A Little Creative with the Broadcast History of Zimbabwe: A Metaphilosophical Approach

Clever Chirume[a], Ruth Elizabeth Teer-Tomaselli[b], Charmaine Munashe Chirume[c]*

[a]*159 Rainham Plots, Mount Hampden, Harare, Zimbabwe, ZW*
[b]*University of KwaZulu-Natal, Durban, South Africa*
[c]*BJS Harare Zimbabwe*
[a]*Email: cleverchirume@yahoo.co.uk*
[b]*Email: teertoma@ukzn.ac.za*

Abstract

A pervasive yet intriguing insight about the birth of broadcast in Zimbabwe is the story in which three engineers stumbled on broadcast through the use of a transmitter initially installed for meteorological purposes [1]. This was immediately followed in 1932, by the opening of broadcast stations in the then Salisbury (now Harare) and Bulawayo [2]. Drawing from the insights of Walter Mignolo in the article titled 'Epistemic Disobedience,' the current study sought to demystify the idea that broadcast in Zimbabwe as born in the 1930 as a lie that has been recycled for far too long. The current paper seeks to prove that the claim that broadcast in the country was born in the 30s is bereft of scientific reasoning and real meaning of broadcast. It is a claim premised on the bigotry of proverbial 'Boer mentality.' In the article *'epistemic disobedience,'* Mignolo exposes the analytic limits of Eurocentrism as a hegemonic structure of knowledge and beliefs [3]. Operating within the structured prisms of Mignolo's ideas, the current paper finds the assertion that broadcast in Zimbabwe was born in the 30s, a recycled lie bereft of scientific reasoning and the real meaning of broadcast. The engineers who incidentally discovered broadcast in Zimbabwe had been attached to the Rhodesian aviation sector, particularly for periodic whether updates for the few flights that passed through or landed in the then Rhodesia now Zimbabwe [4]. The paper traces the roots of broadcast to the invention of the drum, which is quite ancient [5]. An important finding is that outdated laws and ancient technology are pretty much a feature of the present history of broadcast in Zimbabwe [6]. Technology that should have been decommissioned and relegated to the museums and archives is in use in broadcast in the country [7]. Yet despite this ugly patch to broadcast in Zimbabwe, a promising narrative has emerged [8]. The new narrative is linked to digitization. In simple, digitization relates to the use of digital signals in communication [9].

----

* Corresponding author.

Indeed, the story of broadcast in the country would not be complete without mentioning the alluring promise of technological vibrancy, content creation and the concomitant democratic potential of the sector in the digital age. Quite notably, broadcast is geared for transformation as the country's new Government led by Emerson Dambudzo Mnangagwa has embraced the Fourth Industrial revolution. The enthralling Fourth Industrial revolution of the digital age is underpinned by a fusion of burgeoning technologies. Notably, the technologies have led to the need for additional spectrum to cater for the increasing volumes of information being transmitted from point to point. In simple and for the purpose of this paper, spectrum is a 'channel through which communication take place' [10]. Quite notably, the most significant changes in information and communication occur in broadcast [11]. A pragmatic historical qualitative approach, typifies the philosophy through which the information and data to complete the study were collected. This methodological approach is underpinned by an admixture of document analysis, whose over-arching analytic theoretical framework seeks the underlying issues about broadcast. Notably, the historical study has capacity to analyze often opaque issues especially those that require memory to recreate [12]. This capability lends traction to the historical method. Further if not for the study's esthetic qualities, the importance of the current study lie in the widening and deepening of the scope of knowledge in broadcast in Zimbabwe. Philosophy is constituted beliefs framed in the form of theory. As a theory philosophy provides answers arising within the context of a people's experiences -hearty on masculine-refusing to accommodate other positions in terms of truths even if it means lying through one's teeths, hence the recycling of a lie regarding broadcast history in Zimbabwe. Therefore, philosophy has a bearing steeped in the culture of a people their tradition and values implying the possibility of the existence of different philosophies for different communities in as much as they are many cultures. Presumably broadcast in Zimbabwe developed in the context of specific thought processes in terms of theory which in the views of the current study could suggest a distinct Zimbabwean philosophy to the understanding of this sectorin the country.

Keywords: Broadcast; History; Digitization; Zimbabwe.

1. Overview of the Study : Inside a Panoply of Issues

The spasms to the birth of broadcast in Zimbabwe are interesting. Notably, issues to the epistemological development of broadcast in the country offer intriguing insights. Some of the insights relate to the story in which the proverbial 'Boer mentality' is celebrated highly through the recycling of a lie in which broadcast in Zimbabwe is said to have been born in the 1930. Other insights are about the story of the demystification a lie recycled for far too long in scholarship regarding broadcast in Zimbabwe. The demystification of the dominant Boer mentality to history in Africa is involves embracing insights from the subaltern perspective. The subaltern perspective represents the voice of the voiceless. Therefore the Boer mentality is history's dominant ideology premised on the idea that 'David Livingston travelled from Europe to 'discover' the Victoria Falls in Zimbabwe. This is despite there were the local Lozi people who inhabited the area. The Victoria Falls is a natural waterfall along the Zambezi River at the boarders of Zimbabwe and Zambia. The Lozi people had referred to this majestic wonder of beauty as *Mosi-oa-Tunya* , which literally translated to English as the 'smoke that thunders,' referring to the waterfall. In the context of this paper the proverbial 'Boer mentality' is interesting as a historical phenomenon, since it has a bearing on the projection of African systems including broadcast. Notably, a synopsis of Africa is that it is largely perceived as wasteland, a heart of darkness [13]. Conrad's Heart of

darkness offer analysis of the deterioration of the Whiteman's moral, when let loose from European restraint, and planted down in the tropics as emissary of light armed to the teeth, to make trade profits out of the subject races [14]. It is within this tapestry, that the paper examined the history of broadcast in Zimbabwe and its possible nature during different historical epochs of the country. The paper is further concerned about the appropriate nomenclature of 'broadcasting' or is it 'broadcast.' These and other issues are critical to the development of this paper. The arteries of railways, the aviation industry, marine and telecommunications are considered the foundational base of broadcast. Notably, the drum, fire and smoke offer alternative forms of broadcast in I the country which are ancient. Therefore, in narrating the proverbial DNA of broadcast in Zimbabwe, a broader perspective is critical. The appreciation of digitization also benefits in the understanding broadcast in Zimbabwe.

1.1. Aim

The primary aim of the paper is to document the history of broadcast in Zimbabwe and explain the metaphilosophical questions about the meaning of broadcast in the country and possible nature.

1.2. Literature

Except for anecdotes and memos found in archives, the history of information and communications in Zimbabwe is difficult [15]. The sector is fluid since a newspaper or broadcast station may pop-up only to disappear the following day. In addition, the internet is increasingly forcing changes of a convergence nature to broadcast present opportunities. A lacuna exists in literature on broadcast [16]. This paucity in literature is linked to lack of scholarship in this subject [17]. Comparatively young to South Africa, Zimbabwe's information communications sector boasts of relatively vibrant and diversified media in terms of the size of the country, economy and nature of politics [18]. At the local (Zimbabwean) level, a number of prior studies have been conducted concerning policy-related issues in the media industry of the country as demonstrated in literature [19]. However, the paper observed the predominant issues in media studies at the Zimbabwean local level as the question of state dominance in policy-making processes in the sector [20]. Quite notably, the broadcast history of Zimbabwe reflects an apparent information gap [21]. The lacuna in information is not only in terms of the broadcast sector but other sectors, of the country. Bemoaning the lack of literature on the history of warfare in Zimbabwe, the Zimbabwe National Army (ZNA), recently launched a National Defence College (NDC), which immediately commissioned studies on the history of the liberation struggle in the country to date [22].

1.3. The Historical Method

The study springs from an earlier study conducted at the Centre for Media Studies at the University of KwaZulu-Natal in South Africa. The previous study was carried out from 2013 to 2015 focusing on issues related but not confined to 'Spectrum *Management and the Transition to Digital Broadcast in Zimbabwe' whilst* the current study focuses on '*The History of Broadcast in Zimbabwe'.* By their nature historical studies, are an area of the humanities in which different aspects of society, culture heritage are examined from the point of view of a range of disciplinary traditions such as archaeology, ethnology, history, and history of ideas and the

study of religions [23]. The researchers believe the foregoing is the reason the current study was found worthy of sponsorship by the CMS. The CCMS is one of the most thriving centres of the School of Humanities at the UKZN in South Africa. Archival materials are considered as critical sources of the information used to complete this paper. Despite the weakness of the historical method toward knowledge creation it is an effective method reconstructing the past in a manner that approximates social reality [24]. This method is particularly strong in tracking change over time. Such researches are longitudinal. Longitudinal research is done either prospectively (forward) or retrospectively (backward over time) and can cover a much bigger population as compared to other methods. A major weakness of the historical method is that documents may contain spontaneous information, such as feelings. Documents may also refer to actions that transpired in specific context that is peculiar and therefore restricted to the context they relate. In order to overcome this weakness, the researchers had to engage in primary conversations with specialists in the broadcast sector. This was critical in confirming documentary evidence. Notably, confirmation is a critical procedure of the historical method.

1.3.1. Limitations of the Study and Solutions

Every research has limitations. Limitations to a research range from the philosophical, conceptual and methodological weaknesses to the more practical issues of financial as well as spiritual limitations. The death and illness of relatives distracted our attention as such misfortunes sometimes occurred during moments when we most needed to focus on the completion of the paper. At the philosophical level, weaknesses and limitations occur at various levels in a study such as the conceptual, methodological, epistemological and analytical levels. To ensure quality and credible results for the study a crosspollination of archival historical information with primary conversations was employed. Archival records were necessary at tracking issues deeply buried in the pasts. This was combined with confirmatory conversations of a primary nature. As a result of the lack of time and resources to engage an involving study, the researcher adopted a case study of broadcasting in Zimbabwe. The case study was regarded the best study option for this research, given the practical constraints highlighted above among others. Ultimately, results from the study may not be generalizable. With a thorough analysis of the philosophical assumptions of the study, we were convinced that we adopted a comparatively effective design for the study. The issue of objectivity in terms of the nature of the information gathered for the study remained of utmost importance to the researcher. Objectivity in research is concerned whether the knowledge being generated is scientific as opposed to anecdotal, selective or arbitrary. The quality of the study was also ensured through the adherence to what is known in Latin as sequitur reasoning. Sequitur reasoning simply relates to the collection of logical evidence to a study.

1.4. Findings of the study

In search of an Introduction

The section of the paper presents the findings of the study. The quest to establish the history of broadcast in Zimbabwe required understanding of the meaning and possible nature of the concept. Furthermore, questions about whether '*it is broadcasting or broadcast'* are critical for this historical study. A clarification of these issues among others yielded a deeper meaning and understanding of broadcast in Zimbabwe. Such an approach engendered credible and interesting views on broadcast in the country. Also critical is the examination of the

environment within which the sector developed. Such relates to the global and the discrete national levels within which broadcast in the country developed. Notably, the presentation of findings about this study is not structured in any way. Whilst this study does not follow a predetermined pattern to analysis, the paper sought to emphasize the meaning and possible nature of broadcast in Zimbabwe. Quite notably, the study sought to demystify what it considers a recycled lie about the birth of broadcast in the 30s.This study observes that broadcast in Zimbabwe started in antiquity. A compelling finding of this study, is the existence of none-technical forms of broadcast (such as through the use of drums, smoke and fire) which is as old as humanity itself. The ability of orature is associated with broadcast although technically, speech occupies the lower levels of spectrum in electronics. The presentation of findings about this study also involves an analysis of the British and American broadcast legacy.

1.4.1. So 'What is broadcast exactly?'

Whilst this study sought to provide views about the meaning of broadcast, a lot still needs to be done in order for a definitive appreciation of the concept as a result, studies in broadcast are compelling. The reason for this is the strategic role the sector is projected to play in the development African countries. A lot of what can be done on the computer in office such as typing, shopping, banking, paying bills and email, will in future, be conducted through television in the comfort of one's couch [25]. However, the question remains *what exactly is broadcast* and its possible nature. A synopsis of the way Africa is viewed (otherwise known as the dominant paradise to history) is critical for a clear perception of broadcast in Zimbabwe.

1.4.2. A Synopsis of the Dominant Paradise to history in Africa

In line with the Boer mentality approach or better still the dominant paradise to history, Africa is projected as a continent without a history or future. It is viewed as a continent of innocent ignorance about time, a place of a blissful, animal-like existence in present [26]. Such is the basis of Hegel's dismissal of the continent as an actor in world history: "Africa . . . is the Unhistorical, Undeveloped Spirit, still involved in the conditions of mere nature" Hegel's reading of Africa is very influential in Europe's intellectual and political history, feeding directly into justifications of the colonial enterprise[27]. Africa is also depicted as a continent of the past, of perennial traditions that determine the present—and compromise the future. Such visions constitute a vein that goes through much Africanist discourses: from cultural theory, built upon issues of identity and cultural essentialism, via politics, which oftentimes strive to resurrect a putative pre-colonial past, to philosophy [28]. These views shape the way broadcast in Zimbabwe.

1.4.3. Revisiting the Definition of Broadcast: A metaphilosophical Approach

It appears from evidence collected that broadcast can be defined from a variety of standpoints. Such standpoints are peculiar to specific situations. As a result, a serious engagement with the meaning of broadcast is also concerned about the appropriate nomenclature of the concept in this regard; the question is whether it is 'broadcasting' or 'broadcast'.

The technological dimension to broadcast

Notably, the most popular of the definitions of broadcast is the technological view. Broadcast is viewed against this view as the simultaneous transmission of a message to multiple recipients [29]. In networking, broadcast occurs when a transmitted data packet is received by all network devices [30]. The earliest broadcast consisted sending telegraph signals over the airwaves, using Morse-code, a system developed in the 1830s by Samuel F.B. Morse, physicist Joseph Henry and Alfred Vail [30]. They developed an electrical telegraph system to sent pulses of electric current along wires which controlled an electromagnet located at the receiving end of the system [31]. A code was needed to transmit natural language using only these pulses, and the silence between them [32]. Morse therefore developed the forerunner to modern International Morse Code [33]. This was particularly important for ship-to-ship and-ship-to shore communication, but it became increasingly important for business and general news reporting, and as an arena for personal communication by radio amateurs [34]. Audio broadcast began experimentally in the first decade of the 20th century [35]. By the early 1920s radio broadcast became a household medium, at first on the AM band and later on FM [36]. Television broadcast came a little later 1920 becoming widespread after World War II, using VHF and UHF spectrum [37]. Satellite broadcast was initiated in the 1960s and moved into general industry usage in the 1970s, with DBS (Direct Broadcast Satellites) emerging in the 1980s. Until as recent as the 1990s, broadcast had been mainly a matter of transferring sound and video streams through the airwaves or in some developed countries, through cable [38]. As a concept, broadcast involve the electronic transmission of radio and television signals designed for public consumption [39]. Quite notably, it should be observed that a section on digital imperatives is included to examine the new forms of broadcast in the digital age.

The Humanistic Approach to Broadcast

A qualitative humanistic approach, broadcast is a mirror to a people's activities. Metaphorically broadcast reflects the forces at work in society such as politics. Such reflections are not just in terms of the output - the programmes - but also in terms of the structure and the aspirations of a broadcast organization of a country A simpler but equally compelling way of looking at broadcast from a humanistic perspective is simply that it is a form of communication with an audience through a known medium such as in the earlier example of 'smoke' The wailing of women would be used to broadcast the sad news of death in a community. A peculiar sound beat from the drum signaled a specific message in a community.

1.4.4. The British and the USA legacy to broadcast in Africa

The legacy of the United State of America and the British experience toward the history of broadcast in the world cannot be underestimated. Despite apparent differences, radio and television can be explored together in terms of history. Both seem to have emerged in search for a use, rather than a response to a demand for a new kind of service or content. The global international trajectory of broadcast is critical to the understanding of the information communication environment in Africa since the kind of information and communications sectors which emerged in many parts of Africa were in most cases determined by the colonizing power. For Anglophone Africa, the Plymouth Committee set by the British government in 1936, the Early of Plymouth, recommended steps on how to accelerate the provision of broadcast services in the colonies. [41]

The USA, British Connection to Broadcast in Africa

The British bequeathed the world with the public broadcast system while commercial and private radio is linked to the United States of America (USA) broadcast tradition [42]. In the case of the USA broadcast is textured by a rich tapestry of capitalism upon that influence the American capitalist value system. Although globally, commercial and private broadcast have become the focus of attention at the moment due to the new dynamics within broadcast, the public broadcast system up until now had been the dominant model in Africa [43]. Some believe that public broadcast in the African context is here to stay as it is deliberately protected by those who wield political power. In the views of Sethunya Tshepho Mosime, the British were systematic in their introduction of broadcast to their colonies in that a standing commission was put in place to oversee the implementation of broadcasting in Africa [45]. The Plymouth Committee was set by the British government in 1936 named after the Early of Plymouth, to step up or accelerate the provision of broadcasting services in British colonies (ibid). Notably, it is through such coordinated implementation in African states under British influence, that the public broadcasting model became the dominant model of broadcasting in Africa [47]. The British Government had anticipated the rapid development of radio broadcasting as far back as 1900 [48]. Buoyed by the developments in the sector and anticipating the future strategic importance of broadcasting in the administration of the empire, the British authorities quickly brought wireless telegraphy under public control with the enactment of the Wireless Telegraphy Act of 1904. This gave the British state powers to regulate and control broadcasting [50]. Wireless operators were required to be licensed [51]. The Post Office had the authority over the issuing of broadcasting licenses. After the First World War, the interest in radio broadcasting grew exponentially, such that by 1920 over 20 wireless stations had been established in the United Kingdom. Increased demand for radio programmes led to the British authorities to grant the Marconi Company permission to provide regular broadcasts [54]. Marconi's first broadcast was on 14 February 1922 [55]. The British Broadcasting Company (BBC) was later formed on 18 October 1922 by a group of wireless manufacturers, including Marconi and the General Electric Company [56]. The first general manager of the BBC, John Reith, advocated broadcasting as a public service with immense educational value [57]. The most dominant tool for broadcast in Africa is the radio [58]. This is due to its flexibility, low cost and oral character compatible with the African's love for storytelling. Infarct where the African could not write, they memorized events and passed them on to the other generation through oral communication. Oral communication occupied a critical role in communication. Radio also breached the undeveloped situation in Africa. Radio remains the top medium in terms of the number of people that it reaches. Even though television has shown considerable growth (especially in the 1990s) and despite a widespread liberalization of the press over the same period, radio still outstrips both television and the press in terms of reach [60]. The main exceptions to this are in the far south, in South Africa, where television and the press are both very strong, and in the Arab north, where television is now the dominant medium. South of the Sahara and north of the Limpopo River, radio remains dominant at the start of the 21st century. Television in Zimbabwe has remained undeveloped although with much potential.

1.4.5. From humble beginnings: Inside formal broadcast in Zimbabwe

As is the case with the history of broadcast in the in United States of America and elsewhere, broadcast in Zimbabwe also started at amateur level, although for the case of Zimbabwe this occurred much later than in the

United States of America [61]. In this respect, it would appear that developments in broadcasting are cyclical. Exactly 8 years after the inception of broadcast in Zimbabwe in 1941, professional broadcasting followed [62]. In 1930, the Imperial Airways of Southern Rhodesia installed a radio transmitter in Belvedere, in Harare, near the country's Meteorological offices [63]. The transmitter had been established for the provision of weather updates for the aviation sector in the country, at least for the few aircrafts that occasionally flew into the country linking England, South Africa and Zimbabwe [64]. The three engineers sought permission to broadcast during leisure time and government promptly granted them with a license [65]. Such were the humble beginnings of broadcast in the country. The linkage between aviation and broadcast in Zimbabwe is critical as it demonstrates the broadness of the linkages with other sectors. In this regard, the linkages of broadcast to aviation and telecommunications, is something that should excite researchers as it has not been explored in detail at least from a Zimbabwean thus African perspective. As this background reveals, broadcast in Zimbabwe was started for whiling up time by adventurous engineers whose mandate had no link with broadcast. Before this development, those with radios in the country had to tune in to foreign radio stations, such as the British Broadcasting Corporation (BBC). The 1930 experiment had provided the country with a radio service that the people could relate to in terms of issues pertaining to their immediate lives.

World War Influence to Broadcast in Zimbabwe

During the early years of broadcast, emphasis was on signal strength than quality of programme content [66]. Within a space of four years following the inception of broadcast in Harare, the transmission of radio broadcasting had expanded to the other cities such as Umtali (now Mutare), Gatooma (now Kadoma), Gwelo (now Gweru) and Bulawayo [67]. In Harare, the first broadcast studios were built at the post office along Manica Road in 1940, and upon their commissioning, a full time professional broadcaster was employed [68]. When the Second World War broke out, the authorities in Rhodesia agreed on the need for establishing a broadcast station that would inform Zimbabweans, especially those of European origins, about the war. In 1941, an additional radio station was established in Northern Rhodesia, now Zambia. This radio station became the focal point for broadcasting to the entire Federation covering Southern Rhodesia, Northern Rhodesia and Nyasaland; today Malawi [70].Later in 1957, the Rhodesian Broadcasting Act was passed in parliament to become law. It is through this Act that in September 1958 the Rhodesia Broadcasting Corporation (RBC) was established in Southern Rhodesia as a public broadcasting station [71]. Section 27, of the Rhodesia Broadcasting Act, conferred upon the RBC the sole right to broadcast in the country. This legacy was carried over into the modern day Zimbabwe. After the dissolution of the federation in 1963, the Southern Rhodesia Broadcasting Corporation (SRBC) was founded (ibid). The SRBC radio stations comprised the European and the African services. The European service, operated from Pockets Hill, Highlands, in Salisbury whilst the African service was hosted at Mbare Studios then known as Harare Studios . Later as broadcasting expanded in the country, Montrose Studios in Bulawayo were commissioned to air out programmes from Bulawayo [75].

1.4.5. Early forms of broadcast

In the views of Peter Golding, broadcasting plays a central role in modern society, not necessarily because of the capacity of television and radio to inform, educate and entertain, but because of the impact that the related

technologies have on the information and communications sector [76]. From antiquity, Zimbabweans broadcasted messages through the drum and other such like artifacts. The paper further asserts that broadcast is as old as speech. In African mysticism, the functionality of a drum is that of a deeper, symbolic and historical significance almost sacred, whilst in Western Culture drumming is simple entertainment. In African culture, the drum heralds political and social events attending ceremonies of birth, death and marriage. The drum is used to broadcast alarm or as a call to arms stirring up emotions for battle and war. The peculiar sound-beats from the drum are used to broadcast specific messages in particular communities. Relatedly, fire and smoke are a primordial telephone and a means of broadcast. The use of smoke in communication predates civilizations. It is Biblical. In the Old Testament, smoke from burnt offerings would lift to the sky in a straight line to demonstrate acceptance of the offering by the creator. If the smoke scattered it meant the offering had been declined.

Figure 1

Source: blog.africaimports.com/wordpress/2009/.../the-importance-of-drums-in-african-traditi...

1.4.6. Broadcast in zimbabwe

In 1980 at the country's independence, RBC was renamed the Zimbabwe Broadcasting Corporation. As a way of reconfiguring ZBC into an institution that would reflect the independent statehood of the new nation, the Zimbabwean Government sought advice from BBC on restructuring of the new ZBC [77]. The BBC recommended the establishment of four radio stations, one national television station and a second television channel. The new Zimbabwean Government was also encouraged to provide transmitter stations in those areas neglected by the colonial regime [79]. Despite the country investing in more transmitters, BAZ reports that the state of broadcasting transmission infrastructure in the country is far from achieving 'universal availability' as more transmitters were required. Since, 1980, Zimbabwe established at least twenty-four repeater sites for terrestrial frequencies. These transmitters cater for both radio and television services. Today even these

transmitters were far inadequate [83]. As observed by the 2003 BAZ report, only a few of the twenty-four transmitter sites that should be providing radio services in the country were working [84]. These sites were located in Harare, Bulawayo, Gweru, Rutenga, Kadoma, Mutorashanga, Chivhu and Masvingo. Furthermore, there are other sites that are providing one to three radio services out of the six radios stations the country now has. These are Kamativi, Kenmaur, Gokwe, Chiredzi, Chimanimani, Mutare, Nyanga, Mount Darwin, Karoi and Gwanda. It should be observed that whereas most of these transmitters that TRANSMEDIA inherited from ZBC are fitted with analogue equipment, the new radio stations which were licensed recently use digital signals for their broadcasts [87]. As a result this has presented a challenge for TRANSMEDIA, the signal carrier which needs to migrate its technology to digital if it is to remain relevant in the current broadcasting dispensation (ibid.). The BAZ also notes that some of the transmitter sites referred above provide limited services, either as a result of not being sufficiently equipped or because they are faulty [59]. Other sites may have problems relating to poor signal feed from the source (ibid).There are also some sites that are not providing any radio service at all. These are Plumtree, Mudzi, St. Albert's Mission, Kariba, Victoria Falls and Beitbridge. Four of these sites are actually not equipped to provide the service and these are Plumtree, Mudzi, Kariba and St. Albert's.

1.4.6. Broadcast in the 1990s in Zimbabwe

This period in the history of media in Zimbabwe is eventful. In 1990, Zimbabwe engaged the Economic Structural Adjustment Programme (ESAP), in an endeavour to prop up the economy which had started showing signs of stress. ESAP's ideological tenor was that of 'opening up the economy' in tandem with the dictates of liberalism. Opening up the country's economy became the basis upon which broadcast in Zimbabwe was run, at least in principle [94]. ESAP had far reaching implications on broadcast in terms of technology, regulatory framework, customer tastes, expectations, funding, institutional capacity and the nature and extent of competition than hitherto contemplated. On regulation, liberalization saw the desire for broadcasting among independent operators growing. Even opposition political parties and the civil society in Zimbabwe also joined the battle for opening up the airwaves as it was popularly known [97]. Unfortunately, the increased calls for opening up the media environment in the country were met with the introduction of tighter media laws such as AIPPA and BSA, among others [98]. On the technological front, liberalization resulted in Zimbabwe, like many African countries, seeing new satellite technologies becoming available to broadcasters through PanAmSat and Intelsat [99]. Since the satellite transmission and digital technology offer broadcasters more channels, better national coverage, regional networks, Pay TV, and create an appetite for significant domestic film production, the potential for growth and expansion in this area revolutionized the industry.

Through hindsight, however, despite the pressure to open up media and the broadcast sector in Zimbabwe, the media in the country has remained pretty the same as before the country's independence [101]. Onias Gumbo notes that it is regrettable that the permission for independent operators to open up radio and television has remained on paper, with implementation painfully slow [102]. Gumbo actually hopes that Zimbabwe will eventually act in a manner consistent with global trends. In this respect, it is instructive to note that over the last few years, several African countries have opened up their broadcasting sectors to private players (ibid.). These include Nigeria, Kenya, South Africa, Egypt, Mozambique and Tanzania. To date, broadcasting in Zimbabwe has remained heavily guarded and this has stifled growth in the sector [105]. Only slight changes have occurred

with regards to radio services, where there are now six terrestrial based radio services, the majority of whom are operated by the state broadcaster, ZBC. Under stress, threat and uncertainty and owing to increased international ostracisation as a result of allegations of human rights abuses, the beleaguered Zanu PF government introduced a short wave radio station, the *Voice of Zimbabwe* under the banner of ZBC, as a way of responding to the *Voice of America* and *Studio 7* which were beamed into Zimbabwe illegally.

The *Voice of Zimbabwe*, which broadcasts from Gweru in Midlands, commenced operation in 2007 (ibid). The name *Voice of Zimbabwe* is synonymous with the liberation struggle as it was first used during the liberation struggle to refer to the Zanu PF shortwave radio station in Mozambique during the struggle. The post-independence Voice of Zimbabwe is the world services of the ZBC just like the foreign service of the BBC. The mandate of *Voice of Zimbabwe* is, in the views of government, to tell the world the "real Zimbabwean story". Despite the tenuous history of broadcasting in Zimbabwe, two private radio stations have been introduced as part of freeing the airwaves. These are *Star FM* and *ZiFM*. However, the number of people seeking to operate radio in Zimbabwe is growing, as people's appetite for divergent views in the media in a country with a heavily polarized media grows [111]. Despite the hunger to operate radio by Zimbabweans at the time of study, the licensing of new radio operators has been put on ice as it is quite some time since *Star FM* and *ZiFM* were awarded licenses. The MISA is of the view that this might be an attempt to protect ZBC, the public broadcaster, as the institution struggles digitisation [112]. It is important to observe that the two private radio stations, *Star FM* and *ZiFM*, are owned through structures that have linkages with the ruling government (ibid.). *Star FM* is owned by the government controlled ZIMPAPERS where-as *ZiFM*, is owned by the Minister of Information and Communication Technology, Postal and Courier Services.

Star FM is the first private radio to rock the airwaves in Zimbabwe [115]. As earlier indicated, *Star FM*, is part of the Zimpapers stable, a government controlled publishing company. Star FM was launched on June 25, 2012. Although media critics, among them Mahoso, believe that the arrival of private radio stations has not brought significant contributions to the quality of debate concerning democracy as we now have much of the same, other critics believe that the different channels have provided choice as people can now tune into a radio station of one's choice. Mukotekwa believes that the inception of Star FM is a game changer in the broadcasting history of the country. This development signifies a milestone within the tenuous history of broadcast in Zimbabwe since 1933. Star FM, which was launched in Harare along Simon Mazorodze Road with limited coverage of the capital city, has since grown into a national radio broadcaster found in all parts of the country. *ZiFM*, launched on the 25th of August, 2012, is the second privately owned radio station in Zimbabwe. The arrival of *Star FM* and *ZiFM*, both of which use digital platform, has presented challenges for TRANSMEDIA, the signal carrier which is still running on analogue broadcasting equipment inherited from ZBH, as stated earlier. Therefore, there is urgent need for the country to digitize the signal career system for it to remain relevant to the current broadcasting dispensation [119].

The services for these radios are mainly provided in the Frequency Modulation (FM) broadcast . Two of the public broadcaster radios are also available in the HF broadcasting service band (Short Wave) and make use of the amplitude modulation. The two are Radio Zimbabwe and National FM. There are other radios broadcast services that reach some parts of the country from outside Zimbabwe in the FM, Low Wave, Medium Wave,

Short Wave and satellite bands (ibid). Some of the radio services reach the country by Zimbabwe's consent, through agreements concluded under the auspices of the ITU, but others are deliberately spilled or targeted into the country (ibid). They take advantage of the long distances that some of the frequency bands used can reach under the cover of ITU coordination processes, in violation of ITU radio regulations or taking advantage of ambiguities in the ITU Radio Regulations (ibid). It should also be observed that Zimbabwe's radio services reach other countries, particularly those services provided by FM transmitters located in boarder areas and those services provided by the two Short Wave transmitters in the country [124].

1.4.8. Television

In the views of BAZ, there is one terrestrial based TV service provided by the public broadcaster, ZBC. There were plans by the old ZBC to introduce a second service known as National Television (NTV). ZTV operates in the VHF television band and uses the PAL system [125].

Currently, the terrestrial based radio and television services in Zimbabwe are free to air services received through ordinary radio or television sets. These services can also be accessed through mobile phones.

1.4.9. Data Casting

A broadband data casting service is provided by the signal carrier, Transmedia, in Harare and Bulawayo [126]. This service provides international access or other data communication services, making use of broadcasting services bands (ibid.).

1.4.10. Legal Developments in the Broadcasting Sector: The 2000s

The 2000s, as stated earlier, saw an explosion of technological developments which led to the emergence of private broadcast stations around the world [128]. Africa was indeed affected by these developments which saw the liberation of the broadcasting sector in some countries. The year 2000 saw Jerry Jackson successfully challenging the monopoly of the ZBC before the Supreme Court. Jackson had 'invaded' the Zimbabwean airwaves as he had started broadcast as Capitol Radio without authority from the state [130]. By successfully challenging ZBC monopoly, Capitol Radio station left the government exposed to a legal minefield concerning broadcasting since everyone who was waiting to broadcast would follow this precedent [131]. Despite being a pirate radio station, Capitol Radio could now broadcast unhindered as it had won its case in a court of law (ibid.). Technically, the ruling by the court on this matter had literally opened the broadcasting sector to new entrants (whosoever wanted to broadcast could now do so as a result of the ruling) despite the shortage of channels to accommodate them [133]. This would lead to chaos in the sector [134]. Government had to resort to the Presidential Powers (Temporary Measures Act, chapter 10:20), in order to contain this legal quandary, [135]. As observed, the legal problems bedevilling the broadcasting sector have their roots in the late 90s. Mazango argues that the period after 1990 was a period of apparent lapse in terms of policy formulation on the part of government in Zimbabwe [136]. He says advances in satellite technology and internet brought along with them policy posers that presented the country with new challenges (ibid.). Zimbabweans could now access millions of digitally encoded material just at the click of a button, a development which the government can neither monitor

nor control (ibid.).

1.4.11. New directions: Prospects and Challenges

Technologically, Zimbabwe is an information 'dinosaur' [141]. There has been very little capitalization and technological upgrade in what subsists as the information industry in Zimbabwe today. "The digitisation revolution in the broadcast subsector is well behind schedule [142]. Even when it catches up willy-nilly, thanks to the global digital migration deadline of 2015, Zimbabwe will discover it lacks sufficient investment in the creative industries which should have been a concomitant of the digitization investment programme. 'Consequently, Zimbabwe may be fated to evolve as an information consumer market, and not as information market [143].The effect of what is happening with media convergence is more than just an ordinary shift in technology [144]. It fundamentally alters the rules of the game and thereby redefining relationships between industries, the technology involved audiences, ownership structures and markets [145]. Due to the way that content is being consumed on multiple devices by viewers the world over, this calls for meaningful strategic partnerships, mergers and acquisitions. Alliance across industries in Zimbabwe have become viable as a result of this development and hence the need for further business exploration in the digital media business [146].However, due to the technological changes that have occurred in the sector, broadcasting is no longer a matter of mass consumption It is increasingly becoming more and more personalized. Generally, in the past, broadcast systems delivered a wide range of educational, informational and entertainment programming to viewers and listeners [In the digital age, individuals have more control in terms of consumption of media products [147].

Figure 2

Source: Update on Zimbabwe's digitisation raises doubts about its "progress"- project 25% complete, down from 34% last year

135

1.4.11. Summary and Conclusion and recommendation

The Broadcasting sector in Zimbabwe traces roots to other sectors of the information and communications industry, as telecommunications, aviation and railways. More often than not, the linkage with broadcasting with other sectors is taken for granted. Therefore, in outlining and discussing the above issues, this paper attempted an entire perturbation of broadcasting in Zimbabwe. The paper examines key issues about broadcasting in the digital age. Considered also were the full drapery of the issues and events leading to the establishment of broadcasting in Zimbabwe. As the paper traced and outlined the historical tapestry of broadcasting in the country, efforts to seek insight from the experiences of neighbouring countries regarding developments in the sector were also made. Whilst Zimbabwe is recorded as the first Southern African country to establish broadcasting in the region, it is ironic that today, the country has to learn about DBM from the experiences of her neighbours such as Namibia who only established their broadcasting systems much later. Despite being a late comer to broadcasting in the Southern African region, Namibia has since migrated to the digital platform.

Our personal judgments regarding the future of broadcasting in Zimbabwe as contained in the findings of the study constituted the recommendations for the study. Such judgments also reflected our personal value judgments relating the position of the study vis-avis broadcastin in Zimbabwe as well as its nature

References

[1].   ((Last Moyo) in Johnston, D.H (ED)) Encyclopedia of International Media and Communications, 'Status of Media in Zimbabwe': New York Academic 2003

[2].   (Miler Colin) Zimbabwean Broadcasting: The International Section of Broadcast Archive Harare Zimbabwe 2018

[3].   (Walter Mignolo.) Epistemic Disobedience and the Decolonial Option: A Manifesto. Duke University, 2011

[4].   ((Last Moyo) in Johnston, D.H (ED)) Encyclopedia of International Media and Communications, 'Status of Media in Zimbabwe': New York Academic 2003

[5].   blog.africaimports.com/wordpress/2009/.../the-importance-of-drums-in-african-traditi...

[6].   (ibid)

[7].   https://www.jenmansafaris.com/heartbeat-of-africa-beat-of-a-drum/

[8].   (Clever Chirume) Spectrum Management in the Global Age: Zimbabwe's Transition from Analogue to Digital Broadcasting, Durban, South Africa, 2016

[9].   (ibid)

[10]. (ibid0

[11]. (P. B. Seel, & A. E. Grant,) Broadcast Technology Update: Production and Transmission. Focal Press. Boston Oxford Johannesburg Melbourne New Delhi Singapore, 1997

[12]. (Jacqueline H. Wolf) Historical Methods, Athens OH USA 2018

[13]. (Joseph Conrad) Heart of Darkness, Blackwood's Magazine 1899

[14]. (Ross C. Murtin (ed.)) A critical History of Heart of Darkness, Bedford Books of St Martin's Press 1996

[15]. (Clever Chirume) Spectrum Management in the Global Age: Zimbabwe's Transition from Analogue to Digital Broadcasting, Durban, South Africa, 2016

[16]. ibid

[17]. ibid

[18]. (Ernerst Mudzengi, E. et. al.) Media in Zimbabwe, Zimbabwe Open University, Harare, Zimbabwe 2003

[19]. (Nkosi. Ndlela, N.). Broadcasting Reforms in Southern Africa: Continuity and Change in the Era of Globalization. Westminster Papers in Communication and Culture. Vol. 4(3). 2007

[20]. (Clever Chirume), Globalisation and the Politics of Media Regulation in Zimbabwe: A study of the Origins of the Access to Information and Protection of Privacy Act (AIPPA) 2002. University of Zimbabwe: Harare, Zimbabwe. Unpublished Master of Arts Dissertation University of Zimbabwe, Harare. 2005.

[21]. ibid

[22]. (Nkosi. Ndlela, N.). Broadcasting Reforms in Southern Africa: Continuity and Change in the Era of Globalization. Westminster Papers in Communication and Culture. Vol. 4(3). 2007

[23]. (Jacqueline H. Wolf) Historical Methods, Athens OH USA 2018

[24]. (ibid)

[25]. (E.T. Mapanzure) A Study of the Impact of Technology on Public Broadcasting in Zimbabwe. Univesity of Zimbabwe, Harare 2000.

[26]. (A. Mafeje) In Search of An Alternative: A collection of Essays on Revolutionary Theory SAPES BOOKS, Harare 1992

[27]. (S. Kwame) How not to teach African Philosophy APA Newsletter 91 (1). 1992

[28]. A. Mafeje) In Search of An Alternative: A collection of Essays on Revolutionary Theory SAPES BOOKS, Harare 1992

[29]. (P. B Seel. & A. E. Grant) Broadcast Technology Update: Production and Transmission. Focal Press. Boston Oxford Johannesburg Melbourne New Delhi Singapore.1997

[30]. (P. Golding) Next Generation Wireless Applications: Creating Mobile Application in a Web 2.0 and Mobile 2.0 World. John Wiley and Sons Ltd: UK. 2008

[31]. (P. B. Seel, & A. E. Grant,) Broadcast Technology Update: Production and Transmission. Focal Press. Boston Oxford Johannesburg Melbourne New Delhi Singapore, 1997

[32]. ibid

[33]. ibid

[34]. ibid

[35]. ibid

[36]. ibid

[37]. Government of Zimbabwe National Survey on Broadcasting in Zimbabwe (Broadcasting Authority of Zimbabwe) July-September 2003

[38]. ibid

[39]. D. McQuail, New Horizons for Communication Theory in the New Media Age (Chapter in the book edited by Valdivia, Blackwell Publishing New Delhi ,(2006)

[40]. D. McQuail, New Horizons for Communication Theory in the New Media Age (Chapter in the book edited by Valdivia, Blackwell Publishing New Delhi ,(2006)

[41]. S. T. Mosime. Botswana Television BTV Negotiating Control and Cultural Production in a Globalising Context: A Political Economy of Media State Ownership in Africa PhD research Durban(2007)

[42]. (N Miller and R Allen) The Post-Broadcasting Age: New technologies, New Communities Papers from the 25th and 26th University of Manchester Broadcasting Symposia Luton Press London. 1995

[43]. (N. Ndlela). Broadcasting Reforms in Southern Africa: Continuity and Change in the Era of Globalisation. Westminster Papers in Communication and Culture. Vol. 4(3). 2007

[44]. ibid

[45]. (S. T. Mosime). Botswana Television BTV Negotiating Control and Cultural Production in a Globalising Context: A Political Economy of Media State Ownership in Africa PhD research Durban 2007

[46]. ibid

[47]. (N Miller and R Allen) The Post-Broadcasting Age: New technologies, New Communities Papers from the 25th and 26th University of Manchester Broadcasting Symposia Luton Press London. 1995

[48]. (N. Ndlela). Broadcasting Reforms in Southern Africa: Continuity and Change in the Era of Globalisation. Westminster Papers in Communication and Culture. Vol. 4(3). 2007

[49]. (P. B. Seel, & A. E. Grant,) Broadcast Technology Update: Production and Transmission. Focal Press. Boston Oxford Johannesburg Melbourne New Delhi Singapore, 1997

[50]. (N., K. Metcalf, et. al.) Broadcasting Policy and Practice in Africa Published by Article 19. 2003

[51]. ibid

[52]. ibid

[53]. (T. J. Chari, et. al.) Media and Communication in Zimbabwe and Africa. Module BAMS301 ZOU Fidelity Printers: Harare2003

[54]. ibid

[55]. ibid

[56]. ibid

[57]. (N Miller and R Allen). The Post-Broadcasting Age: New technologies, New Communities Papers from the 25th and 26th University of Manchester Broadcasting Symposia Luton Press London. 1995

[58]. ibid

[59]. (E.T. Mapanzure) . A Study of the Impact of Technology on Public Broadcasting in Zimbabwe. Univesity of Zimbabwe, Harare 2000

[60]. (W Mano). 'Editorial,' Westminister Papers in Communication and Culture, Special Issue November 2005: 1-7. 2005

[61]. ibid

[62]. ibid

[63]. (N. Ndlela). Broadcasting Reforms in Southern Africa: Continuity and Change in the Era of Globalisation. Westminster Papers in Communication and Culture. Vol. 4(3). 2007

[64]. Mlambo ZBC Magazine Harare 1992

[65]. ibid

[66]. ibid

[67]. ibid

[68]. National Survey on Broadcasting in Zimbabwe July-September 2003 (Broadcasting Authority of Zimbabwe

[69]. ibid

[70]. (T. J. Chari, et. al.) Media and Communication in Zimbabwe and Africa. Module BAMS301 ZOU Fidelity Printers: Harare2003

[71]. National Survey on Broadcasting in Zimbabwe July-September 2003 (Broadcasting Authority of Zimbabwe)

[72]. ibid

[73]. ibid

[74]. ibid

[75]. (E.T Mapanzure) A Study of the Impact of Technology on Public Broadcasting in Zimbabwe. Univesity of Zimbabwe, Harare 2000

[76]. (P. B. Seel, & A. E. Grant,) Broadcast Technology Update: Production and Transmission. Focal Press. Boston Oxford Johannesburg Melbourne New Delhi Singapore, 1997

[77]. (T. J. Chari, et. al.) Media and Communication in Zimbabwe and Africa. Module BAMS301 ZOU Fidelity Printers: Harare2003

[78]. ibid

[79]. National Survey on Broadcasting in Zimbabwe July-September 2003 (Broadcasting Authority of Zimbabwe)

[80]. ibid

[81]. ibid

[82]. ibid

[83]. The Herald, Zim Limps to digitalization 17 June 2015

[84]. ibid

[85]. ibid

[86]. ibid

[87]. Metcalf, K. N., et. al., (2003) Broadcasting Policy and Practice in Africa Published by Article 19. 2009

[88]. Ibid

[89]. (J. Masuku) The Public Broadcaster Model and the Zimbabwe Broadcasting Corporation: An analytical study. Unpublished Master of Philosophy in Journalism, Stellenbosch University, Cape Town 2011

[90]. National Survey on Broadcasting in Zimbabwe July-September 2003 (Broadcasting Authority of Zimbabwe)

[91]. ibid

[92]. ibid

[93]. ibid

[94]. ibid

[95]. (C. Chirume) Globalization and the Politics of Media Regulation in Zimbabwe: A study of the Origins of the Access to Information and Protection of Privacy Act (AIPPA) 2002. University of Zimbabwe: Harare, Zimbabwe. Unpublished Master of Arts Dissertation University of Zimbabwe, Harare. 2005

[96]. (S. H Chiumbu & E. M. Mazango). Introduction to Media Policy, Law and Ethics. Jongwe Printing and Publishing Company: Harare   2000

[97].   ibid

[98]. (O. Z. Gumbo) Public Broadcasting in Zimbabwe History and Contemporary Perspectives and Future Prospects. University of Zimbabwe: Harare, Zimbabwe 1996

[99].   ibid

[100]. ibid

[101]. (E Mudzengi,. et. al). Zimbabwe Open University, Harare, Zimbabwe 2003

[102]. ibid

[103]. (C. Chirume) Globalization and the Politics of Media Regulation in Zimbabwe: A study of the Origins of the Access to Information and Protection of Privacy Act (AIPPA) 2002. University of Zimbabwe: Harare, Zimbabwe. Unpublished Master of Arts Dissertation University of Zimbabwe, Harare. 2005

[104]. (S. H Chiumbu & E. M. Mazango). Introduction to Media Policy, Law and Ethics. Jongwe Printing and Publishing Company: Harare   2000

[105]. ibid

[106]. (T. J. Chari, et. al.) Media and Communication in Zimbabwe and Africa. Module BAMS301 ZOU Fidelity Printers: Harare2003

[107].   ibid

[108]. ibid

[109]. ibid

[110]. National Survey on Broadcasting in Zimbabwe July-September 2003 (Broadcasting Authority of Zimbabwe)

[111]. (J. Masuku) The Public Broadcaster Model and the Zimbabwe Broadcasting Corporation: An analytical study. Unpublished Master of Philosophy in Journalism, Stellenbosch University, Cape Town   2011

[112]. ibid

[113]. ibid

[114]. MISA Zimbabwe: Submission and Position Paper on Broadcasting in Zimbabwe (2001)

[115]. National Survey on Broadcasting in Zimbabwe July-September 2003 (Broadcasting Authority of Zimbabwe)

[116]. Proposed Amendments to the Broadcasting Services Act 2001 MISA – Zimbabwe

[117]. (T. J. Chari, et. al.) Media and Communication in Zimbabwe and Africa. Module BAMS301 ZOU Fidelity Printers: Harare2003

[118]. (J. Masuku) The Public Broadcaster Model and the Zimbabwe Broadcasting Corporation: An analytical study. Unpublished Master of Philosophy in Journalism, Stellenbosch University, Cape Town   2011

[119]. National Survey on Broadcasting in Zimbabwe July-September 2003 (Broadcasting Authority of Zimbabwe)

[120]. (Madikiza). Broadcast Digital Migration Policy in South Development Bank of Southern Africa, South Africa (2011

[121]. The Sunday Mail, Digitisation The full Story, 27 September 2015

[122]. (E. Mudzengi) Zimbabwe Open University, Harare, Zimbabwe 2003

[123]. ibid

[124]. ibid

[125]. (C. Chirume) Globalization and the Politics of Media Regulation in Zimbabwe: A study of the Origins of the Access to Information and Protection of Privacy Act (AIPPA) 2002. University of Zimbabwe: Harare, Zimbabwe. Unpublished Master of Arts Dissertation University of Zimbabwe, Harare. 2005

[126]. ibid

[127]. ibid

[128]. (O. Z. Gumbo) Public Broadcasting in Zimbabwe History and Contemporary Perspectives and Future Prospects. University of Zimbabwe: Harare, Zimbabwe 1996

[129]. (T. J. Chari, et. al.) Media and Communication in Zimbabwe and Africa. Module BAMS301 ZOU Fidelity Printers: Harare2003

[130]. MISA Zimbabwe: Submission and Position Paper on Broadcasting in Zimbabwe (2001)

[131]. (Nkosi. Ndlela, N.). Broadcasting Reforms in Southern Africa: Continuity and Change in the Era of Globalization. Westminster Papers in Communication and Culture. Vol. 4(3). 2007

[132]. ibid

[133]. ibid

[134]. (S. H Chiumbu & E. M. Mazango). Introduction to Media Policy, Law and Ethics. Jongwe Printing and Publishing Company: Harare   2000

[135]. Ibid

[136]. Ibid

[137]. ibid

[138]. (Nkosi. Ndlela, N.). Broadcasting Reforms in Southern Africa: Continuity and Change in the Era of Globalization. Westminster Papers in Communication and Culture. Vol. 4(3). 2007

[139]. (S. H Chiumbu & E. M. Mazango). Introduction to Media Policy, Law and Ethics. Jongwe Printing and Publishing Company: Harare   2000

[140]. (E. Muchena). Teaching Journalism at a Distance: The case of the Zimbabwe Open University (ZOU) (Harare Regional Centre) IOSR Journal of Humanities and Social Science vol17, Issue 3 Nov-December, www.iosr journals.org. 2013

[141]. (P. Golding). Next Generation Wireless Applications: Creating Mobile Application in a Web 2.0 and Mobile 2.0 World. John Wiley and Sons Ltd: UK. 2008

[142]. (Madikiza). Broadcast Digital Migration Policy in South Development Bank of Southern Africa, South Africa (2011

[143]. (T Olwal M Masonta L Mfupe M Mzyece) Broadband ICT Policies in Southern Africa: Initiatives and

Dynamics Spectrum Regulation www.IST-Africa.org/Conference 2013

[144]. (N.Carr). The Big Switch: Rewiring the World, from Edison to Google. 1st Ed. W.W. Norton Company Ltd: New York, London. 2008

[145]. (H.K. Yeung, and Y.S. Hui Challenges in the migration to 4G mobile systems, City University Hong Kongy 2003

[146]. (M. Raboy). Rethinking Broadcasting in a Global Media Environment. University of Montreal: Canada. 2002

[147]. (N. C. Lesame) New Media Technology and Policy in Developing Countries. Van Shaik: Pretoria 2014