to this two-day regional workshop on 'Analogue to Digital Television Migration.' The African Media Initiative (AMI) and its partners are particularly pleased to host this event that explores an issue that shall affect every one of us -- television viewers, a content providers, broadcasters, vendors, a policy makers, regulators and even regular citizens are impacted.

As the 2015 deadline for digital switchover draws nearer, we have the collective responsibility to develop mechanisms to facilitate a better understanding of what the switchover entails, to share the experiences of countries that have successfully managed the switchover and to create a body of good practices that speaks to collaborative approaches to solutions to Africa's challenges and opportunities.

It is within that spirit that AMI sees the two-day workshop as it shall no doubt offer a platform to discuss some of the key issues relating to technical, operational, policy and social implications of the switchover, with the view to develop a common agenda for the way forward.

Over the next two days, you shall have the benefit of interacting with experts from several countries as well as industry stakeholders and policy makers. We sincerely hope that such interactions will be both enriching and informative.

Lastly, AMI wishes to thank all its partners for this collaborative effort and making possible the holding of this workshop to explore ways to take advantage of innovations in technology for the continent's benefit.

Please make the most of this experience.

Sincerely

Eric Chinje
     CEO

Meredith Beal
Digital Migration Programme Manager

About The African Media Initiative (AMI)

The African Media Initiative (AMI) is a pan-African organization that seeks to strengthen the continent's private and independent media sector from an owner and operator perspective to promote democratic governance, social development and economic growth. It does so through a set of strategic activities aimed at transforming the media and communications landscape on the continent. AMI's overall goal is to promote the development of pluralistic media as a necessary and critical ingredient of democratic governance, as well as economic and human development in Africa.

The AMI approach to private and independent media development combines commitments to ethics, quality and public service with a conviction that economic sustainability is crucial to the sector's independence and effectiveness. In AMI's view, the private and independent media companies that provide most of Africa's media outputs must be at the center of African media development initiatives. This includes the sector's own identification of its most urgent needs, the implementation of practical measures to strengthen the industry and its standards, as well as the creation of a pan-African community of private and independent media leaders for mutual support and collaborative advocacy.

AMI seeks to deliver on its mandate by working through five key priority areas, as summarized below:

1. Strengthen the Media Owners and Operators' Community,
2. Expand Access to Finance and New revenue Streams,
3. Harness the Digital Revolution through Technological Adaptation and Innovation
4. Build a Leadership Cadre in the Media Sector through a Commitment to Improved Ethics and Management,
5. Content Development

INTRODUCTION

The workshop brought together participants from Kenya, Uganda, Tanzania, Rwanda, Burundi, Malawi, Nigeria, Ethiopia, South Africa and South Sudan. The main goal of the workshop was to offer a platform to discuss some of the key issues relating to technical, operational, policy and social implications of the switch-over from analogue to digital with a view to developing a common agenda for the way forward.

OPENING REMARKS

BY MEREDITH BEAL, DIGITAL MIGRATION MANAGER, AMI

The opening remarks were delivered by Meredith Beal, a media owner from the United States and a consultant with the African Media Initiative. He leads a multi-country project to improve business management practices at media organizations in Africa. His activities at AMI include supporting media organizations in Africa effectively plan for and prepare for the impeding digital migration. In this regard, Beal has developed a pamphlet with tips to help TV station managers dealing with the transition.

Figure 3: Beal delivering his opening remarks

The following is an extract of Beal's opening remarks:

Habari za asabuhi. Karibuni Kenya. (Good morning and welcome.)

To all of our distinguished guests, on behalf of the African Media Initiative, I'd like to welcome you to the East Africa Analog to Digital Television Migration Workshop. We'd like to thank you for coming, particularly those of you who had to travel long distances to get here. We hope you find the next couple of days meaningful.

We would like to thank our partners: Ford Foundation, Konrad Adenauer Stiftung, and our partner and host, the African Advanced Level Telecommunications Institute (AFRALTI).

The impending migration is an important step in Africa's rising. AMI therefore recognized a way to support the migration effort by bringing people together to share experiences and insights.

Delegates are here representing Kenya, Uganda, Tanzania, Burundi, Rwanda, Malawi, Ethiopia, South Africa, South Sudan and Djibouti.

There is a rush of energy and creativity exploding in Africa enabled by technology and innovation that is transforming the continent. We have the opportunity to leverage technological advancements to improve the quality of life and to promote human development like never before. Media has a critical role to play in that enabling and you, as media professionals have an important mission in the rising of the continent.

We appreciate the support of the Honorable Cabinet Secretary from the Ministry of Information, Communications and Technology, Dr. Fred Matiang'i.

I trust that you will find value in the deliberations, discussions, debate and exchange over the next two days. Please have a enjoyable workshop.

Asante sana. (Thank you.)

WELCOMING REMARKS BY PARTNERS

Figure 4: (L-R) Meredith Beal, Ronelle Drummond-Hay, Daniel Obam, Eustace Maborake

A number of key guests invited by AMI graced the occasion, and also gave their welcoming remarks. Rosemary Okello-Orlale, from the Ford Foundation, reiterated the importance of 'public participation in the ongoing digital migration which should include ordinary

people.' She noted that there were still struggles between media owners and other stakeholders and these need to amicably resolved to facilitate optimal interactions and a seamless switch-over for the benefit of all the main stakeholders.

The Konrad Adenauer Stiftung (KAS) was represented by Ronelle Drummond-Hay, who in her remarks in which she noted that KAS had been in partnership with AMI for six years under the Africa Leadership Programme. Drummond-Hay talked of the need for media freedom that sees journalists as partners in the democratic process. She observed that the talk of digital migration had somehow ushered in a certain 'fear of the unknown' and hence such initiatives by AMI and the other partners was a useful avenue of providing the platform to interrogate and understand what the switch-over actually meant.

 Eustace Maboreke, Director of the African Advanced Level Training Institute informed the participants that Telecommunications, Media and related Technology (TMT) has replaced the term Information Communication and Technology (ICT) which was previously focused only on technology but now the shift towards digital media has opened room for many players to come in with massive benefits for the women, youth and the marginalized sectors of society. He said that after completing the switchoff June 17, 2015, the question will be: *What next after migration? What do we want to do with it? Are we ready to take advantage of the opportunities brought about by the migration? Do we have people with competencies in human development in developing content, uploading and others?*

KEYNOTE ADDRESS BY DR. FRED MATIANG'I, CABINET SECRETARY, MINISTRY OF INFORMATION AND COMMUNICATIONS, KENYA

Figure 5: Daniel Obam presenting Dr. Matiangi's Speech

The keynote address was delivered by Dr. Matiang'i in a speech read on his behalf by Daniel Obam from Kenya's Digital Migration Task Force. The Cabinet Secretary appealed to stakeholders especially the media as an influential player to play a role in consumer education. He also released a preview of digital migration awareness campaigns to take place in the next few days. He

said that the first phase of switchover in Kenya would take place on 31 December, 2014, followed by the second phase in 2nd February 2014 and 30th March for the last tranche of the migrations.

The following is a full text of Dr. Matiangi's speech:

Distinguished Guests, Ladies and Gentlemen,

*It is my great honour to welcome all of you to the **East Africa Regional Digital Migration Workshop**. I wish to extend a special welcome to all delegates coming from beyond our borders. Karibuni sana.*

The impending migration from analogue to digital terrestrial television broadcasting offers great opportunities and presents significant challenges as well. A successful migration is a collaborative effort, involving government, the media, civil society and the public. Let is tale advantage of the opportunities enabled by this transition and overcome its challenges so that as many people as possible may benefit from this technological advancement.

Technology is constantly on the move and if we don't advance with it, we stand the risk of becoming obsolete.

Televisions used to be bulky items because of the use of vacuum tubes but the invention of the transistor ignited a series of advances that changed the way people listen to their favorite music, do their jobs, pay their bills, and educate themselves and how they do a host of other things.

Our televisions would still be large and bulky items that used vacuum tubes and our cars couldn't guide us to the nearest restaurant without that innovation. Hardly anyone uses typewriters any more. The laptop computer and now hand-held devices have transformed our world and improved our efficiency. So we must continue to advance or we will be left behind.

The challenges of migrating to digital broadcasting are significant. Some of the key challenges include funding, licensing and spectrum management issues, managing the analogue switch off effectively, addressing technical standards and skills development as well as public awareness-ensuring that the citizenry knows what is going on and what they need to do. The financial challenges for television stations include getting onto the digital airwaves at the least cost possible while optimizing return on investment as well as the cost of training staff for new skills needed. For government ministries and regulatory bodies, it is the capital requirement for infrastructure improvements and equipment to facilitate the necessary environment to enhance the transition. For many citizens, it is the cost of purchasing set-top-converter boxes or new digital television sets.

Dr. Matiangi's Speech Continued

There are also challenges posed by the introduction of new business models to take advantage of new market opportunities, maintaining reliable service delivery and quality of service during the transition and a host of other business and operational concerns.

Despite all of these various challenges, the potential benefits are significant. In addition to improved quality of television picture and sound for viewers as well as greater variety in programmes, more efficient use of broadcasting spectrum allows repurposing of frequencies for other uses such as broadband and a variety of new wireless services, or extending internet to rural areas. Digital migration opens up a host of economic activities for the information and communication technology (ICT) sector in the local content and creative industries.

This workshop will focus on the key factors that should be considered when developing and implementing a country's digital television transition plan, including pre- and post- transition technical issues, policy considerations, spectrum management decisions and consumer awareness.

Last week, the Cabinet approved the programme for digital migration. Consequently, the Communications Authority of Kenya, rolled out the digital migration schedule last week. The government is committed to ensure that this process runs smoothly and that Kenya meets the global deadline for digital migration by June 17th next year.

I wish to assure all broadcasters and other stakeholders in the post-digital migration era our approach, as usual will continue to be consultative and inclusive. I wish to appeal to all stakeholders, to cooperate with the Communications Authority of Kenya to ensure that the digital migration goes on without a hitch. The government of Kenya, on its part will provide whatever support that is required to ensure that we start the ball rolling in digital migration as per the timelines announced by the Communications Authority of Kenya on 28th November 2014.

Over the next two days, you will have the opportunity t o interact with experts from countries that have already gone through the transition and it is my hope that we can learn from their mistakes, identify best practices that have emerged that may be applicable to our markets and that this experience will enable us to have a more successful transition to digital broadcasting and take advantage of what the future holds.

Once again, I welcome you all, and wish you a very successful workshop. Thank you.

Figure 6: Participants following the proceedings

Figure 7: Wallace Kantai, Dorothy Ghettuba and Meredith Beal

PRESENTATION 1: BACKGROUND OF DIGITAL TV MIGRATION IN AFRICA BY KEZIAS MWALE

Figure 8: The ATU's Kezias Mwale provides history and perspective

Mwale's presentation covered four main areas: General Overview; The Relevant Issues; ATU Facilitation Strategy; and Recommendations as captured below:

1. GENERAL OVERVIEW

He started his presentation by giving a general overview of the background of Digital TV migration through the following pictorial presentation, which he referred to as **Building blocks of Digital Terrestrial Television (DTT) migration.**
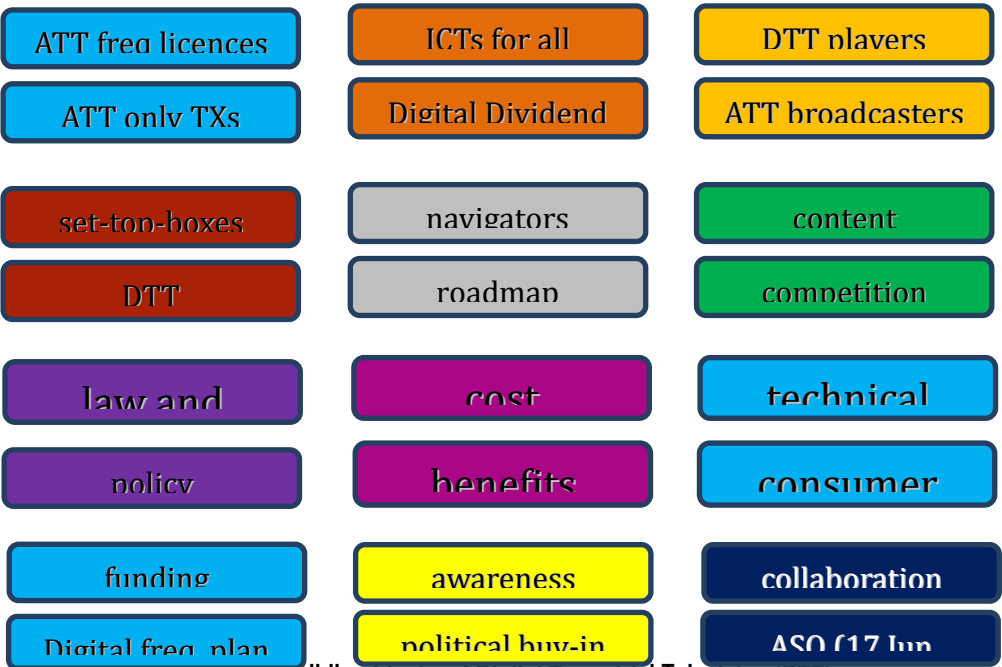

Figure 9: Digital Building blocks of Digital Terrestrial Television (DTT)

From the above diagram, he made the following observations regarding digital migration status in Africa and a number of selected African countries:

i.   Africa has a heightened commitment to the transition with assured political-will;

ii.   Mauritania, Mauritius and Tanzania have completed or have scored good ASO progress – a common factor of these countries is early commencement of process;

iii. While all countries have different challenges, funding remains the most common challenge;

iv.   Frequency modification in response to WRC-12 Resolution 232 (DD2) had slowed down the momentum significantly. The modification was essential for DD has now concluded;

v.   According to GE06 (Article 12) there are about 30 countries who have the legal right to ASO in VHF band until 17 Jun 2020;

vi.   ASO by 17 June 2015 in the whole UHF band may not be possible. However, ASO in the DD band (694 – 862MHz) is possible and should rightfully be the focus;

vii. Stakeholder engagement is crucial to avoid legal actions

2. THE RELEVANT ISSUES

The second part Kezias' presentation covered the following areas: digital frequency plan (the Ge06 Plan), country DTT transition framework (institutional and legal), funding, set-top-box, freed-up spectrum (digital dividend), competition, ATT issues (Infrastructure, operators, 'disposal'), content and collaboration.

a. Digital Frequency Plan

On frequency plan for DTT, he made the following observations:

i.   Modifications in view of ITU Resolution 232 concluded in Jul 2013

ii. Establishment of a clear frequency migration plan (mapping) between ATT and DTT frequency usage during and after transition

iii. Consideration be given to use Channels 11 and 12 reserved for T-DAB in the transition period

iv. Use of Gap Fillers localized SFN for areas where frequencies are not adequate e.g. Dar-es-salaam (TZA), Maputo (MOZ), Kitwe (ZMB)

v.   Focus should to clear the DD band i.e. Switch off ATT in the freq range 694 – 862MHz

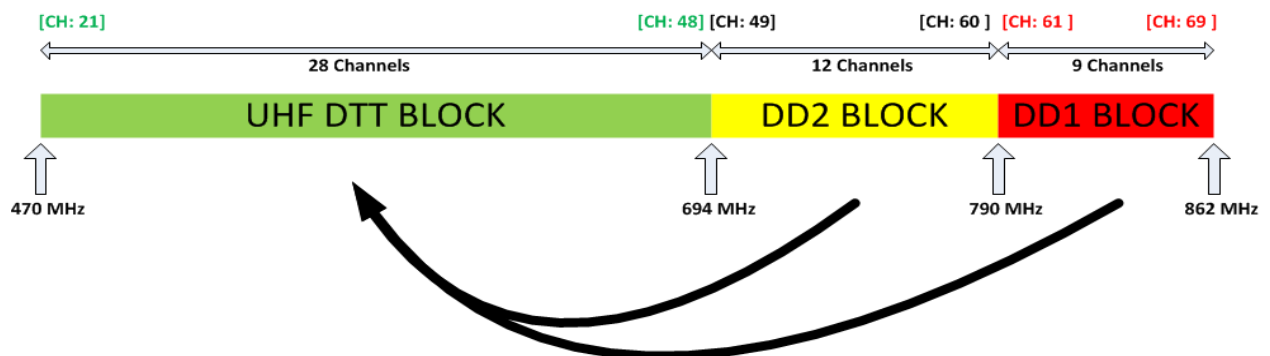He used the following diagram to explain the above observations:

Figure 10: Country DDT Transmission Framework

b. Country DTT Transition Framework

Regarding **country DTT transition framework**, he stressed on the greater need for Stakeholder consultation in particular the ATT operators and the public so as to avoid legal actions. Some of the key issues he focused on in relation to this were: Institutional set-up such as the national task force/team, ASO timelines, DTT infrastructure and multiplex operators, ATT licences ,Standards and set-top-boxes and Content aspects like public content such as parliament TV. Additionally, he said that the roadmap and actions should pass the reasonableness test by striking a balance between the various stakeholder needs.

c. Funding Mechanisms

Further, Kezias' elaborated on appropriate **funding mechanisms** for digital migration. These included traditional funding models such as Internal – government budget, External sources including loans and grants, Public Private Partnership (PPPs) and Proceeds of digital dividend spectrum licensing. He gave the cases of United Kingdom (UK) where the potential for DD1 and DD2 would be USD 4,000m. Another source of funding would be setting up of a Universal service/access fund.

He concluded that DD spectrum proceeds are able to fund DTT migration. He cited examples of DDT costs in several African countries presented in USD millions as shown below:

14

*Algeria (50); Benin (10); Egypt (19); Ghana (118); Nigeria (200); Senegal (100) and South Africa (1000) [**Source: AUC Nov 2012]***

d. DTT standard and set-top-box

On **DTT standard and set-top-box,** he presented the following key considerations regarding standard adoption:

i. Harmonization with Africa and regional adopted standard: (*DVB-T/T2/Tx with Mpeg-4 compression*)

ii. Economies of scale for equipment and long term serviceability

iii. Interoperability on the border areas

Key considerations for the set-top-boxes were:

i. **Receive both SH and HD** *to avoid additional cost for HD STBs at a later time*

ii. **Incorporate mechanism for return path** *for enablement of e-services*

iii. **Common interface conditional access** *for interoperability and competition reasons*

e. Digital Dividend

On digital dividend (Freed-up spectrum), the following were the major considerations:

i. Primary focus of the migration should be digital dividend

ii. Migration to focus on removing analogue transmitters in

    a. *The band 694 – 862 MHz followed by the band 470 – 694 MHz*

    b. *The band 174 – 230 MHz to be considered last as it has least implications*

iii. The potential of DD to aid the Migration should be explored

iv. Harmonization and common approach to DD utilization crucial

    a. *Making the band 694 – 862 i.e. DD1 and DD2 available after WRC-15*

    b. *Common channeling and other technical usage parameters such as. OOBE*

v. Licensing regulations to ensure that maximum benefit is realized

    a. *Best license fee value via auctions*

    b. *Best use by setting clear and enforceable QoS and roll-out-obligations*

    c. *The 700MHz band is best opportunity to push the ICTs for all agenda*

f. Competition

Kezias noted the following key issues on competition:

i. Separation between Infrastructure and Content operation – He reiterated that single identity should be avoided and providers should do both Infrastructure and Content

ii. Between 2 to 3 Mux operators *with no monopoly*

iii. Content operators to have equitable access to MUX services

iv. Co-location of transmitters

    a. *Sharing of shelter/power/feed/mast infrastructure*

    b. *One antenna (VHF/UHF: 174 – 694MHz) and pointed in one direction*

v. Common interface STBs for both free-to-air and conditional access – *single STB to receive all signals*

vi. Same terms of access to essential content, *e.g. public programmes and national events*

g. Content

i. Content is a clear challenge

ii. There is need to designate regional content as local content

    a. Promotion of regional integration

    b. Promotion of regional tourism

    c. Promotion of cultures

    d. Promotion of others.

h. Collaboration

i. The presenter observed that collaboration is crucial

    a. Some regions have done extremely well

ii. Boarder frequency utilization in particular for ATT will be crucial after 17 June 2015

    a. The Ge06 Plan renders use of ATT at 'own peril' after 17 Jun 2015 (not internationally recognized – no protection or no interference to DTT of other countries)

    b. Therefore, there is need to agree beforehand how the SADC region shall deal with the ATT after 17 June 2015

3. ATU FACILITATION STRATEGIES

This part covered: past activities, future activities and DTT facilitation areas.

Past Activities

He presented an overview of past ATU facilitation activities. These included:

i. Three frequency coordination workshops/meetings held in Bamako, Kampala and Nairobi. The outcomes of these workshops were: Revised DTT frequency plan via GE06 Modification and Official process is now underway

ii. Various regional meetings and workshops

iii. Two Digital Migration and Spectrum Policy Summits in Nairobi and Accra. The outcomes

    a. Clear roadmap and recommendations

    b. Adopted the Second Digital Dividend and Standard

c. Noted that generally the migration is behind schedule

d. Called for a 3rd DTT Migration and Spectrum Summit in Qtr 4 of 2013 (now moved to Q2 2014 due to clash with ITU Telecomm)

4. RECOMMENDATIONS AND CONCLUSION

Key Recommendations

In order to achieve the aspirations of digital migration, Mwale offered the following recommendations:

i. Complete the official process for GE06 frequency modification

ii. Focus should be placed on realizing the DD by commencing migration in the band 694 – 862 MHz;

iii. Consideration be given to using the proceeds from DD spectrum licensing to fund the migration (Universal service/access fund may also be considered);

iv. Consideration be given to have the STBs process both SD and HD reception

v. Common Interface STB for competition and incorporate return-path feature for *enablement* of e-services

vi. Consider classifying regional content as local content

vii. Establishment of a clear frequency migration plan (mapping) between ATT and DTT frequency usage during and after transition

viii. Consideration be given to use Channels 11 and 12 reserved for T-DAB in the transition period

ix. Use of GAP FILLERS (miniature SFN) for areas where frequencies are not adequate e.g. Dar-es-salaam (TZA), Maputo (MOZ), Kitwe (ZMB)

x. Co-location of transmitters and use of a single VHF/UHF receiver antenna

xi. Consideration be given to have a framework of dealing with ATT beyond the GE06 migration deadlines

Conclusion

Concluding his presentation, Mwale made the following observations:

i. While progress may be slow but commitment is remarkable

ii. The migration shall surely take place – there is need to focus on the realizing the benefit – such as content and viewer experience

iii. The digital transition remains the best opportunity for transforming terrestrial TV

iv. Digital TV gives new hope for terrestrial TV from being swapped by internet and other forms of video delivery

v. Regional and continental collaboration remains crucial

vi. Migration is more than technical project and affects many sectors hence political-will and stakeholder consultation remains crucial

17

PLENARY DISCUSSIONS

After completing his presentation, there was a brief session of questions and discussions based on Mwale's presentation. The following are some of the issues that emerged from these plenary deliberations:

✓ **One participant wanted to know the number of countries that would make the deadline and whether there was any punishment for non-compliance.**

Mwale noted that only South Africa and Namibia had announced in January 2014 that they were not likely to beat the transition deadline. The workshop heard that there are no punitive measures for non-conformance. He added that dialogue should be encouraged between countries where signals of one country interfere with the other. He informed members that there are lengthy diplomatic procedures under the ITU protocols to solve these problems.

✓ **How ready is ITU?**

Russia, Europe, Scandinavian countries, Iran and Africa are the scope of the migration. Hardcore Asia (Japan) etc do not need terrestrial TV. They have many other forms. Technical issues have technical answers. A number of summits have been organized to continue awareness.

✓ **What was the major challenge?**

Procrastination. Awareness and appreciation of the complexity of the issue was a major challenge as governments thought migration was a monthly affair. Funding was also a major challenge since governments have competing needs.

✓ **Additional input from Kenya**

In Kenya, the main challenge was money for infrastructure development and awareness. The analogue broadcasters were reluctant to go digital but this is changing. In Kenya, digital practitioners that interfere with others will be shut down. Analogue platforms will not be allowed to complain of any interference from the digital platforms. However, the digital move has come up with dedicated programming such as vernacular channels, soap operas, cartoons, news, African movies etc.

Summary Bio: Kezias Mwale, Radio Spectrum and Program Coordinator for the African Telecommunications Union, is a Zambian national who holds a Bachelor of Engineering in Electronics & Telecommunications Engineering with Merit from the University of Zambia, and a Master's degree in Science from the University of Kent, UK. Before joining the ATU he worked his at the Zambia Information and Communications Technology Authority (ZICTA).

Mwale can be reached on: **k.mwale@atu-uat.org** and **www.atu-uat.org**.

Figure 11: This is my point! A delegate making a contribution

Figure 12: Aisha Dachi, Head of TBC Taifa, Tanzania

There were three case studies under this topic. These were: Tanzania – by Joseph Kabanga (Tanzania Broadcasting Corporation), USA—by Robert Lee (National Association of Broadcasters) and France – by Juliette Vivier (French Embassy).

Case Study 1: by Joseph Kabanga (Tanzania Broadcasting Corporation)

Figure 13: Joseph Kabanga Making his Presentation

About Tanzania Broadcasting Corporation

Joseph Kabanga started his presentation by sharing a brief introduction about Tanzania Broadcasting Corporation, which is a public broadcaster in Tanzania with two TV channels i.e. TBC1 and TBC2 and three Radio Stations, i.e. TBC TAIFA, TBC FM, TBC International. All three radio stations are available online through www.tbc.go.tz; website

Kabanga then presented the following road map to digital migration as adopted in the Tanzania case:
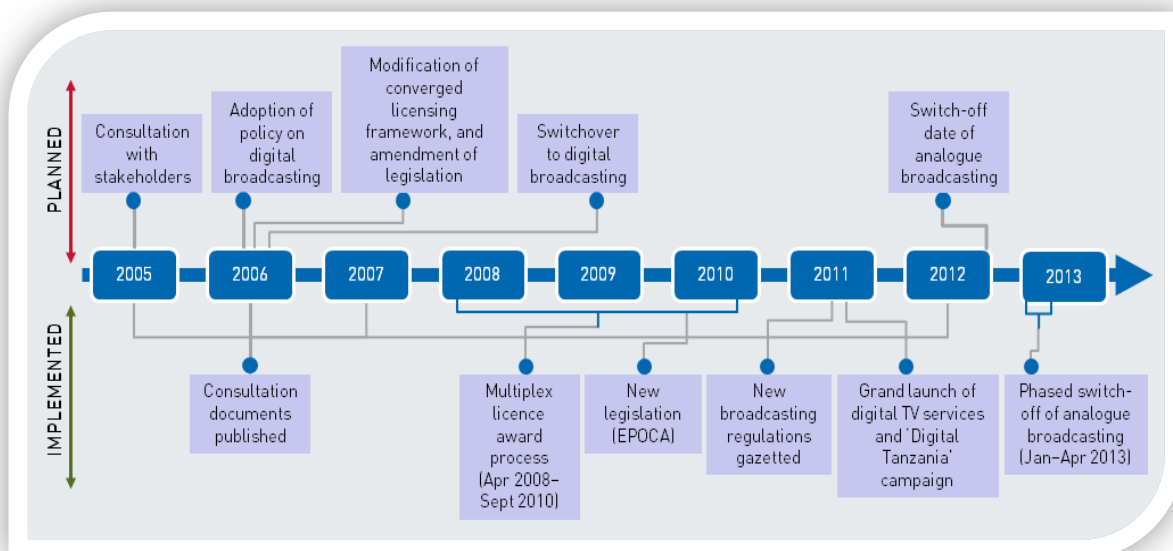
Figure 14: Tanzania Digital Migration Road Map

Kabanga informed the workshop that the major criteria for Digital Switch-over (DSO) was its coverage to be greater than or equal to the analogue coverage. Up to this moment, Tanzania Broadcasting Corporation has switched off analogue transmitters in the following regions: Dar es Salaam, Kilimanjaro, Tanga, Arusha, Morogoro, Dodoma, Tabora, Singida, Mwanza, Mara, Kagera, Mbeya and Zanzibar.

Figure 15: My point is...a participant from Nigeria sharing his experiences at the workshop

Figure 16: TBC Digital Migration
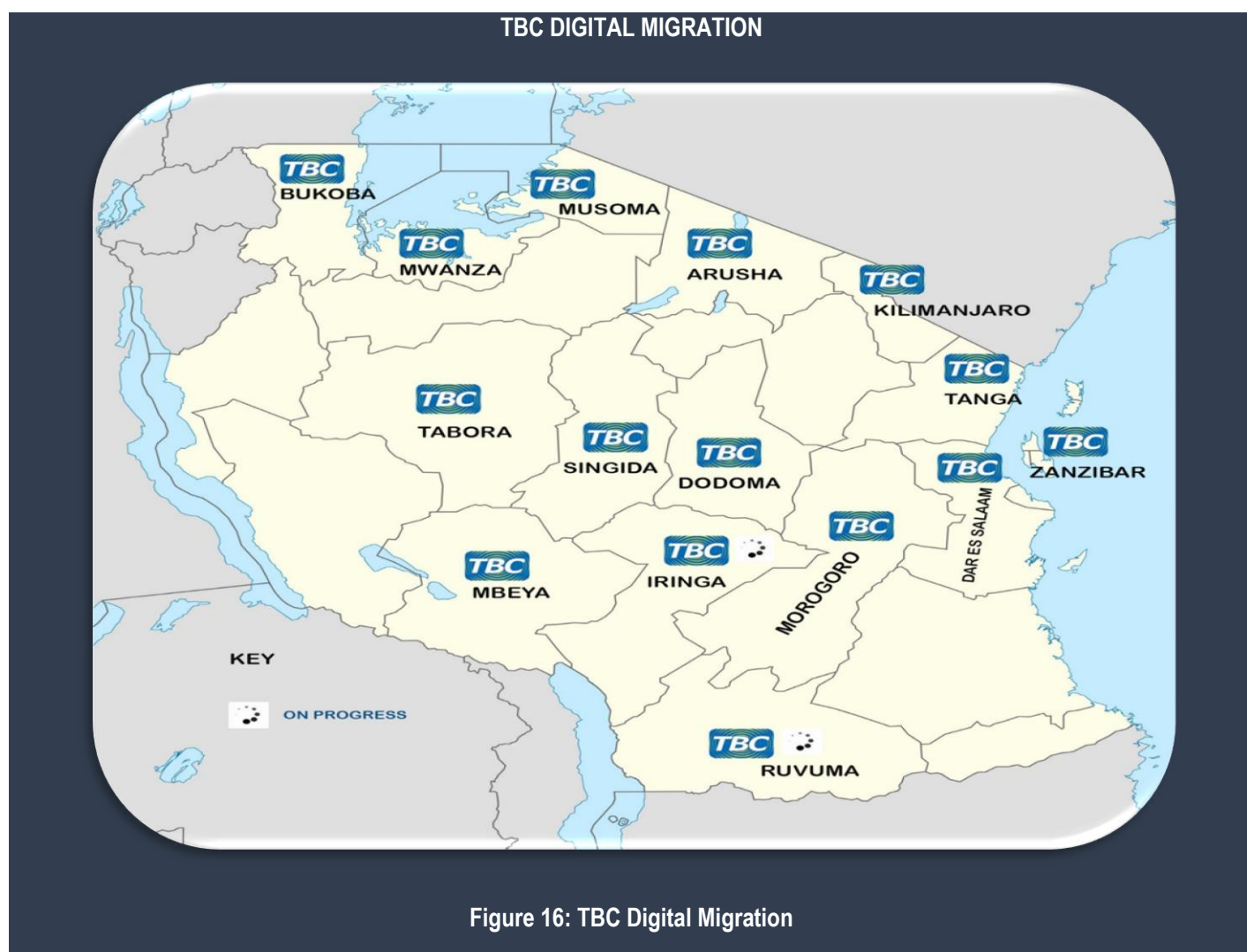
CHALLENGES FACING TBC IN DIGITAL MIGRATION PROCESS

The Tanzanian representative explained that his country faces the following challenges as it migrates to the digital platform:

i. Less coverage in some areas where geographical location is hard e.g. Tanga TBC is still transmitting digital and analogue signals.

ii. Cost implications to buy set-top-Boxes

iii. Too much compression of signals, which leads to signal inequality.

iv. Distribution of content made by multiplex.

BENEFITS

In spite of the challenges, Kabanga reported that his country had reported the following benefits in regard to digital migration:

i. Technology deployment through Star Times.

ii. Increases of coverage from 23% to 26% according to TCRA.

iii. Increases of quality in signal

22

iv.   Best choice for more channels.

Kabanga concluded that through partnership with Multiplex, Government commitment, public involvement, funds allocation and technology deployment, TBC expects to migrate smoothly to digital platform.

Joseph Kabanga is the acting ICT Manager at Tanzania Broadcasting Corporation (TBC) since August of 2013. He is responsible for ICT services operations, ensuring effective management of the center's IT communications audio and visual and developing ICT strategy for the corporation. Kabanga has been with TBC for more than 23 years. His previous position was Head of IT.

Questions and Plenary Discussions on TBC Presentation.

Participant: What are the key messages you send to your audience and stakeholders which encourage them accept digital migration?

TBC: *Mawasialiano kwa maendeleo* which is about linking development through communication such as MPESA and agriculture. People know the source of these changes and why. Programmes for listeners, policy makers etc. Everyone understands that it's time for Tanzania to switch and there is no resistance for migration in Tanzania. Public involvement is very important. It's not just a government agenda. In Tanzania, they see this as an opportunity to watch more channels. TRC (Tanzania Regulatory Authority) was moderating the content to tell the people since most people fear changes. Technical people were available to explain why we are transforming from analogue to digital and making them understand the fate of their current TVs. Most thought they would be made to throw their TVs. A promo was prepared which made them aware that they will not throw their TVs must only needed to buy a set box. This was a one-minute promo giving all necessary information. The changeover was phased starting with Dar es Salaam.

Participants: What costs were involved? What was the cost of moving from 23-26%?

TBC: They covered the whole analogue area, which was their main target and additional 3%. Star Times covered some costs. Consumers also set aside cash to buy set boxes in fear of being switched off. There are enough set boxes for the market.

Participant: How many TV stations are in Tanzania and how much did it cost the government to migrate?

TBC: Without government commitment, nothing would go on. There are 6-7 TV stations. TBC, RTV, Channel 10 etc. These are free to air. Additional channels (up to about 35) are paid for at Tsh 20,000 (Ksh 1,000). Some are being lowered to (Ksh 500). There are about four private multiplexers. Though there is competition, there is a gain to the community since every provider wants to be viewed.

Participant: How is the signal reaching TBC for further transmission to consumers?

TBC: Through StarTimes channels. There are a number of technicians to support.

Case Study 2: USA by Robert Lee (National Association of Broadcasters Digital TV Transition Committee)
Digital Television Transition in the US

Figure 17: Robert Lee shares his vast experience in broadcasting

According to Lee, 96.7% of households in the U.S. have television sets. This translates into 114,200,000 homes with television in the country. He also revealed that most U.S.A. households have three or more sets. He said that the U.S may have well over 500,000,000 TV sets.

Why Bother?

US NTSC television becoming an analog island in a digital world

 Lee presented the following statistics regarding Digital Migration in the U.S.A

   i.   Coast-to-coast 1,763 full-power VHF and UHF stations

   ii.   14,285 including Class A, low powers And translators

   iii.   14,285 Transmitters, antennas and infrastructure

   iv.   14,285Transmitters, antennas and infrastructure declared obsolete

He reminded the participants of a common saying in his country that says: 'In America, Everything is Political'

He said that major issues regarding Digital Migration in the U.S.A. include

   i.   How to phase in the transition, keeping NTSC running while launching ATSC digital.

   ii.   Limited spectrum available

24

      a. 6 mHz capacity each channel

      b. Channels 2-4 @ 54-72 mHz

      c. Channels 5-6 @ 76-88 mHz

      d. Channels 7-13 @ 174-216 mHz

      e. Channels 14-83 @ 470-890 mHz

   iii. The government wants to recapture some of the existing channels

The Solution

He proposed the following solutions to the challenges and issues:

- Use computer technology to study moving every existing station to a new, different channel with approximate coverage replication and minimal interference.

- Require ATSC launch by a date certain

- Require NTSC shutdown by a later date certain.

- Government will offer coupon for purchase of a digital-to-analog converter box; one to a household, you can buy additional boxes.

- Permit cable and satellite providers to continue for the time being to provide analog version of the signal.

The Results

- DTV broadcasts began in 1998

- Analog shut-down "mostly" done but with numerous unresolved problems at full-power and other locations

- Diverse, decentralized ownership results in range of uses: HDTV, multicasting, mobile?

- Pace of technology is breathtaking

Robert G. Lee is retired President and GM of WDBJ TV, the CBS affiliate in Roanoke, VA, USA, from 1989 until his retirement in 2007. Lee also was chairman of the CBS Television Network Affiliates Association. In addition, he served on the Television Board of Directors of the National Association of Broadcasters (NAB), the industry's leading trade organization. He was a key player in the association's Digital Transition Task Force and its Legislative Liaison

Case Study 3: Digital Switchover & DTT Rollout in France by Juliette Vivier (French Embassy)

Figure 18: Juliette Vivier hammering a point home

A Bit of History of Television in France

Juliette Vivier begun her presentation by first taking the participants through the journey of France TV history. She said that television was introduced in France in 1931, making the country one of the first countries in the world to broadcast television programs. Color television was introduced in October 1967 making it one of the first European countries to get color television.

At the beginning

Despite being in advance regarding television broadcast, France was late in its launch of DTT services compared to some neighboring countries (for example, Germany or Switzerland started their DTT launch in 2002 and 2001 and completed their ASO by 2010.) The first services started broadcasting in 2005. Its roll-out brought immediate value for the French consumer: more channels with better quality pictures, at an affordable price (only the cost of an MPEG-2 set-top box) and trouble free everyday use. This technological breakthrough had however been in preparation for many years. The first call for tender organized by the "Conseil Supérieur de l'Audiovisuel (CSA)", the French independent broadcasting regulator took place in 2001. This followed many years of international discussions at the technical level, and intense regulatory and legal thinking.

DTT take-up 2005-2007

At the end of 2007, DTT was available to 85% of the population of France, from the 113 main transmitting sites. The roll-out of DTT has been progressive and organized in six phases. For the regulator, dealing with the huge spectrum re-engineering – and protecting the analogue terrestrial broadcasting networks from interference caused by the digital transmissions – has been a huge challenge. The goal has been to deploy the six new national digital networks in addition to the existing national 2 analogue ones. To cope with the workload, the technical and planning capacity of the CSA has been strongly increased. Confidential document - East Africa Digital Migration Workshop – French embassy in Nairobi / Audiovisual bureau – Dec 2014
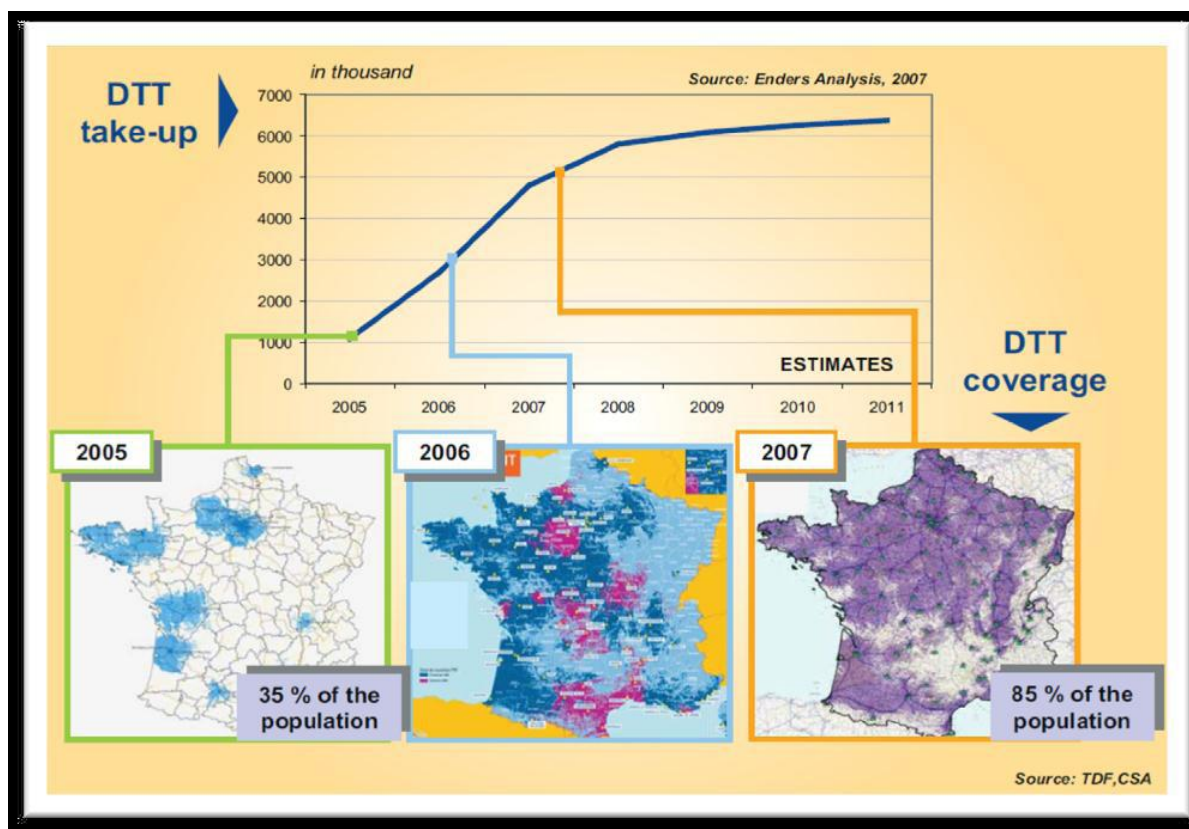
26

Figure 19: French DDT Coverage (2007)

However, the latest audiovisual bill, voted on the 5th March 2007, implied that the broadcasters should further extend the DTT coverage to at least 95% of the population for every "analogue incumbent channel". In order to comply with this obligation, the CSA has paved the way for this extension by detailed obligations for the broadcasters, in order to prevent any digital divide. These complementary obligations aimed at leveling the coverage of each French administrative sub-region, so that DTT coverage in geographically difficult regions with a low density of population keep in line with those benefiting from an easy coverage over large urban areas.

Those two obligations, national and "sub-regional" coverage, represented an important workload in terms of the transmitters to switch on. During this period, it was considered that more than 1500 new transmitters will be needed to match that coverage. Finally, for the last 5% share of the population, satellite coverage was recommended. French law required that a satellite bouquet, accessible without paying subscription fees or having to rent a terminal, should be put into operation.

These three coverage extensions, although financially demanding for the broadcasters and implying an important planning workload, were conditional to the success of the DTT platform in the future. It surely drove the DTT take-up and also increased the popular demand for new services, such as HDTV.

An unusual regulatory framework for the main television broadcasting platform

- The French regulatory framework for DTT is quite specific among the European member states and pertains to the French "exception culturelle."

- On the one hand, the selection procedure applied and still applies to each TV channel editor, to whom the resource is allocated, and not to the platform, multiplex or technical operators. The goal behind this direct selection of each DTT broadcaster is to preserve the political, social and cultural pluralism of the French audiovisual landscape.

27

- On the other hand, the selection was and is achieved through a "beauty contest" and leads to no financial charge for spectrum usage. This aimed at maintaining high standards of content quality for the selected channels.

- Undeniably, the selection of the broadcasters and the free allocation of spectrum enabled the regulator to be more demanding regarding the applicants' broadcasting obligation and contribution to the production of European or French programs (60% of the channel's content).

- On the technical side, the broadcasting and compression standards were defined through government decisions. Spectrum planning was and still is under the responsibility of the CSA, in partnership with the "Agence Nationale des Fréquences (ANFr)", the French spectrum management agency that is responsible for coordination with neighboring countries.

- In 2007, terrestrial TV accounted for 57% of French television viewing and 18% of that was digital viewing. These figures showed that terrestrial was the main television platform in France, which explained why such attention was being provided by the regulator to the diversity and quality of the terrestrial programming.

DTT multiplexes

In France, as in the majority of the European countries, six digital multiplexes have been planned and coordinated, according to the Chester 97 agreement, from R1 to R6. Selecting a broadcasting modulation scheme implies, on the one hand, a trade-off between the robustness of the transmissions and the cost of the infrastructure and, on the other hand, the data rate to be used. The decision taken in France was to maximize the number of channels while keeping a fair image quality. It was foreseen that the 113 main TV transmitters, available at that period, would provide DTT coverage to 85% of the population.

The Switchover Roadmap 2009 - 2011

i. On 22 December 2008, French Prime Minister approved the schedule of the digital switch over till the complete analog switch-off.
ii. On 22 July 2009, French Prime Minister revised the final schedule par region, starting the ASO in the north regions the 18 October 2009.
iii. Between 2009 and 2010, half north of the country (except Paris, Picardie and Normandie) completed their ASO.
iv. In February 2011, the ASO started the half South of France + Dom-Tom
v. Analog broadcasts were 100% switched off on 30 November 2011 on all platforms, whether it is terrestrial, satellite or cable. Overseas departments and territories (such as French Guiana and Martinique) also terminated all analog broadcasts on the same day

Communication campaigns

Communication was a key factor for a successful transition. The transition to digital was considered as a major national cause, requiring efforts from all stakeholders. The campaigns targeted various audiences and the message was adapted to each of them.

Target Audience

Vivier identified five audiences who were targeted for the French communication campaign and they include:

Elected representatives & other local leaders
i. Professionals (manufacturers, antenna installers, vendors, etc.)
ii. Managers of collecting housing (hotels, property managers, administrations, etc.)
iii. Media
iv. General public

For the general public, the campaign was orchestrated in two stages: Raising awareness and educate people about the transition.

All the communication campaigns helped achieve considerable savings. By implementing each action over a time framework that effectively complements each other, it helped regulator and stakeholders to keep within the budget.

HD Rollout 2012-2015

i.   The French media authority CSA launched in December 2012 the official roadmap for the rollout of the two new HD multiplexes R7 and R8, introducing nationwide the extension of the new terrestrial HD services.

ii. The six new HD channels came on air on December 25, 2012 and were available to around 25% of the population in mainland France. At the same time, all other TV platforms (cable, satellite DTH and IPV) were also required to carry the new HD channels.

iii. The rollout is taking place in 13 phases and will be completed in June 2015, when 97% of the population will be able to receive the new HD channels.

iv. Last September 2014, France completed the 10th phase of the 13, providing with the six channels to between 80-85% of the population. In addition, the French government decided to add France 24 (the French international news channel) within the package of the free HD DTT channels and the channel is now available in Paris and environs.

v.   In parallel, TDF, the French transmission company, launched the first end-to-end HbbTV platform in 2012, enabling to build a large diversity of services and business models, ranging from free to pay including ad-based for services such as interactive advertising, event channels, video-on-demand, catch-up TV, voting and more. Confidential document - East Africa Digital Migration Workshop – French embassy in Nairobi / Audiovisual bureau – Dec 2014

DTT Current Situation since the Rollout

DTT / DTH & Other broadcasting technologies coverage & accessibility

i.   To date, the French DTT network covers 70% of the territory. The FTA DTT channels are available to almost 97% of the entire French population through 1,626 transmitters.

ii. 32 national channels are brought together through 8 multiplexes:

iii. 7 national public free channels + France24 in Paris & environs.

iv. 17 national private free channels,

v.   8 national private pay channels.

All DTT channels are also available for reception by satellite, broadcast from the Astra satellites at 19.2° east as TNT SAT and from Atlantic Bird 3 as FRANSAT (Eutelsat). The satellite covers 100% of the territory. Some of the channels are encrypted but there is no subscription charge, and the public channels are free-to-air on Atlantic Bird 3.

i.   During the 2010 FIFA World Cup games, the public channels France 2 and France 3 were encrypted to prevent watching the matches elsewhere than in France.

ii. The cable network is currently available to 38% of the population.

iii. The ADSL is available to 100% of the householders, but there are still a few areas that can't access the ADSL, as some phone lines are not eligible to ADSL.

iv. Also, most internet service providers in France now offer digital television (IPTV) packages through triple-play set-top box.

v.   100% of the French households can access the DTT channels bouquet either through the DTT network, or by satellite, cable or ADSL.

Digital TV penetration (figures 2012)

i.   In 2012, Digital penetration among French viewers reached 99.3% with a majority opting for DTT reception.

ii. According to the latest research from the regulator CSA, 99.3% have at least one digital receiver in the home. 98.4% of the primary TV sets in the home are digital, while 82% of secondary sets are digital.

iii. Digital terrestrial reception is the most popular with 61% of all viewers, followed by IPTV, which has a 30.8% penetration.

iv. Satellite DTH is the third most popular mode of reception, with a total of 22.5% homes. Satellite reception without a subscription represents 10%, while 8.3% subscribe to a pay platform, with 4.2% having both.

v.   Digital cable comes in last with just 8% of all homes.

Costs

In France, the whole process of the transition took 6 years, from 2005 to 2011 and cost approx. €308 million to the French government. In return, it appears that the DTT rollout generates a revenue of approx. €2.6 billion, mainly thanks to the licenses provided.

DTT vs the other broadcasting means & TV screen vs the other devices

Digital terrestrial reception is still dominant in France, but the number of people using DTT is slowly going down, according to media authority CSA.
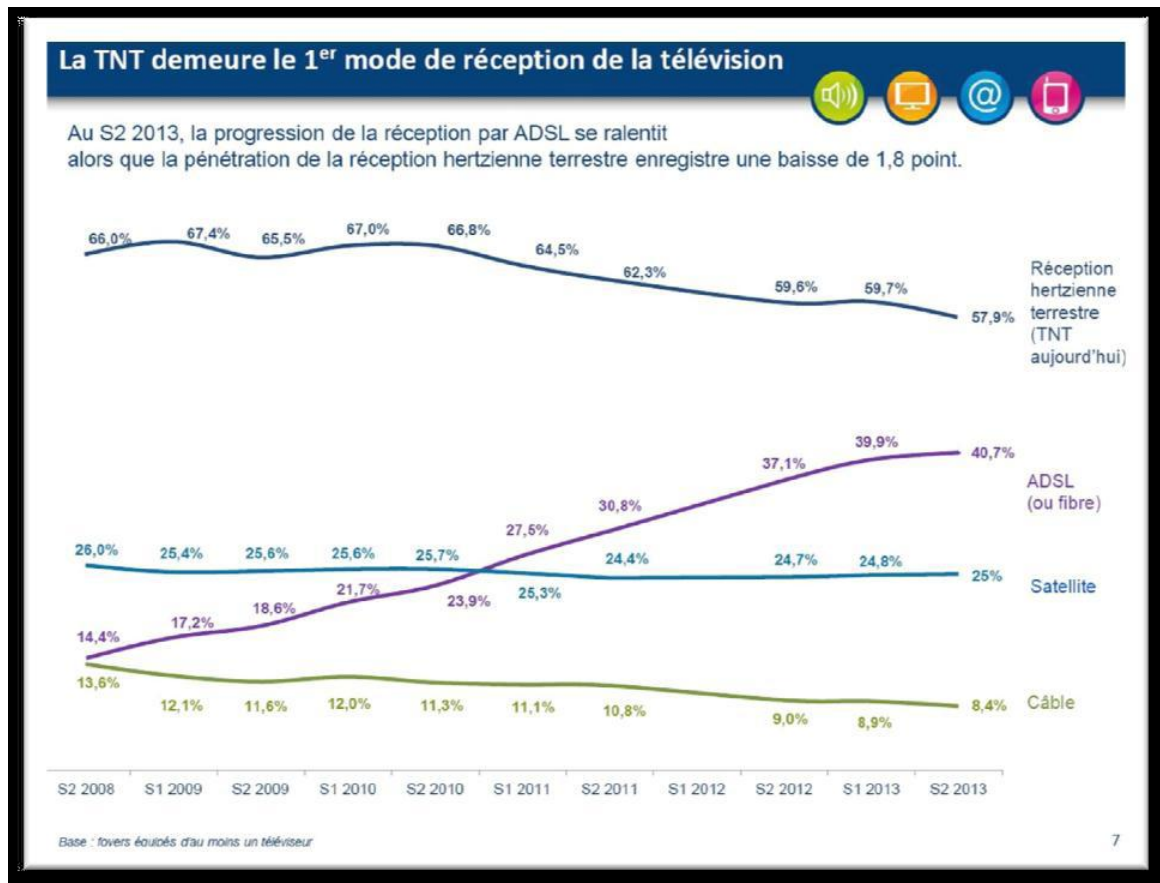

Figure 20: Digital Terrestrial Reception in France, 2013

i.   At the end of 2013, 57.9% of viewers were watching DTT (-1.8%) and for 33.3% of viewers DTT was the only means of reception (down 0.5%).

ii. 49.1% of viewers are watching via IPTV or cable (+0.3%). Satellite DTH reception was slightly up (+0.2). 82.8% of viewers now have an HD set.

iii. In terms of reception equipment, 97.6% of viewers have a TV set, down 0.5%. More people are now using their computer to watch TV (78.8% of viewers, +1.1%), tablets (28.7%, +7.2%) or smart phones (55.9%, +4%).
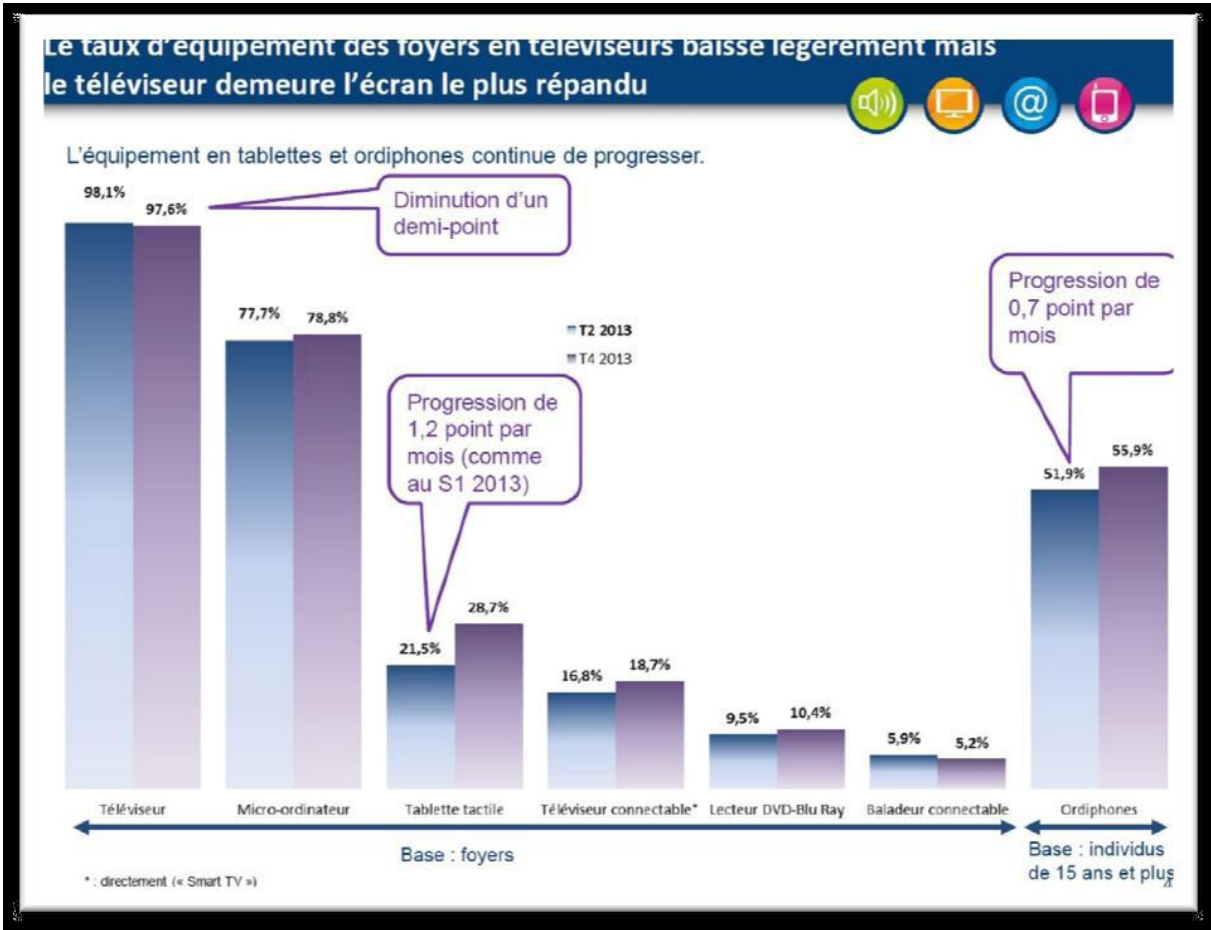
30

Figure 21: Viewers watching DDT in France
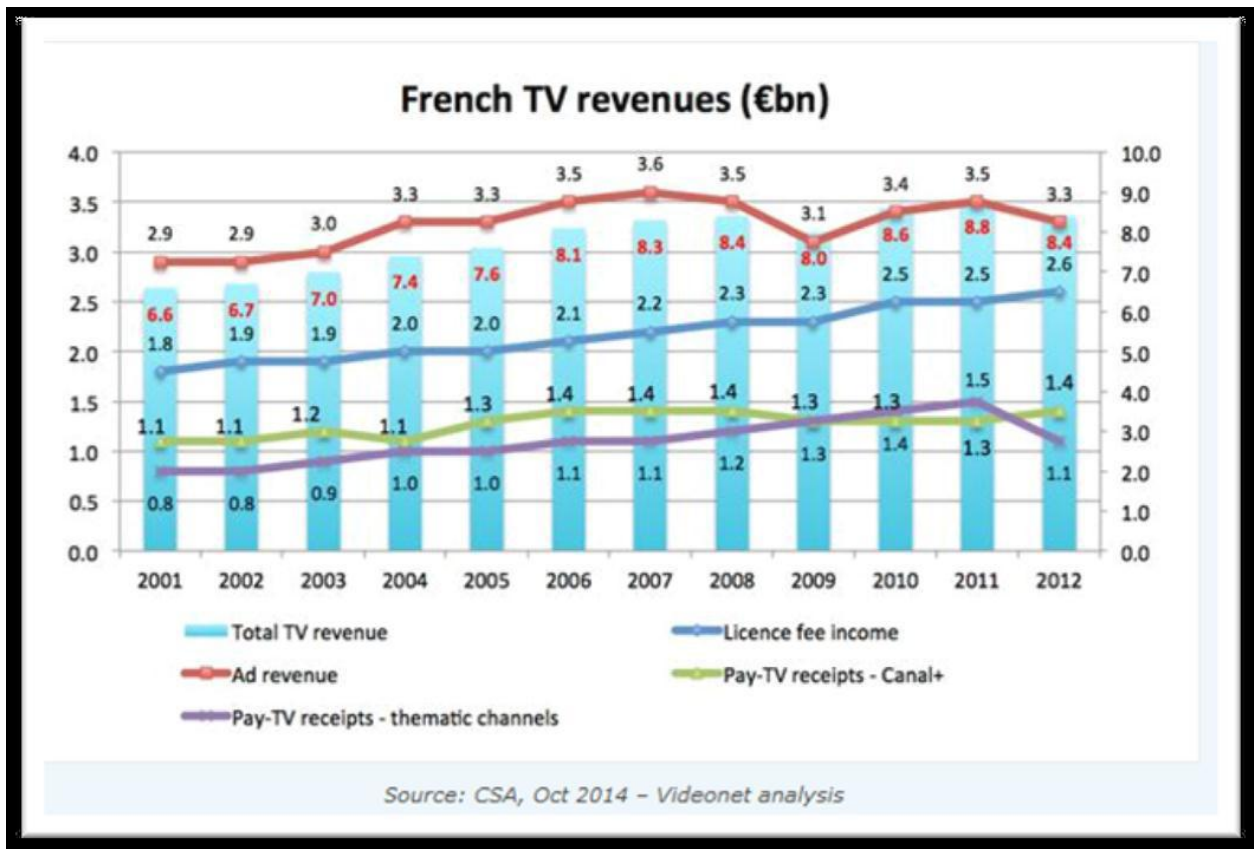
TV revenue – Pay TVs are going down

Figure 22: French TV Revenues 2001-2012

i. French audiovisual regulator, the CSA, released some data on TV revenues last November that show current developments in the French pay-TV sector – notably that portion of it distributed via DTT.

ii. Over the summer 2014, there has been a rash of pay-DTT operators attempting to hand back their pay-TV licenses to the CSA in exchange for free-to-air ones.

iii. Commercial broadcaster TF1 wanted its news channel LCI ('La Chaîne Info') to switch to FTA, with its commercial rival M6 requesting a similar change for regional channel Paris Première, and was followed by pay-TV operator Canal+, which sought to do the same for its documentary channel Planète+.

iv. All of these requests were flatly turned down by the CSA, despite the fact that the pay-DTT sector in France does appear to be in difficulties: April had already seen the closure of TF6, the pay-DTT channel jointly-owned by TF1 and M6.

The CSA gave three reasons:

i. TV ad revenues are falling, and there is not enough advertising revenue to go round to support three new FTA channels on the DTT platform.

ii. Several FTA DTT channels remained financially 'fragile'. This included the six new HD FTA channels licensed in 2012, which have still not found their feet.

iii. The arrival of these three new FTA channels – in a landscape already populated by 25 others – might not result in a significant increase in TV viewing and could therefore lead them to cannibalize the incumbents' audience share.

i. TV ad revenue only briefly recovered (peaking below its 2007 level in 2011) before falling again. In addition, the CSA says that the figure for 2013 has fallen still further – down from €3.3bn in 2012 to €3.2bn last year.

ii. Nevertheless, the CSA is compelled to treat the fall in thematic pay-TV revenues as exceptional rather than accept that there is any underlying weakness in the sector (since its decision to turn down three separate applications for pay-TV channels to go free-to-air) and it implies that the CSA believes they can survive using a subscription model.

iii.   An alternative explanation is that the various thematic channel closures (and would-be migrations to FTA) have demonstrated that the pay-DTT market in France is no longer a competitive one, being dominated by the Canal+ offer.

Vivier concluded that one entirely stable element in French TV between 2001 and 2012 has been TV license fee revenue, which has increased without a pause from €1.8bn to €2.6bn, even as the French economy tanked.

The presenter identified the following as the main risks to digital migration in her country:

i.   Legal aspects: Implementing new regulation, limitations, lobbying, political issues
ii.   Market: Territory coverage and audience potential, media audience data, audience fragmentation and needs, economy
iii.   Investments: license fees, digital equipment and training, market research, digital content and archives
iv.   Content: acquisition budget (e.g. football) and available choices (country rights, local content)
v.   Competition: more channels, more audiovisual and broadcast technologies available to consumers (broadband internet TV, Mobile, VoD, recorders)
vi.   Technology: Staff training in digital technologies, terrestrial coverage, upgrades, DTT receivers availability and reliability, DTT receivers set up issues
vii.   Time to get ready

She also identified the following main obstacles to digital migration in France:

i.   Terrestrial roll out: COSTS, technical training, maintenance, Set Top Boxes' costs to consumers
ii.   Digital TV bouquet(s): channels' quality, response to consumer needs, pricing, government support
iii.   Reach agreements between key players
iv.   Broadcasters' technology upgrades (TV, radio)
v.   Limited market potential
vi.   More digital TV channels brings more competition (in markets with limited number of analogue TV channels originally)
vii.   Home adoption (distribution issues, offers' pricing, STB reliability) - Home installation (technical issues)
viii.   Public communication to consumers, STB manual
ix.   Risk of monopoly: signal carrier (s), decision makers' control
x.   Access to electricity for consumers
xi.   Recycling of analogue equipment

She also presented the main sources of revenue which digital migration presents. These are:

i.   Increased Government subsidy, tax relief and grants
ii.   Revenues from viewers -licence fees- Pay-TV subscription options
iii.   Advertising and sponsorship
iv.   SMS and mobile phone response messages
v.   Geographical expansion: increased coverage in the home market and selling advertising alongside diaspora-aimed channels in places like the UK, France and the Americas
vi.   Paid VoD for specific in-house programmes
vii.   Monetizing streamed programmes (catch up/replays/webTV) through advertising
viii.   Sell in-house programmes (e.g. news programmes) to other TV channels (e.g. Zuku TV, Mnet)

Juliette Vivier is the Audio Visual Attaché for the East Africa Region at the French Embassy in Nairobi. She has 14 years of experience in the media industry and almost 20 years dedicated to emerging regions and markets, especially Africa and Asia.

33

PRESENTATION 3: ADDRESSING STAFF TRAINING NEEDS BY ROBERT LEE, WDBJ TV-CBS USA

Figure 23: Robert Lee talks about staff training challenges

Lee started the session by revisiting a real estate expression:

The only three things that matter are: (*Location, Location, Location*!). He said that these were changed to become Viewer, Viewer, Viewer!

Four rules for digital transition

He then presented the four rules of Digital Migration and they follow below:

  i.   Your staff knows less than you think they know

  ii.   Your viewer knows less than you think he knows

  iii.   Your advertiser knows less than you think he knows

  iv.   You know less than you think you know

He also asked the following questions:

i. **Your staff**: Take every possible opportunity for training and use any and every resource you can locate

ii. **Your viewer:** What will it take to demonstrate the features and benefits of your new digital service?

iii. **Your advertiser:** Tell me about HDTV, mobile TV, multicasting. I am busy with my own changing business. What do I need to know?

iv. Where can I go, what can I learn to better prepare myself for this change in my world?

v. With each of your constituents there is no buy-in until you can answer: What's in it for me?

He then offered a message of hope, with some examples of the TV companies that survived the migration as shown in the pictures below: These guys survived; so can you! (The guys below)

Figure 24: Survivors of Digital Migration

PRESENTATION 4: THE IMPORTANCE   OF PUBLIC AWARENESS IN DIGITAL MIGRATION

By Meredith Beal (Africa Media Initiative)

Figure 25: Discussing bandwidth differences between analogue and digital

Public Awareness is Everybody's Job

 Beal started his presentation by reminding the participants that public awareness is everybody's job. These include: Government Ministries and Regulators, Television Stations, Set-Top Box Manufacturers, NGOs and Civil Society Organizations and The Public.

One of the most critical elements and among the biggest challenges to implementing a successful migration to digital broadcasting is mounting an effective public awareness campaign. You may have everything ready from a technical standpoint but if the public is not aware or aware but not ready, there can be major problems.

Television station operators and managers have a big stake in a successful public awareness campaign and cannot afford to leave it totally up to government ministries and agencies. If it is not executed well, it is possible that the transition will take place and leave out significant numbers of viewers. If television stations lose viewership that has a direct impact on the bottom line because viewership dictates how much can be charged for commercial airtime.

It actually is in everyone's best interest to participate in awareness building – government ministries and regulators, television stations, set-top box distributors, NGOs and civil society organizations (from the standpoint of ensuring access to and the continued free flow of information to the public, particularly during elections). Even the public themselves should participate. Word of mouth can be a powerful tool as well.

So television station managers should work together along with government regulators and policy makers to coordinate efforts, share economies of scale in reducing costs and getting the most bang for the buck in allocating resources to get the word out.

37

Why?

One of the first questions the public has when they hear that something is changing with their television service is why. "The government's cutting off my TV-- why?" "I have to buy something to keep watching TV – why?"

Communicating the benefits of the migration is one of the best ways to start a campaign. In addition to explaining the benefits for television viewers (clearer picture, better audio, more channels, more choice, etc.), it also is good to show why it is good for the country.

What has your nation decided to do with the "digital dividend?" The digital dividend refers to the spectrum that is recovered after the switchover from analogue to digital. Analogue television broadcasting requires considerable bandwidth (big pipes). Once you've switched to the more efficient digital service, you can broadcast up to 8 or 10 stations within that same bandwidth.

Some countries are using that recovered bandwidth to increase Internet access for the public; some are using it to expand wireless service, some to provide e-government services to the public-- like applying for permits online, requesting government services, citizen engagement, etc. Some are selling the recovered spectrum to generate revenue. Whatever the benefits are, make them clear to the public.

Let them know that the global deadline by treaty is 2015 and that it's not just that your government decided to embark of this initiative and that if it's not done, none of your countries' stations will appear in the international register of channels – meaning NO TV.

Platforms to Use to Engage the Public

The following are some of the public platforms:

    i.   Television and Radio Commercials

    ii.   News Stories on Radio, TV and Print Publications

    iii. Outdoor Advertising on Billboards

    iv. Posters & Fliers on Street Lamps and Poles

    v.   Print Ads in Newspapers and Magazines

    vi. Digital Screens in Supermarkets

    vii. Mobile Digital Screens

    viii. TV and Radio Spots

News Stories – Using a variety of stories that educate from various angles is important. Talk about the choices that viewers have. Communicate goals, target deadlines, dispel myths and indicate where to get more information. Include stakeholders like set-top box manufacturers, broadcasters, regulatory body representative, maybe an average citizen asking questions.

Venues to Reach the Public

    i.   Sporting Events

    ii.   Digital Screens in Supermarkets

    iii. Churches

iv.   Schools

v.   Town Hall Meetings

vi.   Events at Large Retailers

vii.   Sporting events and other activities that draw large crowds provide great opportunities.

viii.   Assemblies at schools can leverage the students to spread the word through their families

ix.   Passing out fliers at churches and mosques

x.   Televised town hall meetings

He proposed that TV stations and set-top box manufacturers plan joint events at large retail locations. Demonstrate the ease of connecting the box. Have an analogue TV there to show how much better the viewing experience is. We should also conduct contests giving away set-top boxes TV & Radio Spots

Public Service Announcements (PSAs):

i.   PSAs should be run in every medium – television, radio, ministry & regulatory body websites, your own TV station website, set-top box distributor & other stakeholder websites

ii.   It generally is most efficient and cost effective for the regulator, broadcast association or media owners association to produce several public service announcements and then make them available to anyone who wants to use them.

iii.   You should take into consideration the various audience profiles you want to address. You also may need to do them in more than one language.

iv.   Clearly communicate the choices the public has. Generally, there are 3 choices. If you want to keep your old TV, you must purchase a set-top converter box. Make sure your viewers know it's a one-time expense. Or you can buy a new TV that's digital ready or you can subscribe to a pay TV service. Because of mixed messages communicated by various stakeholders with differing interests, it's important that the choices are clear. In some markets I've visited, many in the public have the impression that digital migration means they have to subscribe to a pay TV service. That is a result of aggressive marketing by pay TV carriers. So as a terrestrial broadcaster, if you don't commit enough attention and resources to public awareness, you may wind up losing market share.

v.   In some places, the regulators produced PSAs and provided them to TV stations but then the stations expected payment for the airtime. If not enough PSAs are aired because of limited government budgets, it will also hurt the TV station, so you should carefully consider the investment involved. If someone else bears the cost of production, then the station is only investing with their own inventory. If the spots were not provided by someone else then the station would have to bear both the cost of production and airing. It may make sense, depending upon the situation, to create a pool to fund the airtime required and have all of the stakeholders contribute to it.

vi.   Here are a couple of PSAs. The first one I'm showing, courtesy of the Communications Commission of Kenya, illustrates the digital migration using the metaphor of the famous annual migration of the Wildebeest. In this spot, old, black & white analogue TV sets are marching across the savannah and after crossing the river, emerge as new color digital TVs.

vii.   This second spot illustrates that you can't take for granted how easy the set up may be for some consumers.

He showed video clips of a couple of PSAs. The first one was courtesy of the Communications Commission of Kenya that illustrated the digital migration using the metaphor of the famous annual migration of the Wildebeest. In this spot, old, black & white analogue TV sets are marching across the savannah and after crossing the river, emerge as new color digital TVs.

Figure 26: Another PSA

This second spot by the Federal Communications Commission in the United States illustrates that you can't take for granted how easy the set up may be for some consumers. This depicts an elderly woman struggling to understand the "simple" connection instructions for the set-top converter box. http://www.metacafe.com/watch/2399044/funny_side_of_the_digital_t_v_conversion/

In many countries, the regulator will conduct road shows to promote public awareness. These are events where teams travel to various locations throughout the country to conduct demonstrations. They bring equipment to show the superior quality of the viewing experience and the ease of connecting set-top converter boxes. Having station personnel on hand to answer viewers' questions is a great way to engage with audiences and to market the station.

Some stations have offered in-home assistance with setting up the set-top boxes for elderly or disabled customers. If the station has the resources and the process can be managed well, this can be a powerful way to build loyalty.


Figure 26: Telephone Hotlines

The station should staff a hotline to answer questions months before the migration switchover date and should keep it up after the migration until the flow of calls diminishes significantly. No matter how much you and other stakeholders have promoted awareness, there always will be some who wait until the last minute or even later. Make sure the call center has enough lines and is well staffed at switchover time. It can be quite frustrating if viewers can't get through.

Coordinating Test Shutoffs

Nothing gets more people calling in for information than shutting off their signal. Some countries have conducted a coordinated "soft test." Stations in a particular market would coordinate with one another or in conjunction with a regulatory body to select a time when they all would shut down their analogue signals and replace them with a message such as "If you're seeing this message your television is not ready for the digital switchover."

Africa Top 10 Internet Countries 2012 Q2
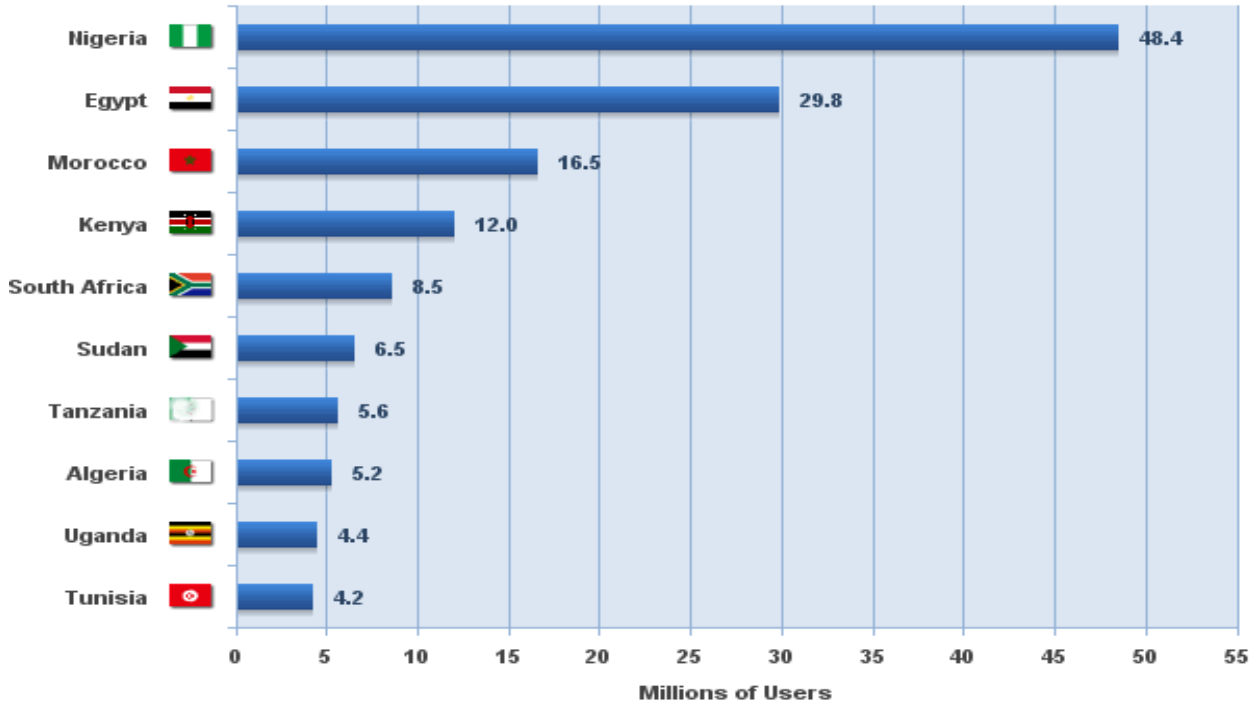
Source: Internet World Stats - www.internetworldstats.com/stats1.htm
167,335,676 Internet Users in Africa estimated for June 30, 2012
Copyright © 2012, Miniwatts Marketing Group

Figure 27: Africa's Top Internet Users

You need to use as many vehicles to get the word out as possible. Internet users tend to be trend setters. The general profile are people between age 15-44, have a mobile phone and some secondary or above education. Your public awareness campaign should definitely include them.

As you can see on the chart of the top 10 in Africa, Nigeria has nearly 50 mill people on the Internet, Egypt nearly 30 mil, Kenya 12, Sudan 6.5, TZ 5.6, Tunisia at a little over 4 mill.
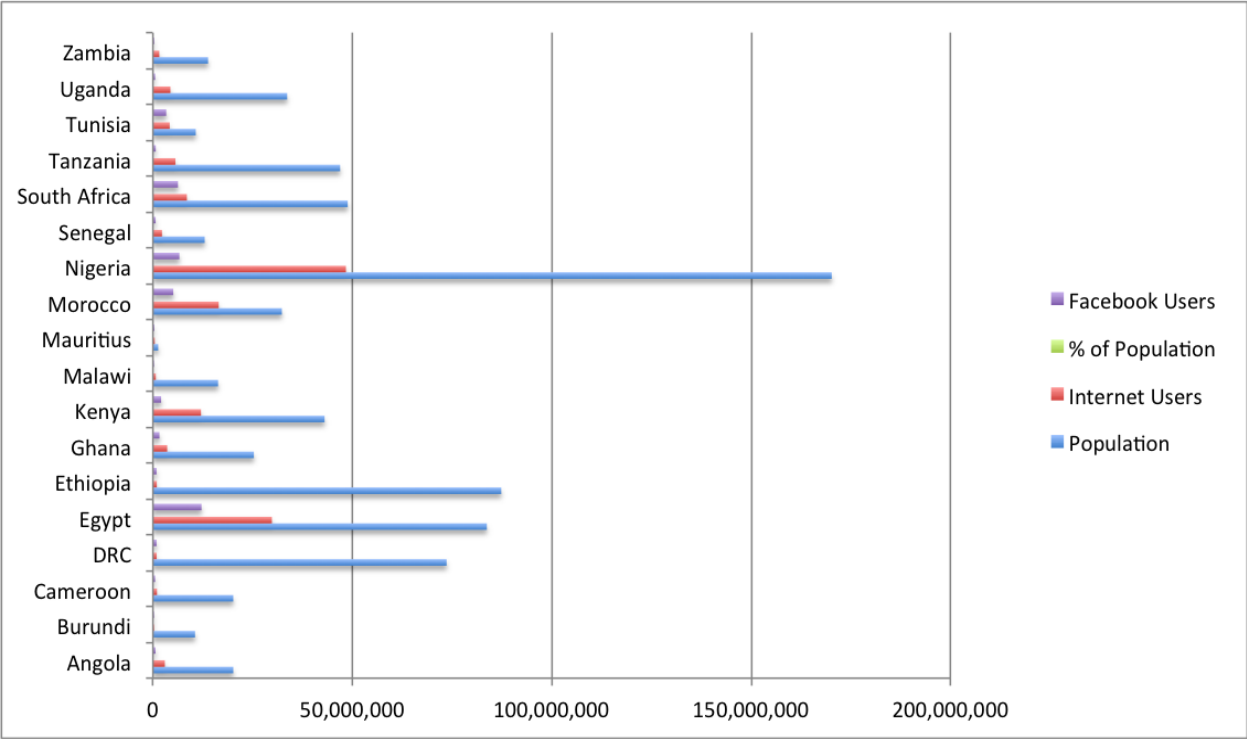
Figure 28: 50 Million Africans are on Facebook

For all of Africa, in general, about 15% of the populations are Internet users. There were a little over 50 million Africans on FaceBook as of last year. As most people in Africa access the Internet for the first time by mobile phone, because Africa's mobile phone market is exploding, that number and percentage will rise quickly.

So all stakeholders should have a FaceBook presence, create a Twitter campaign with regular messaging and increase the frequency at appropriate times relating to your roll-out schedule.

Beal highlighted the reasons the public awareness campaign is so important, outlined appropriate venues to reach target audiences and shared some ideas that have been effective in other implementations. He also wrote a pamphlet published by the African Media Initiative and the International Center for Journalists with tips to help television station managers.

Meredith Beal is a media owner from the United States and a consultant with the African Media Initiative (AMI). He leads a multi-county project to improve business management practices at media organizations in Africa. His activities at AMI include supporting media organizations in Africa with the impeding digital migration. He has written a pamphlet with tips to help TV station managers dealing with the transition.

PRESENTATION 5: IMPORTANCE OF PUBLIC AWARENESS IN DIGITAL MIGRATION by Tom Mzungu (IPSOS Media CT)

Figure 29: Tom Mzungu shares research about public awareness

This presentation was based on a research report by IPSOS Media CT on digital migration. The research found out that TV penetration in Kenya is 28% of the households. 62% of Nairobians have TV sets. 99% of Kenyans are aware of impending digital migration by 2015 migration. 75% need an STB / Decoder while 18% need an Integrated TV Set . 62% consider content as the benefit of digital migration while 38% consider clear pictures.

Tom Muzungu is Audience Research Manager for IPSOS Media CT in Kenya. He is one of the industry's informants on media consumption trends and audience research patterns across Sub Sahara Africa. He has written a number of publications such as: Digital Migration and Potential Impact to Advertisers, Trends in Television Viewership, among many others.

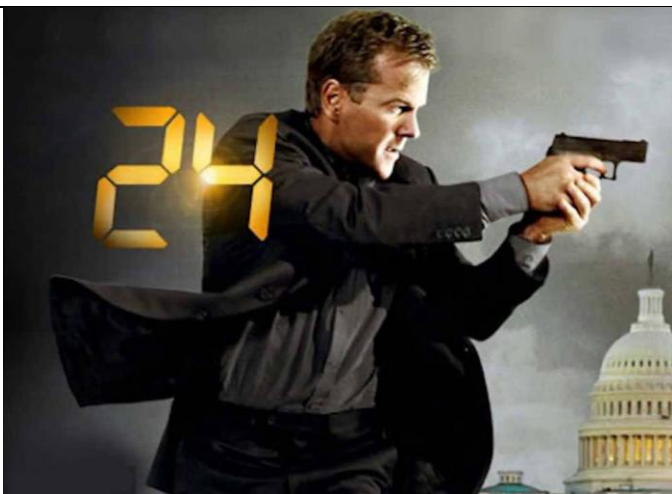Figure 30: This is all about content!

Figure 31: Africa version of 24?
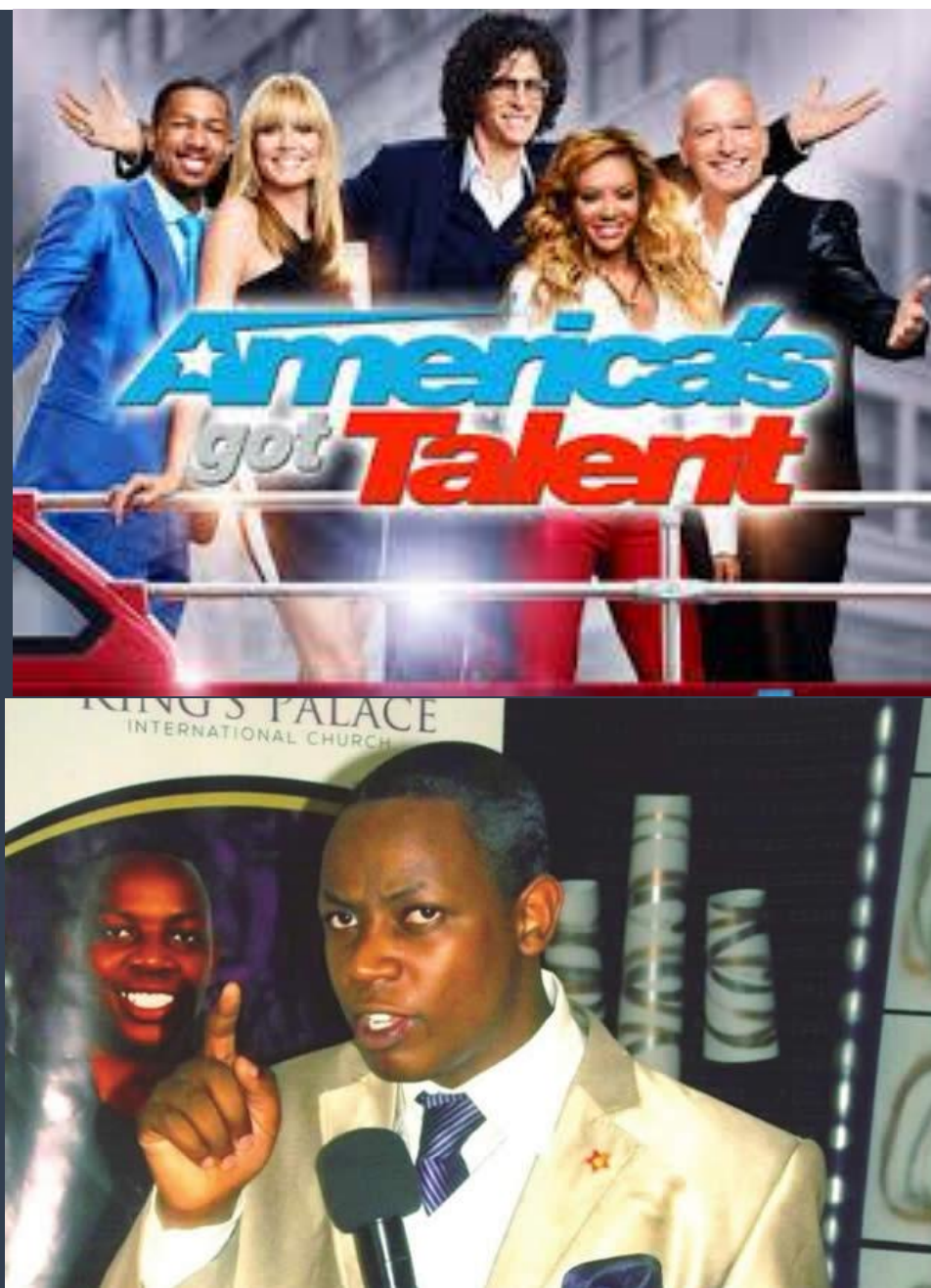
Figure 32: America's Got Talent VS Kings Palace

From the above pictures, Kimani compared various contents from outside Africa with African content. For example, he observed that as Americans have 24, Kenyans have their own version. There is our way of telling the African story. While the west uses guns, we have our weapons but we don't use them in our shows. Americans have their own kind of talent, Africa has its own. It has what he is good at. We have to localize what we have. Our stories are not African not replicas of the USA or British productions. . Its only Nollywood which has managed to tell their stories. The rest of us struggle to conform to Hollywood and yet Hollywood is looking up to us for African story.

There is **hunger for own content** in Africa and this is why piracy has cropped in. The demand far out way the supply. Africa wants to see what the rest of Africa is doing.

We need **content without borders**. Creating African content is too expensive because one channel pays for it and foot the whole but if different quarters are shared among different countries, the coast is spread. Our movies should screen across countries in

Africa. If it's good enough for one country, it's good for all the countries. We can customize by using language sub-titles. Language is not key, it's the story that is key.

After digital migration, the next conversion will be about putting all our content in one pot and distributing across Africa and across the world. We need to develop our own content that works:

Business of Africa Content

i. Africa Premiers for films and TV series e.g. release in 20 countries. (Cinema and TV series)

ii. African stars (Exchange of stars)-We need to go beyond African stars, consider Miss Africa could make Africa competitive at Miss World with better training for the participants to make them globally competitive. The sell the African Queen to the world. Content is not just about the series, movies etc. It's about our cultures across Africa such as marriage ceremonies.

iii. Syndication (news, sports and entertainment)-Adopt news syndication to reduce costs. English premier leagues have taken over African entertainment yet we have massive alternative sports such as wrestling, bull fighting in Africa. Focus in building our own talent and adopt a business model which works for Africa.

Interjections from the plenary.

i. Tanzania: Content needs investment. There are a lot of ideas but media houses fear to commit the huge capital required for content development.

ii. Liz-IT lawyer-Who is there in the market to distribute content across Africa? Relationships between producers and broadcasters break at commission level. The issue is about licensing. A broadcaster should be licensed for a year then it reverses back to the producer for further licensing. Content model is volume. There are a number of providers in the market with right connections in Africa.

iii. How will big screen broadcasting with audio visual content survive in this era with less audio visual content? Broadcasters will not close because the 2nd and 3rd screens are coming in terms of I-pads, mobile etc. Traditional broadcasting unlike 2nd and 3rd screens has no immediate feedback since it can't be shared via social networks. The feedback is costly through SMS premier costs. Accessibility of 2nd and 3rd screens is also instant. But as these grows, broadcasting will also grow as some issues will not make sense through 2nd and 3rd screens. The two have to work together. As VOD (Voice over Data) grows, data has grown threefold. TV as a box is also being transformed to be 2nd and 3rd screens ready. We now have television content and not television box. TV can be watched on I-pod, internet etc. There is a social perspective for TV where friends and families watch together. Game component are also emerging through play station. We are moving to an era where news is accessed anytime not necessarily at 7 and 9pm. It is also challenging in an era of free to air and pay channels which means broadcasters compete against about 500 channels. In the era of YouTube, everyone is becoming a broadcaster

iv. An audience is an audience irrespective of the media, whether it's an I-pad or a TV. Africa has not expressed the down turn in newspapers sells however th challenge is how to monetize online newspapers.

v. Ghana and Nigeria has a number of co-production. The new payment systems have made it is to monetize video production where the costs will be lower but the number massive. The producers should able to upload their own content and monitor progress based on what they like, what they don't like etc which reveals the movies they have watched and the books they have read. The viewer decides the fate of the content online.

vi. What's lacking in the market is that focus is on the musician or artist but the copyright society does not ensure that the artists are awarded.

George Kimani is Business Development Director of Continental Content Distributors and has over 12 years experience in the broadcast business in East Africa and continues to work and consult with broadcasters on content acquisition and revenue strategies in the digital

LOCAL CONTENT DEVELOPMENT PANEL

The panel was moderated by Wallace Kantai, Business Editor at NTV, one of Kenya's leading television stations and part of the Nation Media Group. He also serves as an anchor for the news bulletins. He has interviewed and interacted with dozens of the world's business leaders and policymakers. Kantai is a columnist for the Business Daily and the East African.

Figure 33: Wallace Kantai of NTV

The panel comprised of:

1. **Aisha Dachi**, Head of TBC Taifa at Tanzania Broadcasting Corporation, Tanzania and Principal Programme Producer since 2008. Prior to that, Dachi was with the former Radio Tanzania Dar-es-salaam (RTD). Dachi received a diploma in Journalism from Tanzania School of Journalism, a degree in Theater Arts from University of Dar-es-Salaam and a Masters Degree in Mass Communication from St Augustine University of Tanzania

2. **Dorothy Ghettuba,** Co-Founder and CEO of Spielworks Media Ltd. a Kenyan content production company. Spielworks Media is behind numerous local productions that have aired in Kenya and across Africa. Dorothy was selected as one of the 2008 Canada's Emerging 20 by Canada's Reel World Film Festival and was selected for the 2011 Top 40 Under 40 Women in Kenya.

3. **Aiden Gumenia** is the Director of Television at Malawi Broadcasting Corporation

4. **Linus Wamanya** is Innovations Coordinator for Vision Group in Uganda.

Figure 34: (L-R) Panelists Dachi, Walungama, Wamanya, Ghettuba

Local Content Development Panel: Discussion, Questions and Issues

Kantai: What drives the African story in light of copycatting? Is it advertising driven? Where does the commercial interest lie?

Ghettuba: We have to tell stories that people can connect to, that Kenyans can relate to it. People want to watch funny stuff because it's really tough in Kenya. There is really no copycatting as such but similar formats. Creativity and innovation is key.

Dachi: Think creativity with a commercial aspect. You need to be creative though broadcasters move out of creativity because of advertising revenue.

Kantai: Governments want to pass a message even if it's as boring as anything else. Who says what is creative?

Issues

Several participants brought out a number of issues. The following are some of them:

- The media is forced to produce local content. Quality is compromised due to financial constraints.

- Issues which affect Africa are not discussed in Africa but broadcasted abroad.

- Embracing the local people to contribute in sharing what is happening around them through bringing in news and events around them.

- There is an assumption that there is competition among the four main players: KBC, NTV, KTV and Citizen in Kenya but discounting the fact that there is competition from cable TV, switching off the TV and may be reading a book.

- How do we make our news and other productions less controversial?

- Foreign buyers are not looking for the local version of scandals. We need to tell African stories our way without connecting it with a foreign story. For example, Hostel told a Ugandan story about campus life.

- Not all content is meant to make money but meant for audience growth.

- Money does not come from broadcasting but from advertising and advertisings comes from the audience. There is no longer loyalty for the TV station but from the programming. If one programme is not good, a switch to another channel. There may be loyalty for newspaper though. We need to evaluate content and increase our audience.

- Commercial broadcasters want to maximize on the audience.

- Some shows with huge audiences such as *Jicho Pevo* may not attract advertisers because of the controversies involved and the media houses understand this.

- Most people did not watch about the Ugandan nanny on TV but on social media. Are we having conversions on wrong format? Most people want to relate with stories which touch them directly but we also have ethical standards which broadcasters must adhere to. Private broadcasters pick these scandals hence have more audience and advertisers.

- Which public broadcaster in   Africa has put two Africans kissing? Yet we put Mexican soaps with such kisses?-It's a cultural context which makes it acceptable for Africans to watch non-Africans kissing but wrong to kiss themselves or do PDA (public display of affection)

- Viewer watching habits are changing. With digital migration, the audience will be split across more than 30 TV channels alongside the movies, cinemas and other entertainment channels.

- Success of local content depends on whether it is addressing our reality. Content is moving the reality from outside to inside the house.

- How can we produce programmes which make a good business sense for all those involved? We are willing to buy international content but unwilling to buy local content. Broadcasters take a risk by accepting content. We should ask the networks what they are looking for and produce it.

- There are massive opportunities for online marketing of local content and entrepreneurs need to be aware of these such as google etc. When content hits online, advertisers come and through this, broadcasters come in to put the content offline.

- The economic models within the broadcasting sector is such that when content is not bringing money, its pulled out. We need to analyse the business case of the content we are producing.

- Digital era is redefining the behavior of the broad casters. If they don't respond to the producers, they lose out since the same content will be broadcasted through other media. It's up to them to remain relevant.

- Broadcasters need to have standard practice and learn from Nigerians through innovation and creativity.

- What do we need to do at all level? Broadcasters, content providers, independent folks?

- What and who are we creating content for? We create the content for the primary viewer or the others are overflow viewers.

Figure 35: Delegates engaging the panelists

Figure 36: Jonathan Mwakijele

Digital Broadcasting Migration Implementation

Introduction

Digital broadcasting uses frequency more efficiently and produces better quality video and audio than analogue broadcasting. The transition from analog to digital terrestrial broadcasting has been agreed at the international levels with switchover date set to 17th June 2015.

Benefits

The transition from Analog to digital broadcasting brings a number of benefits including: Increased choice and quality for viewers (as there will be more channels and the opportunity to provide a better image, including wide-screen aspect ratio, high definition and sound quality); Better efficiency in spectrum use (as more data can be transmitted within the same bandwidth). Spectrum will be released to allow the development of more television and other services for consumers.

Goals and Objectives of Digital migration

The main goals of the digital migration are to enhance choice, interactivity and quality of broadcasting for the benefits of citizens and to reap the social and economic benefits of spectrum efficiency (digital dividend).

The specific objectives of the migration are to: Develop harmonized policies and regulations regarding digital broadcasting migration, Identify technical standards for digital broadcasting for the region,

51

Develop regional and national frequency band plans for the provision of the digital broadcasting services, Develop licensing framework for awarding the digital dividend, Implement an agreed schedule for digital migration covering Digital Switch On, Dual Illumination and Analogue Switch off, Ensure equal participation of all stakeholders including consumer participation to the migration process, Ensure effective and adequate human capacity development in digital broadcasting.

Roles of Various Players

Roles of Stakeholders: Digital migration involves a wide range of stakeholders including *government, regulators, service providers, equipment manufacturers and consumers* that play diverse roles.

Role of Government: Governments have a leading role in developing policies and roadmaps for accelerated digital migration and ensuring that consumers have the necessary support in order to benefit from digital broadcasting. *Government needs to:*

i. Put appropriate institutional, policy, legislative and regulatory framework to enable smooth execution of migration process within the set time,

ii. Provide fiscal incentives to enable consumers procure Set-Top Boxes and digital TV receivers at affordable prices, preferably through tax waivers and subsidies,

iii. Provide appropriate incentives and support for signal distributors and broadcasters to put in place necessary digital infrastructure and systems, and

iv. Support the development of local content.

Role of Regulators: Regulators will have a key role in setting the desired licensing frameworks, ensuring level playing field in broadcast services, signal distribution, spectrum allocation and cross-border regulation and in maintaining the requisite standards. *Regulators need to:*

i. Allocate digital broadcasting spectrum based on the provisions of ITU region 1 and other regional plans,

ii. Coordinate spectrum management with neighboring countries to avoid interference so as to ensure a smooth transition process,

iii. Institute appropriate measures for ensuring safe disposal of disused analogue equipment to minimize adverse impact on the environment,

iv. Adopt digital broadcasting standards based on international recommendations and define the minimum standards/specifications for the Set-Top Boxes in line with international standards, and

v. Promote consumer education and awareness.

Role of Broadcasters and Signal Distributors Broadcasters have a critical role in rolling out of digital broadcasting networks and services. *Broadcasters need to:*

i. Enhance content development taking the digital environment into the account,

ii. Invest in studio and production equipment to facilitate the production of digital content,

iii. Build the capacity of human resources to adopt the new digital broadcasting skills, and

iv. Provide better technology for storage, processing and sharing of digital content

Signal distributors play a major role in signal distribution, infrastructure development and operation. *They need to:*

i. Ensure carriage of signals from the studio to the distribution and transmission sites,

ii.   Broadcast the signal to the designated areas, and

iii.   Provision of quality services to broadcasters on an equitable, reasonable, non- preferential and non-discriminatory basis.

Role of Equipment Manufacturers Equipment manufacturers and vendors have a key role to assurance of the key adherence to the required and approved standards of equipment and hindrance to dumping of e-waste of analogue broadcasting equipments. The equipment manufacturers and other private sector can also play a critical role in financing research and development and supporting the migration process.

Role of Consumers and Consumer Associations Consumers are critical in the uptake of digital terrestrial television by purchasing Set-Top Boxes or integrated digital TV receivers in order to receive digital terrestrial transmission. The consumer associations' commitment and involvement is critical for the provision of universally accessible digital broadcasting services and the inclusion of people with disabilities and special needs in the accessing the new broadcasting services. They have also roles in guarding against consumer exploitation through unfair market practices.

Role of Regional Organizations ICT Regional bodies have a key role in convening the ministers responsible for broadcasting, mobilization of resources for capacity building and in support of the harmonization of policies, frequency allocation and standards. ICT Regional bodies have a major role in creating the platform for regional coordination and knowledge sharing, policy harmonization, capacity building and the implementation of the roadmap for digital migration.

Action Plans

Institutional Arrangement

The migration from analog to digital is a long-term process that requires the involvement of key stakeholders.

The following institutional arrangements are proposed for smooth transition for analog to Digital Terrestrial Television at national and regional levels:

i.   A national steering committee drawn from relevant ministries and agencies represented by Ministers and Directors, National multi-stakeholders forums aimed at increasing awareness of the importance of digital broadcasting,

ii.   A national Digital Terrestrial Television migration project office with adequate resources to facilitate smooth transition,

iii. Annual regional multi-stakeholders forum aimed at increasing information exchange and sharing of experience on the implementation of digital migration,

iv.   Technical working groups that are established under the auspices of regional bodies to address spectrum management (digital dividend), licensing and specification for STBs, among others

Creation of an Enabling Environment

Policy makers have a major role in developing a national strategy and plan for transition from analog to digital broadcasting with clear timetables and regulatory provision for licensing, spectrum planning and the effective use of digital dividend.

Digital Migration Policy and Strategy Digital Migration Policy

Countries should have policy document that addresses the key public interest issues of digital migration. The policy document should outline decisions with regards to transition process and timetable, licensing, spectrum management and government incentives for enhancing affordability of digital receivers and Set Top Boxes, among others.

Digital Migration Strategy

The digital migration strategy that draws on the policy document should discuss the rationale for digital migration, standards, policy and regulatory interventions, the transition plan and other challenges and opportunities concerning the industry and consumers. The policy and strategy papers should be developed by all countries. These documents should be available to stakeholders including content providers, signal distributors, consumers, equipment manufacturers and others.

Licensing and Competition

i. *The following actions should be undertaken by countries with regards to licensing and competition:* Broadcasting license should be given within the context of convergence licensing framework, wherever possible, Infrastructure sharing should be a key element of the licensing regime;

ii. Countries should consider two major licenses in the broadcasting sector – *content services* and **network services** (multiplexing).

iii. The number of signal distributors should be limited. It is preferred that countries license two signal distributors. In the case where two or more signal distributors are licensed, there should be interoperability between signal carriers.

Spectrum Planning and Allocation

The transition from analogue to digital broadcasting will result in changes in spectrum usage allowing excess freeing capacity that creates a spectrum dividend to the Government. In order to achieve this, it is recommended that governments should revisit the assignments in the ITU GE-06 Plan and optimize the assignments using a range of frequency planning tools and the latest propagation techniques.

The assignment of the frequency in Countries should be within the framework of the ITU GE-06 Plan for region 1. The national frequency plan should be updated based on regional and international agreements. Any modification of bands III, IV and V of GE06 plan should be coordinated with neighboring countries and with subsequent filing with the ITU.

Spectrum should be coordinated to eliminate harmful interference between Member States. There is a need for cooperation between neighboring countries with regard to licensing of transmitters located at geographical borders. Member countries should consider further optimization of the broadcasting frequency after the digital switch-over;

Consistent with the GE06 member, countries should facilitate the sharing of the band 174 – 230 MHz for DTT and T-DAB; DTT should be assigned to band (174 – 214) while T-DAB should utilize band (214-230MHZ; Additional bands 230–238 / 246–254 MHz can be used for DTT services as per GE06 Plan

The transition from analogue to digital broadcasting will result in the ceding of the 790-862 currently being utilized by the existing analogue broadcasters. Member States need to harmonize band plan for the 790 – 862 MHz and create a unified 800MHZ band for electronic communications services. Initial emphasis to be placed on migrating the bands 214–230 MHz and 790–862 MHz.

Countries need to re-plan the broadcast spectrum within 470 to 790 MHz range. Where possible Countries should avoid making any new DTT assignments in the band 790–862 MHz unless it is for the purposes of facilitating a smooth migration process. Band 790 -862 MHz should be continued to be allocated for mobile services including IMT and should be used when available.

Technical standards

In order to ensure compatibility, it is important to define the appropriate standards for digital broadcasting in the region. *The approach adopted is to:* o Identify existing digital broadcasting standards available worldwide; o Analyze them from a technical perspective, their compatibility with GE06 plan and with reference to individual countries and make recommendations on the choice of standards and the way forward.

Transmission Standards

Harmonization of transmission standards is essential to achieve interoperability between systems and attain economy of scale. Lack of commonly agreed standards would be as barrier to achievement of universal access to digital television service and to the achievement of the economies of scale in manufacturing and distribution of the equipment in the region.

The following actions are therefore necessary with regards to adoption of regional standards:

DVB-T2 should be adopted as the common standard for DTT in our region; o MPEG 4 is recommended for compression,

DVB-S2 standard should be considered for satellite broadcasting,

DVB-H for mobile TV standard,

IBOC system for use as the FM digital sound broadcast format, and o DRM for Medium and Shortwave radio broadcast,

Set Top Box Specifications

Given that DVB has been recommended as a standard on the transmission network side, it is advisable that Set Top Boxes comply with the DVB family of standards. The specification (e.g. free-to-air, conditional access, low-level entry, etc) needs to be determined as part of a broader policy discussion. Countries should have a task team to develop a regional technical specification for STBs and integrated digital TV based on experiences in other countries in Europe and Africa.

Governments should provide appropriate incentives so as to attract potential manufacturers with a view to licensing a maximum of three (3) manufacturers of STB. *Such incentives should include:* o Tax holiday on manufacturing inputs, o Zero import duty on manufacturing equipment, o A government policy to protect the market through a moratorium on imports of similar equipment for a specified period of time, o Provision of sufficient infrastructure, including electricity, water etc., o A maximum of three manufacturers should be allowed. It is recommended that the regulator should manage the process for the selection of the manufacturers of the Set Top Boxes.

Content Development and Regulation

Countries should consider the following with regards to content during the transition period:

Digital content should be regulated with light touch approach, Channels are required to include electronic programming guide (EPG) in order to allow consumers to navigate through the available programmes,

Governments should facilitate the establishment of local content development funds within national Universal Service Funds (USF) to enhance the development of local content, Capacity building in digital content production through training and apprentice programmes should be considered, Local content provisions should be spread across the multiplex and not focused on individual channels.

Consumer Awareness and Participation The success of the transition programme will be determined largely by the extent to which the consumer is well informed on the key issues of the programme. *It is therefore recommended that:* Policy makers should pay particular attention to costs that are involved in the broadcasting value chain (production, transmission and reception) and ensure that costs will not be burdensome to consumers. Regulators should embark on continuous sensitization of the general public on the digital switchover as approved by Government. All national and international events should be encouraged to buy into this awareness programme.

Climate Change Issues

Digitization will inevitably result in generation of additional e-waste; which is a serious concern to climate change that should be addressed.

i.   Countries should adopt the Switzerland model of e-waste disposal whereby all actors (manufacturers, wholesalers and retailers) are licensed,

ii.   A token amount (an advance recycling fee) should be charged at points of purchase of every electronic equipment, while disassembling centres are established in order to achieve an organized retrieval and safe disposal of e-waste arising from digitization;

iii. All importers of transmit and receive broadcast equipment should be licensed by the Regulator as Broadcast Equipment Dealers.

Capacity Building

Capacity building is an important aspect during digital transition. Every stakeholder should be provided with the necessary skills and knowledge in order to benefit fully from the migration to digital broadcasting. *National level capacity building initiative should focus on:*

Increasing public awareness of the digital migration, o Enhancing the awareness of policy makers, broadcasters, media, content producers.

Countries need to establish a regional platform for ongoing capacity building in digital transition with focus on:

i.   Creation of programmes for capacity building with a focus on creating a critical mass of qualified and skilled professionals and experts in the governments, regulatory authorities, broadcasters, frequency planners, equipment resellers and public on the complex issues technical, regulatory and economic issues of digital migration,

ii.   Empowering people involved in the migration process through technology knowledge transfer in digital transmission technology, digital studio technologies, content development, spectrum planning, networking and applications, and

iii. Creation of forums on policy and regulatory harmonization, new regulation and regional information sharing.

Implementation Schedule

Efforts should be made in promoting regional coordination in transition process by synchronizing the digital switch-on and analog switch-off dates.

Countries should also coordinate pilot trials in order to share experience and address interference issues. Countries need to adhere to the agreed time table.

Conditions to achieve a successful transition to DTTB and the introduction of MTV services, including:

i.   Strong leadership from government;
ii.   Firm decision that sets the analogue TV switch-off date;
iii. Close cooperation between the regulator and market parties;
iv.   Clear and timely regulatory framework (including decisions on the "Digital Dividend");
v.   Adequate information and assistance to viewers.

Analogue Switch-Off (ASO) planning phases

Three phases can be identified:

Phase 1: The introduction of DTTB Services
Phase 2: The simulcast period and the preparation of the Analogue switch-off;
Phase 3: The analogue switch-off

Phase 1: The introduction of DTTB services

In this phase of the planning the DTTB network will be rolled-out (in the region) and digital transmitters will be installed in either existing or new sites. It is important that in this phase of the planning:

i.   The National Spectrum Plan should be updated and the DTTB licensing should be completed;
ii.   No further analogue terrestrial television frequency licences should be issued and possibly existing analogue television licenses should be revised (to make it possible to terminate the licence);
iii. Existing regulations have been reviewed to ensure that they reflect the implications of digital transmissions;

iv.   Current analogue broadcasters are being informed that they will be allowed to continue with analogue transmissions up to analogue broadcasting switch-off date;

v.   The start-up phase of digital broadcasting will be closely monitored in terms of coverage, reception quality and interference in general and in particular in the cable reception.

Phase 2: The simulcast period and the preparation of the analogue switch-off

In this phase of the planning the viewers in the affected region, are being actively informed about the switch-off date.

It is important that in this phase of the planning:
Receivers are available and distributed in the right amounts and locations;

i.   Postcode or address 'checker' (for affected viewers to check if they are affected and possible what type of receiver is best – rooftop aerial or perhaps an indoor aerial might be sufficient) and websites are tested and operational;

ii.   Contact centres are tested and ready to be operational;

iii.   In case of financial compensation and installation aid, the logistics chains for these services are tested and operational;

iv.   Broadcasters will include in their programming ASO information and actively promote switch-over to digital.

Phase 3: Analogue switch-off:

This stage will involve the switching off of all analogue terrestrial broadcasts in the region. Ideally before analogue switch-off all affected viewers have upgraded their TV sets to digital by using a set-top-box or IDTV. All current analogue terrestrial broadcasters will need to have migrated to a digital platform.

It is important that in this phase of the planning:

i.   The affected viewers are being monitored (by having call centers on stand-by) and research is carried out to identify any problems and learning points for the next switch-off region. Especially after the first region some time should be allowed before switch-off starts in the next region in order to incorporate the lessons learned;

ii.   Analogue equipment is dismantled, allowing re-use of transmitter infrastructure;

iii.   Re-engineering of digital transmitters sites to remove any analogue restriction that might have existed in order to protect analogue TV.

References

Mwakijele presented the following references for further reading:

References Guidelines for the transition from Analogue to Digital Broadcasting (2012) http://www.itu.int/ITU-D/tech/digital_broadcasting/project-dbasiapacific/Digital-Migration-Guidelines_EV7.pdf Roadmap for Digital Broadcasting Migration Implementation (2011) http://digmig.events.apc.org/wp-content/uploads/sites/5/2013/12/COMESA-Digital- Migration-Roadmap-final.pdf

Jonathan Mwakijele is Head of Training, Consultancy and Research Unit at the African Advanced Level Telecommunications Institute (AFRALTI). He also serves as Manager of the Fiber Optics Academy. Before joining AFRALTI, he served the Kigali Institute of Science and Technology (KIST) as Lecturer and Head of Department, Computer Engineering and Information Technology.

Figure 37: We are in this together. A few delegates

Ami Digital Migration Workshop Attendance List 3-4 December 2014				
Last Name	First Name	Organization	Title	Country
Nyagahene	Eugene	Tele10 Group	Ceo	Rwanda
Nkunika	Levie	Malawi Broadcasting Corporation	Director Of Commercial Services	Malawi
Gumeni	Aidan	Malawi Broadcasting Corporation	Acting Director Of Engineering	Malawi
Mungai	Wainaina	Pablo Divino Limited	Director	Kenya
Kabanga	Joseph	Tanzania Broadcasting Corporation	Ict Manager	Tanzania
Dachi	Aisha	Tanzania Broadcasting Corporation	Head Tbc Taifa	Tanzania
Njoroge	Dorothy	United States International University	Assistant Professor Journalism	Kenya
Wanjohi	Coletta	Press Tv/ Channel Africa Radio	Journalist	Ethiopia
Ngurumo	Ansbert	Vox Media Centre Tanzania	Managing Director	Tanzania
Osman	Mohamed	Northeastern Media & Telecommunication Ltd	Director	Kenya
Omar	Nasra	Northeastern Media & Telecommunication Ltd	Program Manager	Kenya
Abdullahi	Mohamud	Star Fm	Chairman	Kenya
Kimani	George	Continental Content Distribution Ltd		Kenya
Michael	Rabar	Homeboyz Entertainment Ltd	Ceo	Kenya
Kamal	Vekaria	Radio Africa Group	Group Special Projects Manager	Kenya
Omondi	Amos	Kenya Broadcasting Corporation	Asst. Mgr Dvb T Project	Kenya
Kihara	Kobi	Nation Media Group	Producer	Kenya
Mohammed	Abdulkareem	Moving Image Limited	Chief Executive Officer	Nigeria
Mongare	Walter	Nairobi City County		Kenya
Muriithi	Maina	Elimu Tv	Ceo	Kenya
Ong'ang'a	Obiero	Osienala (Friends Of Lake Victoria)	Executive Director	Kenya
Wachuka	Angela	Kwani Trust	Executive Director	Kenya
Wachuka	Angela	Kwani Trust	Executive Director	Kenya
Kihara	Kobi	Nation Media Group	Producer & Presenter	Kenya
Mutuvi	Justus	Machawood		Kenya
Obure	Victor	Kenya News Agency	Website Editor	Kenya
Sarah	Wambui	Machawood	Mrs	Kenya
Kutlu	Ali	Ebru Africa Tv	Gd	Kenya
Muwanga Kenneth	Kelvin	Bukedde Tv- Uganda	Mr	Uganda
Atiol	Elmalik	Freelance	Communication Consultant	South Sudan
Mungai	Wainaina	Pablo Divino Limited	Director	Kenya
Muema	Anthoney	Kenya Voluntary Development Association	International Volunteer	Kenya
Muhozi	Innocent	Renaissance Tv	General Manager	Burundi
Farah	Mohamed Rachid	Somalia Journalist Association (Solja)	Secretary General	Somalia
Okello-Orlale	Rosemary	Ford Foundation	Program Officer	Kenya
Lenjo	Elizabeth	Phat! Music & Entertainment Limited	Legal Counsel & Copyright Manager	Kenya
Lee	Robert	National Assoc Of Broadcasters Usa	Retired Gm	USA
Drummond-Hay	Ronelle	Kas Media Africa	Regional Media Programme	South Africa
Mwale	Kezias	African Telecommunications Union	Radio Spectrum & Program Coordinator	Kenya
Soumaila	Abdoulie	African Telecommunications Union	Director	Kenya
Wekesa	Steven	Emerald Group Ltd	Director	Kenya

Wanyoike	Emmah	Ipsos	Client Service Manager	Kenya
Wambui	Mark	Chromatic Pictures Africa	Director	Kenya
Muya	Dorcas	Word Filming Production	Director	Kenya
Kombo	Mahmoud Thabit	Zanzibar International Film Festival Ziff	Chairman	Tanzania
Adam	Abdelftah Tipen	01 Media Africa	Video Director	Sudan
Vivier	Juliette	French Embassy In Kenya	Av Attaché	Kenya
Issa	Omar Djama	Yve Djibouti	Executive Director	Djibouti
John	Mwangi	Zenj Multimedia Communications	Film Producer/Director	Kenya
Steadman	Roger	Ipsos	Chairman	Kenya
Muiruri	Esther	Kikaoo Entertainment And Pr Firm	Ceo	Kenya
Ngulube	Dumisani	Times Group	Mr	Malawi
Estephan	Joseph	Ipsos	Managing Director	Kenya
Mwangi	Rosemary	Communications Authority Of Kenya	Digital Secretariat	Kenya
Kandagor	Isabelle	Communications Authority Of Kenya	Engineer Broadcasting	Kenya
Kingori	Hazel	Communications Authority Of Kenya	Assistant Manager, Media And Publicity	Kenya
Muniu	Rehema	Ipsos	Director	Kenya
Mohamed	Abdul Karim	Ipsos Limited	Group It Manager	Kenya
Kamau	David	Ipsos Kenya	Operation Manager	Kenya
Nyanjong	Maureen	The Eastgate Co.	President	Kenya
Gitahi	Catherine	Kenya Film Commission	Corporate Affairs Manager	Kenya
Ateku	Nickson	Mount Kenya University	Student	Kenya
Alfred	Minjire	Standard Media Group	Head Of Technical	Kenya
Joe	Munene	Standard Media Group	Md	Kenya
Otieno	Mike	Evidence Action	Senior Associate Communications	Kenya
Ogola	Japheth Oluoch	Professional Services Centre	Rapportuer	Kenya
Alexander	Flemming Mugane	Professional Services Centre	Rapportuer	Kenya