SPECTRUM MANAGEMENT IN THE GLOBAL AGE: ZIMBABWE'S TRANSITION FROM ANALOGUE TO DIGITAL BROADCASTING

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A thesis submitted in fulfilment of the requirements for the degree of Doctor Philosophy (PhD)

Centre for Communications and Media Studies

University of KwaZulu-Natal

Durban, South Africa

November, 2015

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Statement of Original Authorship

The work contained in this thesis has not been previously submitted to meet requirements for an award at this or any other higher education institution. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made.

Signature……………………………………….

Date…………/……………/………………………

Dedication

To my wife, children and parents

Acknowledgements

Producing this dissertation has been crossing the Rubicon. The thesis represents a three-year journey of enduring multiple silent agonies in my life. My wife Tendai, children Sean and Charmaine, parents, mother in law, and siblings sacrificed dearly as I devoted my attention and presence to this work. I am sorry that you had to experience this with me - I promise I will make it up to you. My wife and mother, Evangelister, kept praying for me day and night throughout the period of my study. To borrow from my brother when recounting his experiences during his Doctoral studies at Ohio State University in the United States of America (USA), Professor Erasmus Chirume says, 'each of us has a story to tell,' Mine is about three years of homelessness, financial woes and chronic emotional struggles during my stay at University of KwaZulu Natal. Typical of any journey, there are people who inspired and supported me during the difficult times. I would like to acknowledge just some of those people. My thanks go to my creator, for giving me life and the strength to conduct the study. First, the journey would not have been successful were it not for the patient and inspiring supervision by Professor Ruth Elizabeth Teer-Tomaselli. Her guidance and cogent support for my work and the faith in my ability and tolerance of 'my way' of working were pillars to this study. My acknowledgement goes to Dr Gift Kalisto Machengete for laying the philosophical foundations upon which my advanced studies would forever be anchored. Your informal lectures in research philosophy during our long working trips abroad have left an indelible mark in terms of my academic impressions. I also want to thank the Zimbabwe Government's Office of the President for granting me study leave for the period of my research. My acknowledgements also go to Bishop Dr. Itai Patience Hove for nourishing my mind with the word of hope, which prevented my decline into a paralysing depression. I also want to thank Pastor Suware and wife for their prayers and support. My thanks also go to my sister, Chipo Chirume and her son Obi, for providing additional funding for my studies. My brother Ernest Chirume, who also himself is engaged in PhD studies at the University of Zimbabwe, assisted with the reviewing of some of the sections of this study. I also thank my uncle, Mr Conrad Mudavanhu and his wife Agnes, daughter Sharon and son Tarisai for funding my trips to and from South Africa, at the expense of their comfort. Cousin Tarisai, a qualified telecommunications and networking technician, taught me the language of the fascinating field of telecommunications and broadcasting. Without his thought-provoking insights on sector, the bigger picture regarding the field could otherwise have been lost. My sisters-in-law, Olga, Patricia and Grace Gwaze, all supported me in different ways. Olga Gwaze gave me financial and emotional support. Thank you all. My neighbours Kizito Gweshe and wife supported and encouraged me to remain focused. Also, many thanks to my friend and colleague Tichaona Kamikani for assisting me in many ways. The Muchaurawa family offered me an office in Zimbabwe, from where part of the writing of my thesis was done. Many thanks also go to

Abbreviations and Acronyms

AIPPA	Access to Information and Protection of Privacy Act
AM	Amplitude Modulation
APT	Asia Pacific Telecommunity
BAZ	Broadcasting Authority of Zimbabwe
BBC	British Broadcasting Corporation
CCMS	Communication, Culture and Media Studies
CCU	Content Creation Unit
CNN	Cable News Network
CSU	Central Statistics Unit
DBM	Digital Broadcasting Migration
DRB	Digital Radio Broadcasting
DSL	Digital Subscriber Line
DSO	Digital Switch Over
DSTV	Digital Satellite Television
DVB T	Digital Video Broadcasting Terrestrial
EHF	Extra High Frequency
ESAP	Economic Structural Adjustment Programme
EU	European Union
FES	Friedrich Ebert Stiftung
FM	Frequency Modulation
GTA	Government Telecommunications Authority

HF	High Frequency
ICT	Information Communication Technology
IMF	Infrastructural Mobilisation Fund or International Monetary Fund
IMPI	Information and Media Panel of Inquiry
IMT	International Mobile Telecommunications
ITU	International Telecommunications Union
LAN	Local Area Network
LOMA	Law and Order Maintenance Act
LW	Long Wave
MDC	Movement for Democratic Change
MEC	Media and Ethics Commission
MISA	Media Institute of Southern Africa
MIT	Massachusetts Institute of Technology
MMT	Mass Media Trust
MSK	Minimum Shift Key
MSU	Midlands State University
MW	Medium Wave
NDC	National Defence College
NHBZ	National Health Board of Zimbabwe
NTSC	National Television Systems Committee
NTV	National Television
NUST	National University of Science and Technology

NWICO	New World Information and Communications Order
OSA	Official Secrecy Act
PAL	Phase Alternation Line Rate
PCS	Personal Communications Services
POSA	Public Order and Security Act
POTRAZ	Postal and Telecommunications Regulatory Authority of Zimbabwe
QPKS	Quadrature Phase Key Shift
RBC	Rhodesia Broadcasting Corporation
RF	Radio Frequency
SABC	South African Broadcasting Corporation
SADC	Southern Africa Development Community
SFN	Single Frequency Network
SIRDC	Scientific Industrial Research and Development Centre
SRBC	Southern Rhodesia Broadcasting Corporation
STB	Set Top Box
SW	Short Wave
UN	United Nations
USA	United States of America
UZ	University of Zimbabwe
VHF	Very High Frequency
WB	World Bank
WUA	Women's University in Africa

ZANU PF	Zimbabwe African National Union Patriotic Front
ZAPU	Zimbabwe African Peoples Union
ZBC	Zimbabwe Broadcasting Corporation
ZBH	Zimbabwe Broadcasting Holdings
ZIM-ASSET	Zimbabwe Agenda for Sustainable Socio-Economic Transformation
ZIMCHE	Zimbabwe Council for Higher Education
ZIMPAPERS	Zimbabwe Newspapers
ZIMPOST	Zimbabwe Postal Services
ZNA	Zimbabwe National Army
ZOL	Zimbabwe Online
ZOU	Zimbabwe Open University
ZUJ	Zimbabwe Union of Journalists

Abstract

Global strategic objectives to migrate from analogue to digital have arisen. Alongside hundred and ninety two other members of *the International Telecommunications Union (ITU),* Zimbabwe finds herself under obligation to fulfil international regimens regarding the broadcasting sector, whilst facing internal political, economic and ideological constraints. As explained, these challenges and constraints militate against the country's aspirations to fulfil international obligations regarding digital broadcasting migration. The current digital framework in the broadcasting sector yields benefits which include the efficient utilisation of scarce radio frequencies.

The internet and the associated burgeoning technologies have led to a new landscape of economic and social activities and relations. This has impacted the quality of debate in the public sphere. However, despite these benefits there are outstanding issues which need to be addressed. These include the envisioning of the programme. From a philosophical and practical viewpoint, the study probed the reasons for DBM, its constitutive ontology, economics and politics among a host of other issues. The study also probed Zimbabwe's considerations about digitisation and its impact. It is against this tapestry that the study discussed the possible overlapping issues of technology, funding, ideology, regulation and content as they relate to digital broadcasting migration. In terms of methodology, the study lends itself to the qualitative research paradigm. Predominantly, studies linked to transitions have favoured the qualitative paradigm. This is the case with digital broadcasting migration. In general, transitions involve delicate and complex processes. They disrupt the functioning of society. Regulations help bring stability in society, during transition.. In the context of this study, a policy is considered a proverbial 'bridge' used to narrow the gap between where a country is, and where it wants to be. It is against this drapery of issues that the engagement with the broadcasting sector in a changing global environment required 'deep-drilling' in terms of methodology. The qualitative paradigm is incisive and thus drills deeply into issues. Also considered in the study were the researcher's values, within the context of specific philosophical assumptions, such as ontology, epistemology, doxology, praxeology and axiology. The engagement with these philosophical research assumptions was critical for a perceptive and deeper understanding of digital broadcasting migration in Zimbabwe. It facilitated the selection of the study's methodology. The study drifts from the cultural imperialism thesis (a philosophy whose roots are located in the Western Academy), to settle for theories such as could pivot the reconciliation and rehabilitation of Africa of centuries of deformities. Theories such as cultural imperialism dominated debates in the information and communications sector of 'developing countries' since the 1970s right through to the 1990s. The weakness of the cultural imperialism

thesis in engaging issues about the new environment is that apart from shifting the blame for the developing world miseries onto other countries, the theory fail to provide alternative wisdom through which the small countries could possibly move forward. Therefore, study is swayed by new insights such as pragmatism which seeks practical solutions to people's problems. As a result, the study adopts Castells' *Information Society theory*. Perhaps with the exception of Marshall McLuhan, Emmanuel Castells' *Information Society theory* has offered critical insights about the architecture of the new media landscape. It is in the search for new directions that the study adopted the theory through which issues of digital broadcasting migration in Zimbabwe were to be understood. The responses I got for the request for financial support from various organisations were revealing about the attitude of Zimbabweans regarding the issue. Through the responses to my request I observed the triviality the private sector considered not only research funding but the gamut of manpower development. At the national level very little if anything, was devoted to research. As a result, I concluded that research was the least considered aspect of the Zimbabwean academic culture. The discussion of the internet the mobile sector and other telecommunication platforms was not deliberate, but a result of the convergence. The linkages between broadcasting and other platforms is a phenomenon of the moment in as much as it is of history. Convergence which was viewed in bad taste alongside such tendencies as monopoly and oligopoly for students of media economics not long ago, has became a naturalised aspect of the evolution of current media. The observations that Zimbabweans are divided and suspicious of each other were critical to the study as it has ramifications on the manner in which DBM would be implemented and also whether the country would succeed in implementing the programme. Discussed below therefore are some of the recommendations to emerge from the study. As part of the study's recommendation a central feature of the study, was the proposal for the setting up of an all stake-holder committee for the country. Such committee would research around the strategic issues at the ITU. The proposal came about due to the growing strategic role of the information and communications sector in the economy. Observed was also the need for a strategy, which defined the mechanisms of growing the information and communications sector of small countries at both the continental African Union and national Zimbabwean levels. This could be achieved through the promotion of research and development around the strategic issues of DBM. The study observed the need to explore mechanisms through which weaker nations could possibly combine resources to overcome some of the challenges, in transforming their broadcasting sectors. Ideally, this could result in a continental or even regional strategies regarding DMB as the current approaches are ineffectual. A credible, robust and practical strategy was thus required for Africa to become a giant in terms of information and communications. It is within the context of such proposals that although with an ulterior

motive, the proposals by a Chinese firm Star Times Communications, for the sharing of infrastructure between Zimbabwe and Tanzania, provides for a possible model upon which small countries could share digital broadcasting infrastructure. Another proposal made during the study, was for Zimbabwe to consider the 'reverse - engineering' of set top boxes (STBs) as a way for the country to cut on the costs for importing these gadgets, but most importantly also for the country to cash in on the windfalls to be realised from the sale of such gadgets and other electronic devices linked to DBM. Proposed also was the need for a technological policy that would specify how the country needs to handle issues of technology in terms of research and development and also in terms of procurement. Due to corruption many times government officials have procured incompatible or obsolete equipment which have been rendered useless upon arrival. Digital broadcasting migration in the case of Zimbabwe can be considered as a phenomenon in search of perspectives. Some of the academics who were interviewed for the opinions about the programme struggled to make meaning of the programme. One academic openly admitted to the lack of knowledge about DBM. Ordinarily academics are considered opinion leaders in society especially in the areas of specialisation. By extrapolation if lectures communications lacked knowledge about DBM the situation with the ordinary citizens could even be worse. The Zimbabwean broadcasting sector was undercapitalised and in need of a major facelift in terms of the policy framework, technological investment, content among other issues. Most fundamentally, the country needs policies that adapt change. The roll-out of digital broadcasting migration in Zimbabwe is an on-going process. Therefore, new insights about the programme are needed. The information and communications sector has become dynamic, just as the technology upon which the sector is based. New insights, in terms of theory are required. Most importantly, an area for further research concerning technology in Africa would be its relations with the 'ordinary' people in the streets and some of the country's remote areas rather that the perspectives of the erudite such as scholars and government officials.

Key Words

Analogue, Digital Broadcasting, Radio Spectrum, Zimbabwe

Introduction

Significant changes have swept across the broadcasting sector, impacting the information and communications industry (Raboy, 2003; Braman, 2009). Marc Raboy and Sandra Braman observe that the changes in this sector are underpinned by the increasingly converging platforms of communications, whose linkages have led to an upsurge in the demand for radio frequencies. Radio frequencies are a 'scarce' natural resource. However, this is no longer the case in the digital age. Perceptively, Nod Miller and Rod Allen, observe that the digital age, has resulted in "bandwidth scarcity being replaced by bandwidth multiplicity. Further it has resulted in the existing paradigms for the management of radio and television service provision, based on the allocation of limited resources in the public interest, becoming utterly obsolescent" (Miller and Allen, 1995: vii). In simple terms and for the requirements of the study, radio frequencies can be defined as the channels through which communication is conducted. The demand for greater capacity utilisation in terms of radio frequencies cut-across communication platforms. In agreement with Marc Raboy and Sandra Braman, Guy Berger notes also that the changes in the information and communications sector have led to "the demand for policies that adapt change" (Berger 2010:15).

According to a report by *the International Telecommunications Union (ITU),* the internet and burgeoning associated technologies have led to new economic and social relations (ITU report, 2013). As a result, the way people communicate has significantly changed. A new jargon has emerged to match the new communication terrain and reality. David Bell and Barbara Kennedy, thus observe "there is a sense of an era of the 'dotcom bubble' proliferated by new words such as app, rip, burn, cookie and instant message among others" (Bell and Kennedy, 2007:3). The most significant changes in the information and communications sector have occurred in broadcasting. It is therefore, not by coincidence that both television and radio are considered the most politically and socially sensitive applications in the sector. Partly, this is due to the fact that both use frequency spectrum, a public resource for a purpose that relates to the freedom of information and cultural diversity (Rancy *et. al.,* 2011). Additionally, radio frequencies are also used in a variety of sectors of a country's economy as illustrated in figure 1.1 below, in chapter 1.

For both the powerless and mighty countries, the changes in broadcasting have brought about opportunities for communications and challenges in terms of policy, technology, content, funding and ideology (Candel, 2007). These changes are occurring against the need to safeguard national identity

ideals, admittedly at nascent stage. At the political level, the growing liberal ideology[1] is also considered to be behind the changes in the information and communications sector (Ubayasiri, 2006). The changes are further influenced by the desire to tap into the democratic potential of the media in general, and broadcasting sector in particular (Ubayasiri, 2006).

Perceptively, Lincoln Dahlberg observes that "the decentralised communications within cyber space are seen as offering the basis upon which 'rational-critical discourses'[2] are facilitated" (Dahlberg, 2006:1). This desire is directly linked to the political and social function of broadcasting in society. Notably, the changes in the information and communications sector as observed by Maria Miller, the Secretary of the State for Culture, Media and Sport in the United Kingdom, in a speech delivered to the *Royal Television Society in London,* have also been influenced by the prevalence of advanced technology and the need for greater frequency capacity (Miller, 2013). Miller, thus observes that "today's average viewer is exposed to hundreds of channels to choose from… flat screen tellies are the norm… and you can access television through tablets, Smartphone, consoles… basically any device that is connected to the internet" (Miller, 2013).

Relating to television the most intriguing issue is that "a lot of what can be done on the computer in the office such as typing, shopping, banking, paying bills and email, will in future, be conducted through television in the comfort of one's couch[3] (Mapanzure 2000:9). However, in order to fully enjoy the functions of the 'magic box' (as television is sometimes called), there is a need to harness increased frequency utilisation from existing 'pipes' (Galperin, 2005; Rancy et. al. 2011). This also relates to the entire information and communications sector. Simply, the concept of 'pipe,' as employed in the study denotes a 'spectrum' or 'channel' through which information is communicated. In remarks made in a speech by the chairman of the Federal Communications Commission (FCC), Michael K. Powell, regarding the *New Directions in Wireless Policy* relating to *Broadband Migration III,* the demand for high capacity radio frequency utilisation not only requires responsive technical innovations but also suave administrative interventions (Powell 2002). 'Capacity utilisation' relating to radio frequencies in the context of this study,

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1 For deeper engagement with issues of liberal democracy, the readings of John Locke (1632-1704), can be useful.

2 The concern however with e-democracy is that it is dominated by commercial interests, private conversation and individualised forms of politics.

3 In some countries with advanced technology, people already enjoy the additional functions of television

relates to the ways and means of harnessing greater use of radio frequency spectrum in different sectors in the information and communications industry. **This research is one typical case study which sought to profile Zimbabwe's efforts to fulfil her international obligations in terms of the global regulatory regimens regarding the migration from analogue to digital broadcasting within given timelines.**

This study treats upon the themes of DBM, themes not in themselves new, yet here so presented as to give them a new significance, revealing springs of action in terms of the implementation of the transition, showing the important bearings of the programme's trajectory, and bringing in to stronger light some features that are but briefly captured in literature. There is growing interest to explore the dilemmas faced by small countries such as Zimbabwe, which find themselves under obligation to implement global strategic objectives in the information and communications sector against the backdrop of pressing internal political, economic and ideological constraints, which militate against the country's capacity to honour her international obligations.

Founded in 1865 as the International Telegraph Union in Paris, the International Telecommunications Union (ITU) oversees the implementation of the digital migration programme (ITU report, 2011). As at July, 2011 the ITU, had a strong 193 membership across the globe (ibid.). The ITU is a specialised agency of the United Nations (UN) which fosters co-operation and synchronises the use of radio spectrum frequencies (ibid.). Furthermore, ITU assigns satellite orbits among nations (ibid.). The organisation also provides technical advice to developing countries such as Zimbabwe regarding telecommunications. As observed during the interviews for the study, there has been some ingenious thinking and crafty planning behind the scenes to ensure Zimbabwe's eventual compliance with international obligations regarding the information and communications sector.

Although a roadmap for the implementation of the programme had been put in place before the international deadline of 17 June 2015 for Zimbabwe, due to financial constraints the digital programme would now be implemented in phases. As a result, the roll-out of digital broadcasting migration in Zimbabwe, would last until 2016.This is exactly a year later than the stipulated deadline. In its roadmap to converge as illustrated in figure 1.0 below the country expects to have adopted the 5th generation technologies (**5G**) at least by 2020. Essentially, the implementation of the first phase of the digital broadcasting migration was partially completed before the international deadline of 17June 2015. This phase mainly focused on the upgrading of the country's terrestrial transmitters at the country's borders with her neighbours (South Africa, Botswana, Zambia and Mozambique). This measure was taken to ensure

that the country's analogue signal would not interfere with the digital signal of her neighbours, as the country battled to full comply with the requirements of International Telecommunications Union.

As observed during interviews, the implementation of DBM in Zimbabwe was 'shrouded in secrecy.' It appears 'not much was known about the transition as only the government and its implementing arms knew what was going on'. The publicity campaigns by Transmedia which had kicked off towards the 17 June 2015 deadline had fizzled out. However, as noted in the case of the United States of America (USA), by one of the commissioners of the Federal Commission of Communications (FCC), Michael J. Copps, "the danger was to do either too little or too much in terms of publicity campaigns to inform viewers about the transition … as doing too little would lead to viewers being discombobulated and disconnected without warning." In my opinion this is of concern regarding the current situation in Zimbabwe unless drastic measures between now and the targeted date of 2016 are taken to ensure that credible publicity programmes to enlighten people about the implementation of the programme are put in place. The hype about the historic programme which reached its crescendo toward the international deadline for DBM had in terms of publicity programmes disappeared before being felt by the ordinary people on the streets as generally observed. As noted by an interviewee, the hope was that the ending of the publicity programmes did not signal the end to the implementation of the programme. At the time of study, publicity programmes to educate people about DBM had been put on ice, largely due to the lack of financial resources.

A key feature to come out of the interviews during the study was the proposal for the setting up a permanent committee that would research around the strategic issues at the International Telecommunications Union. Such a role would go beyond the current digital migration framework, whose focus was the broadcasting sector. This is important especially given the growing strategic role of the information and communications sector to the economy. Proposals were also made for a strategy which would define the growth of the information and communications sector. This could be achieved through the promotion of research and development focusing on the 'commons' and 'throughfares' of the sector.

To be observed during the study were proposals through which weaker nations could overcome the financial challenge, in transforming their broadcasting sectors by combining resources. Ideally, this could result in a regional or even continental strategy regarding the information communications technology, as the current strategies at these levels were viewed as 'ineffectual.' In its final conclusion, the study observes that a credible, robust and practical strategy for the implementation of the country's digital revolution was required, a strategy whose focus went beyond the current migration framework if Zimbabwe was to realise

befits from the programme. It is within the context of views such as above, that the proposals by a Chinese firm Star Times Communications, for the sharing of infrastructure between Zimbabwe and Tanzania, (although with an ulterior motive), were seen as providing a possible model upon which small countries could overcome their financial weaknesses in the acquisition of digital broadcasting infrastructure through pulling together their resources. Star Times Communications was the first international company the Government of Zimbabwe engaged to implement the digital programme. The Zimbabwean government rejected Star Times Communications' project proposals because the company did not want to invest in the country, but to exploit the infrastructure they had already set up in Tanzania. They also wanted 60 percent of the cake and, this would have meant that 60 percent of subscription fees collected from viewers going out of the country as pointed out by a senior Government official.

Another notable proposal suggested during interviews, was for Zimbabwe to consider the 'reverse - engineering' of set top boxes (STBs) as a way of cutting on the costs of importing the gadgets. Most importantly also if the country took this proposal the country could also cash in on the windfalls to be realised from the sale of the STBs and other electronic devices linked to the programme. Briefly, reverse - engineering could simply be defined as the breaking apart of an object to analyse how the product had been assembled in order to duplicate or enhance the object.

A practice which traces roots to older industries, reverse-engineering is frequently used on computer hardware and software globally. However, reverse-engineering involves a once off cost toward buying the copyrights of the product that needs to be reverse-engineered from the inventor. These proposals were made in light of the potential of the Scientific Industrial Research and Development Centre (SIRDC) which has in the past ventured into similar programmes in the past. Apart, from the SIRDC, the country boasts many universities, who if properly funded could also be interested in the idea.

Notably, at the time of the study the government of Zimbabwe was grappling with the logistics of distributing 400 000 set-top-boxes (STBs) the country had acquired to test whether the completed phase of the programme was working. The 400 000 STBs had been acquired at a cost of US$18 million as pointed out by a government official. A lot more would be needed for the country if every household with an old television which was not digitally ready, was to get an STB. Briefly, the set top box could be considered the equivalent of a decoder as they enabled reception of the digital broadcast signal. A critical, a question concerning STBs was about whether government should subsidise or issue them out for free to the people.

The other was about whether to allow individuals to import these gadgets or not. These issues presented challenges as explained in chapter 7.

The lacuna in knowledge about alternative broadcast distribution networks such as satellite and cable concerning DBM studies in Zimbabwe were quite intriguing given the abundance of literature at the international level about these issues. Of the three popular broadcasting distribution networks (satellite, cable and terrestrial) the latter has received greater attention in literature. The emphasis on Digital Video Broadcasting - Second Generation Terrestrial (DVB T-2) technologies as a game changer in digital television has somehow blotted discussions on alternative distribution network technologies in the broadcasting sector. Ironically in the case of Zimbabwe, huge investments had been poured by both the government and private sector into cable technology and in some cases satellite as well.

The trend in which terrestrial technologies have dominated discussions concerning DBM is in this context viewed as intriguing. In the same context the complete silence on a fourth distribution network for broadcast, the broadband digital subscriber line **(DSL)** which is emerging as potentially a contender for the future (in the distribution of broadcast) also presents interesting dynamics. Observed from literature is that "it is now technically possible to transmit television using a telephone line" (Adda and Ottaviani, 2005:167). These possibilities fly in the face of a myth which has been created that DTT is the only delivery method for broadcasting'. The engagement with this illusion is partly discussed in Chapters 1, 3, 4 and 5.

The study engaged the philosophical and thus historical roots of DBM from antiquity. In outlining the philosophical roots of the programme, the political and economic dynamics of the 1970s, in America and Western Europe as explained in chapter 3, offer critical insights about the programme. Besides engaging the general philosophical roots of DBM at the global level, the study sought for the programme's imperatives in Zimbabwe. Could it just have been a result of the country's membership to the ITU; or could it be as a result of the benefits of the programme? Also observed during interviews was that Zimbabwe could ill-afford mistakes regarding DBM as the country was light years behind the programme. Furthermore, any mistake regarding the programme would be unjustifiably and unnecessarily costly for the country since Zimbabwe has had the opportunity to learn from the experiences of others regarding DBM. For instance, Mauritius an early adopter of digital terrestrial television (DTT) in Africa, is currently sitting with the outdated DVB T-1 technology, while others in the Southern African Development Community (SADC) adopted DVB T- 2.

Since the interplay of forces shaping a country's broadcasting is both wide and idiosyncratic, the study adopted the qualitative research methodology which interrogates deeply the constitutive elements of an issue. It is against this tapestry that the study sought to investigate the constitutive ontology of broadcasting in the digital age. In terms of the theoretical framework through which the issues of DBM could be understood, the research gravitated toward such theories as could provide for the rehabilitation of African countries from centuries of deformities as observed by one of the interviewees. In this regard, digitisation presents small countries such as Zimbabwe with the opportunity to shape world events in many ways as discussed in chapter 7.

There are eight chapters to the study. These are incorporated under four sections. Due to the diversity of issues involved in digital broadcasting, four chapters are on literature which necessitated the creation of sections for the study. This was done for the clear demarcation of the chapters. Chapter 1 outlined the issues to the background of the study. The chapter highlighted research problem, questions, key definitions, objectives and the justification of the study. Also considered in chapter 1 were the preliminary literature to which gaps requiring insight were identified. Issues about the study's methodology and methods used for the collection of information were also highlighted in this chapter. The chapter engaged the processes and procedures which were used for the analysis of the study's findings, albeit at a nascent stage.

Chapter 2 is about the theory of the study. The chapter presented the filters or lenses through which the researcher selected to approach issues pertaining to the study. It presented Castells' *Information Society Theory*, as providing the appropriate lenses for analysing the issues of the study. The chapter also discussed glocalisation, a concept related to the *Information Society theory*. In different ways and depth, chapters 2, 3, 4, 5 and 6 evaluated literature to the study.

Chapter 3 mainly focused on clarifying the parent and immediate disciplines of the study. In my view, the parent discipline to the study is telecommunications whilst the immediate is broadcasting. The identification of the parent and immediate disciplines helps map the boundaries of a study. Chapter 3 examined the imperatives behind digital broadcasting migration at the global level. The major technical developments involved in digital broadcasting migration were explained in chapter 4. This chapter also explored the critical concept of spectrum management.

Chapter 5 presented a brief history of broadcasting in Zimbabwe since the 1930s. Furthermore, Chapter 5 provided an overview of Zimbabwe's information and communications sector. This was a preamble to the discussion of digital broadcasting migration in the country.

Chapter 6 dealt with issues of methods and the methodology of the study. The chapter explored the taxonomy of research from a phenomenological exploratory paradigm. It also justified the research paradigm adopted for the study. Chapter 6 proposed and assessed the criteria for judging the quality of the study. In addition, the chapter explained the research instruments and data collection procedures. The chapter also examined possible strategies of working around the limitations encountered during the study so as to obtain credible information for the study.

Chapter 7 presented, analysed and interpreted the study's findings. It focused on the procedure of analysing the findings of the study, respondents' analysis, research questions analysis, summary of key findings, and the presentation of unplanned findings. Unplanned findings are concerned with issues of deviation regarding the issues under consideration. Such deviation would always have relevance to the study.

Through outlining the overview of the study, chapter 8 presented the summaries of previous chapters and explicated the research propositions and final conclusions. Chapter 8 also presented the research conclusions in relation to the research problem. The implications of the findings of the study for both policy and practice were also highlighted in this chapter. The study wound up by motivating for further studies.

The production of the thesis should be understood within the environment it was produced as each war produces a lexicon and lexicography of its own and its own grammar and narratives. In typical fashion, the ontology of the present study is shaped by the researcher's exposure to strategic studies, war and intelligence; history, philosophy, commerce, the holy bible, development studies, and other societal based disciplines. Just to think of it, until just now I realised that the pragmatic approach is woven into the military discipline. Warfare is practical and so is the implementation of programmes such as DBM. Ontologically, therefore, the study draws from a variety of disciplines. It draws from the personal encounters of the researcher as a rural boy, town feller traveller speech writer and journalist and most importantly student

Fig. 1.0 Zimbabwe National Digital Migration Road Map to 2016 and Beyond:

Source: IMPI report, 2014:410

SECTION I: BACKGROUND OF STUDY

CHAPTER 1

OF TECHNOLOGICAL DINOSAURS, MUSEUMS, OUTDATED LAWS AND THE DIGITAL REVOLUTION: AN OVERVIEW OF THE STUDY

1.1   Background of Study

Conceived mainly to resolve the challenges associated with the 'scarcity' of radio frequencies, digital broadcasting migration (DBM) is at the heart of current strategic objectives in the information and communications sector (ITU report, 2006). The shortage of radio frequencies in the face of expanding information flow across platforms of communication, has led to dissuasions on the need to harness greater frequency spectrum utilisation from the existing 'pipes' and hence the strategic objectives on DBM (Ibagere, 2010).

As later discussed in chapter 4, one way of achieving the above objective is through the application of prudent measures in the management of the use of spectrum. The other has been through technical improvements of technology in communications. Briefly, spectrum management is the putting in place of administrative measures, to ensure prudent and efficient utilisation of radio frequencies (Goleniewski, 2007; Medeisis, 2009; Weatley, 2013). The efficient utilisation of radio frequencies lead to a net social benefit over a broad range of sectors of a country's economy (Krug, 2005; Fischer, 2006; Gralla, 2007; Carr, 2008; Cramer, 2009; Lozano *et. al.,* 2013, Balarabe, 2013).

In the view of Thomas Olwal and associates television, the internet and the mobile phone are some of the platforms which use radio frequencies (Olwal, *et al.*, 2013:7). From a technical enclave, Andrew Wheatley says radio frequencies denote the full frequency range from **3 KHz** to **300 GHz**[4] (Weatley, 2013). Although fully illustrated in figure 1.1 below, the uses and applications of radio frequencies in electronics including wireless communications, are varied. In simple, radio frequencies carry messages during communication. Francois Rancy and associates define radio spectrum frequency in terms of a freely available resource to whoever wants to use them, but when a service such as broadcast and mobile phone among others occupy an available portion of the spectrum, such frequency channel will no longer be available for other services without 'mutual interference' (Rancy, *et al.*, 2013). Eventually, as users demand access, the

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[4] The range of **3 KHz to 300 GHz** is the range used for wireless communications such as broadcasting. These ranges differ depending on the type and form of communications involved. The higher the frequency range the bigger the carrying capacity.

scarce radio frequency spectrum will be fully used (ITU report, 2013). When properly administered, radio frequencies can generate meaningful revenue for a country (Rancy, *et al.,* 2013).

Spectrum Management: A Public Policy Instrument

Notably, Martin Cave and Kiyoshi Nakamura observe that public policy in the field of spectrum allocation exercises a powerful influence on digital platforms (Cave and Nakamura, 2006:9). This is because without prudent oversight in terms of the management of spectrum in the information and communications sector, there would be chaos. It is in this light, that spectrum management (which relates to the process of administering and regulating access to and use of radio frequency spectrum), is considered a key element of the study. These issues are later considered in detail in chapter 4.

Bill Gates on 'the future of television': Some Reflections

As observed, "a lot of what can be done on the computer in the office, will in future be done via television from the comfort of one's couch" (Mapanzure, 2000:9). However, if these enhanced functions of television and also from the other communication platforms are to be fully enjoyed, Thomas Olwal and associates observe that "there is need for greater radio frequency capacity utilisation" (Olwal, *et al.,* 2013:2).

In order to achieve the above objectives, the focus in terms of spotlight is currently on broadcasting as the sector that needs urgent migration. This implies that in future, digital migration will focus on a different area in the information and communications sector other than broadcasting. The shift in focus depends on the emphasis in thrust, at the international level. Quite notably, analogue television was wasteful in the use of radio frequencies (Rancy, *et al.,* 2013). Ironically, whilst radio frequencies were scarce, there is a global surge in the flow of information and communications (Golding, 2008). Over and above the scarcity of radio frequencies, Jerome Adda and Marco Ottaviani also observe that "issues of quality in terms of picture and sound, were increasingly becoming a priority" (Adda and Ottaviani, 2005:162).

The Digital Revolution in Zimbabwe: A Bird's Eye View

Occurring in an environment of antiquated equipment and outdated laws, the current digital revolution in Zimbabwe was an interesting phenomenon as observed in the report by the *Information and Media Panel of Inquiry (IMPI) of* 2014*.* The IMPI is an all stakeholder commission, set up by the government of Zimbabwe in 2014 to enquire into the state of the information and media industry in Zimbabwe. As a result,

the report points to the need for the retooling of country's information and communications sector in general and the broadcasting sector in particular, if Zimbabwe's digital revolution is to succeed (ibid.). At the time of study, the country's broadcasting equipment was judged as old and suitable for the museum. The enquiries into the state of the information and communications sector in Zimbabwe were part of the country's preparations to digitise *(The Flame, 30 April – 6 May, 2015).*

Contrary to perception that Zimbabwe was dragging feet on DBM, the country was committed to fulfilling her international obligations regarding this programme despite challenges. Apart from exploring the challenges encountered during the implementation of DBM in Zimbabwe, the study explored downstream opportunities to be realised from the programme.

This study contextualises the state of broadcasting in Zimbabwe as it relates to the transition to digital. In the case of the study, investigating DBM in Zimbabwe embraced all three known categories of the purpose of a research study, which are exploration, description, and explanation[5]. These purposes often have different implications for a study. Some of the perspectives generated during interviews ranged from the brief and 'crisp' technical definitions' of the programme, to the 'engaging and confounded philosophical' views of the academics. Interestingly the leadership of the DBM programme in Africa, (composed mostly of engineers and technical personnel) was described by one of the academics interviewed during the study as 'ideologically innocent' and lacking capacity in representing the continent at ITU negotiations. The academic further pointed out that the engineers lacked a grasp of the political economy of the programme and what it bodes for the country financially, ideologically and content-wise. The lack of capacity stemmed from inadequate training in the cultural dimension to engineering in Zimbabwe. This was the "folly of education in Africa" as observed by the academic during the interview. Most of the engineers from Africa's comprehension of issues about DBM revolved around technical literacy and thus were simply fascinated by the promise for more channels regarding digitisation. Furthermore, the interviewee noted: "I hear from our engineers from Broadcasting Authority of Zimbabwe who represent the country at ITU, Mr. Obert Muganyuri, that apart from Zimbabwe and South Africa, the African delegations to ITU were simply empty". Most of the times these delegations failed to articulate the positions of their countries during negotiations. Instead they chose to be quiet, only to rubber stamp the positions of others. The issue of the international

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[5] *http://sociology.About.com./od/Research/a/Purposes-Of-Research.htm.*

deadline for the migration is one issue which could have been handled differently if Africa had effective representation:

> If you look at Africa politically and economically, we are always responding to external forces, other than them responding to us. Very few people are responding to us. We are responding to others in a kind of one way traffic, and so in my view the approach to digitisation needs to have that interrogative sort of framework ... In other words I am suggesting that in your study it should be clear that as a country, Zimbabwe is not simply acceding to other people's positions regarding DBM. We have accepted the programme, because there must be some advantages for us which your study needs to clarify. I foresee a very promising relationship between digitisation and its outcomes. That is what we need to learn from your study. However such issues require a critical eye to discern.

In one of the most interesting issues about the programme, the chief executive officer of BAZ, Engineer, Obert Muganyuri, observes during an interview that although the current digital migration framework emphasised television in terms of focus, the issue remains that:

> The principles involved in the current transition and the lessons drawn from the experiences during the migration, would offer insights for any future digital frameworks which might be contemplated in future in other areas other than broadcasting. Lessons drawn from the current transition can be the basis for future digital migration programmes in other areas in the information and communications sector.

The above quotation therefore implies that beyond television the current digital migration programme, had implications which embraced radio, mobile phone, internet and other sectors. Radio and the mobile phone were considered 'salient beneficiaries' of the current television migration popularly dubbed Digital Terrestrial Television (DTT or DTTV).

The current study is a milestone in researching DBM in Zimbabwe. This is referred to as the 'broader approach' in this study. This approach is broad in that rather than focusing only on DTTV as is the case with most studies on DBM, the current study examined how the developments in the broadcasting sector have impacted the full labyrinth of the information and communications sector. For instance, DBM impacts radio and the mobile phone among other sectors.

However, the scope and rationale of the study is presented in chapter 3. Also gleaned from literature is the view that different countries have migrated in ways which reflect their unique norms, values, structures and institutions (Galperin, 2004:4). Against this backdrop, engaging Zimbabwe's epochal transition to digital became imperative. As such a complete drapery of DBM in the country to acquire the unique insights about the programme in Zimbabwe was sought.

In general, considered also by the study, were some of the silent issues linked to the philosophical underpinnings of DBM. Often taken for granted by researchers, these issues included among others, the programme's constitutive ontology and its epistemological assumptions. A unique data gathering and analysis mix were employed for the collection of information to complete the study.

The lack of 'coordination' and 'co-operation' among stakeholders (government, private sector, and the academia) regarding the implementation of DBM in Zimbabwe, also came out strongly during interviews. There was competition among stakeholders regarding the implementation of the programme in areas where coordination and co-operation would have immensely benefited the country. Some members of the private sector felt marginalised by the government as they viewed government of being reluctant to share strategic information about the implementation of the programme. "The participation of the private sector in the programme would be difficult unless there was 'frankness and openness' among stake-holders regarding the implementation of DBM" as gleaned from literature.

The long drawn battles between government and players in the broadband mobile sector were part of the conflicts that existed regarding digitisation in Zimbabwe *(The Herald, 10 July, 2015)*. More fundamentally, the conflicts, suspicion and mistrust between government and the private sector reflected the deep-seated divisions among Zimbabweans as observed by an academic as follows:

> As a people, I have observed that we (Zimbabweans) differ a lot. Although it may sound somewhat a diversion from the issues under spotlight, you should understand that the successful implementation of digitisation programme depended on the worldview of Zimbabweans. It appears a people we do not agree on anything. This is how you can explain the acrimony between Zimbabwe African National Union Patriotic Front (ZANU PF) versus the Movement of Democratic Change (MDC). Do not take the tensions between the two parties lightly and as simply a matter of the works of democracy. No! These divisions are a reflection of the deep seated division of Zimbabweans.

Some of the contradictions regarding the implementation of digitisation are influenced by the ideological divisions among Zimbabweans. This partly explains the suspicion and mistrust between government and the private sector regarding the programme. Although not officially declared, I venture to say that the attempt at nation building during the 1980s had somewhere somehow failed, hence the current preponderance during the interviews for the re-engineering of our people's minds in line with the dynamics of the century. As observed by an academic "nothing short of a cultural revolution could repair this 'deformity' of character about Zimbabweans". Such divisions impacted the implementation of digitisation.

At the time of the study there were running battles between government and private sector which involved the resistance by the private mobile phone operators in the country to share transmitters and other related infrastructure as directed by the Postal and Telecommunications Regulatory Authority of Zimbabwe (POTRAZ) *(The Herald, 10 July, 2015)*. The Postal and Telecommunications Regulatory Authority of Zimbabwe is a government agency which coordinates the use of telecommunications in the country and fosters co-operation among stake-holders in the information and communications industry. These stake-holders included those who offer both fixed and mobile phone services in the country (POTRAZ, 2014). The Postal and Telecommunications Regulatory Authority of Zimbabwe liaises with the ITU on developments in the telecommunications sector in the country. At the time of the study, all mobile phone operators in Zimbabwe were investing in infrastructure, which served the same purposes *(The Herald, 10 July, 2015).* This haemorrhaged the nation of the much-needed financial resources which, in the opinion of the government, would be better channelled towards other needy areas of the digital programme such as the creative arts for content production and skills development, among others *(The Herald, 10 July, 2015).*

Also to emerge from the study during interviews, was what appeared to be the 'aloofness' and somewhat 'ignorance' of some Zimbabwean academics regarding issues about DBM in comparison to the quality of views gleaned from literature. However, regarding the evaluation of the involvement of the academia with the digital programme, Thandi Smith notes that 'digital broadcasting' as an academic field in its own right, was relatively young and therefore academics , especially those in Africa could be 'forgiven' for their ambivalences concerning issues of convergence (Smith, 2014:5). The subject thus lacked in scope and perspectives (Berger, 2010).

The attitude towards DBM among some media scholars was that of aversion as they lacked appreciation of the innovations in the broadcasting sector. This was observed during the interviews for the study. In my view, the issue about the 'ignorance' of some of the lecturers in the information and communications sector in the Zimbabwean universities about DBM was informative as lecturers were 'ordinarily' expected to be the trend setters and opinion leaders in society, in their respective areas of speciality. Therefore, what this bodes for the Zimbabwean society in general is that DBM still needed perspectives.

Apart from the issue of inadequate and infrequent salaries for lecturers in Zimbabwean universities owing to the country's economic challenges, the 'ignorance' about current trends in the information and communications sector stemmed from the lack of capitalisation in modern technology (IMPI report, 2014). The lack of technological capitalisation in the country not only affected universities and other learning

institutions but also other critical sectors of the country's economy such as aviation, health and the manufacturing sector.

As pointed out in a conversation with a medical practitioner at the University of Zimbabwe, the country's health sector was 'literally' functioning as if in Stone Age due to the lack of modern equipment. "Sanctions on the country have worsened the situation," as observed by the practitioner. "This rendered the country's medical practices incompatible with procedures used in other countries with advanced technology. As a result, people die because of lack of diagnostic technology for effective treatment." These technical setbacks are despite the fact that Zimbabwe has the highest literacy rate in Africa.

An Information Dinosaur: Zimbabwe in the Information Age

The integration of Zimbabwe into the information society was occurring without sufficient capital and technological investment in the information and communications sector. Technologically, "Zimbabwe was regarded as an information 'dinosaur'" (IMPI report, 2014:4). There has been very little technological upgrade in what subsists as the information and communications industry in the country since the country's independence in 1980" *(IMPI report, 2014).*

To be probed by the study also were the philosophical assumptions underpinning the methodology through which knowledge about the programme was collected. Discussed also were the lenses through which perceptions about DBM in Zimbabwe could achieve meaning. In engaging these issues, the study is believed to have contributed to the corpus of knowledge on Zimbabwe's switchover to digital broadcasting. In the search for views about the country's migration, a broad perspective as could possibly be mustered was engaged. This approach to the study is simply an acknowledgement of the need for a 'wider' and 'comprehensive' analysis of the issues of DBM rather than the focus on television. As evidenced in the literature available, most studies on DBM focused on DTTV (Galperin, 2004).

The implementation of the programme is based on specific frameworks in terms of processes, procedures and time (ITU report, 2006). Therefore, the comprehensive understanding of DBM and its benefits involved the engagement with practical issues of implementation of the programme which went beyond the subject matter itself (Galperin, 2004). However, by adopting this perspective to DBM, the study is responding to the pragmatic orientation of the programme as explained in chapter 2 and also in the rationale of the study in chapter 3. Technically, digitisation has practical and tangible impacts to society which go beyond television (Duncan, 2000).

Embraced by the study were the platforms such as internet, the mobile broadband, and many others (Cogburn and Nyaki, 2001). Apparently, it turned out that these platforms have linkages with broadcasting in one way or the other. To be considered by the study also were the benefits of DBM. The understanding of this programme in my view, involved the engagement with the entire DBM archaeology. Partly, the engagement with the full spectrum of DBM involved a reflection of the policy systems, regulation and laws in place for Zimbabwe to adapt and harness change in an increasingly changing environment (Braman, 2004; 2009). The 'knowledge and understanding' tapped during the study was critical for stake-holder decisions regarding the future roll-out of digitisation in Zimbabwe.

The stake-holders to the implementation of DBM programme in Zimbabwe included government and quasi-government departments involved with the different aspects of the programme. The stakeholders also included the beneficiaries of the programme - the private sector and the consumers of digital products. However, it should be observed that the current study is not in any way a survey of the views of the opinions and views of ordinary Zimbabweans regarding DBM but a focused purposive study. Therefore, a gap regarding the consideration of the views of ordinary Zimbabweans regarding the programme exists. Knowledge about how the ordinary people view the programme from their vantage point, its benefits and the dilemmas the programme imposes on them is needed if DBM is to be understood.

In my view, having been involved in research studies many times before, academics, engineers and government officials may be conditioned to be concerned about the 'polish' and 'quality' of their expressions at the expense of insights which approximated the reality about a phenomenon (Leedy and Omrod, 2010). As a result, surveys that explore the views of ordinary people tend to generate original views about a phenomenon (Leedy and Omrod, 2010).

To demonstrate the country's resolve to fulfil its international obligations regarding digitisation in the broadcasting sector, the Government of Zimbabwe has since raised US$125 million from a local source for the programme (*The Herald, 23 February* 2015)*.* The country has also been courting international financiers for additional funding or equipment *(The Herald, 24 December 2004).* Iran has since poured in about - 40 million Euros, towards the funding of the preliminary stages of DBM which started as far back as 2004 *(The Herald, 24 December 2004).*

The Electronic Market in Zimbabwe: Huawei Displaces Sony - Ericson in the Provision of Electronics in the Country

The changing configuration of the electronic market in Zimbabwe formerly dominated by the Norwegian Sony - Ericson and now conquered by Huawei; a Chinese electronic company offers some insights about the programme in Zimbabwe. Overnight, Huawei has become a major player in the provision of equipment and materials for the digitisation programme in the country for all sectors which include broadcasting, mobile communications, telecommunications and even the internet. As observed through interviews, Huawei has literally displaced Sony - Ericson in Zimbabwe for the provision of digital communications equipment. [6]

An estimated US$200 million is required to cover the requirements of the programme *(The Herald. 17 February 2015).* However, given that DBM has a number of drivers that require resources almost at the same time, the money which has so far been mobilised for the programme is a pittance (*The Sunday Mail, 22 February 2015; The Herald. 17 February 2015).* An additional US$75 million is required (*The Sunday Mail, 22 February* 2015; *The Herald. 17 February 2015*). Observed is that the targeted US$200 million excludes the funds required for the establishment of the 'creative industry'. The creative industry is important for the production of content *(The Herald, 17 February 2015).* The demand for film and other content forms is expected to increase as additional spectrum capacity is harnessed through digitisation *(The Sunday Mail, 22 February 2015; The Herald, 17 February 2015).* It is in this light that the country's capacity for content production and procurement were considered:

> Instead of the creative industry in Zimbabwe being a concomitant of the digitisation investment, the country lacked sufficient investment in this area. As a result, it is observed that country was fated to evolve as an information consumer market than a producer.

Source: IMPI report, 2014:4

The orientation of laws in the information and communications sector in Zimbabwe has been observed to be of control and not of viewing the sector anew as a growth pole in national economy (IMPI report, 2014). Since Zimbabwe is light years behind in terms of digitisation, the envisioning of plans and strategies for the programme is set to dominate debates in the sector for the foreseeable future. Concerned about

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[6] The reason for Huawei dominance in Zimbabwe was largely because the company provided after better sales service and backup than competing companies as observed during an interview with.

Zimbabwe's future digital roll-out programme, the study's focus was etched beyond the June 17, 2015 global deadline for the transition. With financial challenges, Zimbabwe would implement DBM in stages (CEO, interview, 2015). The stages were targeted to last until 2016 when the country would switch off analogue for digital television (*The Herald, 1 July 2015*). The initial phase for the implementation of DBM involved the upgrading of the existing 24 terrestrial transmitters to become 'digitally compatible' (*The Sunday Mail, 22 February 2015).*

In the view of the Chief Executive Officer of TRANSMEDIA, Zimbabwe's broadcasting signal carrier Mrs. Sigudu-Matambo, before the global deadline for the transition, Zimbabwe had devised a plan to ensure that the borders with her neighbours were digitally ready. As observed during an interview, this strategy to upgrade the existing transmitters at the country's borders was meant to minimise:

> The country's analogue signal interfering with the digital signals of her neighbouring countries as Zimbabwe battled with issues of full compliance regarding digitisation. However, this meant that the country would largely be running on the analogue system and where possible, provides digital television. It is expected that the analogue signal would finally be switched off by 2016 which is a year later than the international deadline. The provision of both analogue and digital was a measure to allow consumers time to adapt to the new changes and provide the country ample time to obtain resources for the programme.

A signal can be viewed as the embodiment of a message. It is the message carrier. In Zimbabwe, Transmedia is the company responsible for the transmission of broadcasting signals. The Broadcasting Authority of Zimbabwe (BAZ) is the licensing authority in broadcasting in the country (BAZ report, 2003). Currently, Transmedia owns and maintains the country's broadcasting transmitters formerly owned by the Zimbabwe Broadcasting Corporation (ZBC), now Zimbabwe Broadcasting Holdings (ZBH).

The transfer of the transmission of signals from ZBH to Transmedia was meant to ensure that the function was operated by a 'neutral player' as opposed to ZBH, which had vested interests as a broadcaster. This was also to ensure the separation of functions in terms of transmission and service provision to ensure specialisation. These moves would ensure fair play between ZBH and the other private and commercial players to be licensed under the new dispensation. This was the same model which the government of Zimbabwe would have wanted replicated in the mobile broadband phone sector *(The Herald, 10 July, 2015).* The need for an additional 24 digital terrestrial transmitters and the funding for the upgrading of the old, placed Zimbabwe in a funding 'conundrum,' to borrow from Jane Duncan, (2000). At the current levels, signal reach is between 30-40% of the country to land area of 395 245 km (BAZ report, 2003).

In my view, the real dilemma with the implementation of DBM in Zimbabwe, was whether the country could achieve what it had failed to achieve since 2006, when the global consensus to migrate from analogue to digital was concluded in Geneva, Switzerland. In the interim, the country would rely on dual illumination or simulcasting as a mitigatory measure before full compliance is achieved regarding DBM. This is a period when the country will be running both analogue and digital services (*The Sunday Mail, 22 February* 2015). In this regard, dual illumination or simulcasting relates to a window allowed those countries such as Zimbabwe, who would have failed to meet the deadline (ITU report, 2006). Upgrading the transmitters, involved the injection of huge financial outlays. Such capital injections were required at a time when the country was reeling under the effects of a severe drought which further strained the country's financial resources.

Apart from the vacuum on policy issues regarding DBM, and the lack of money to fund the programme, the study also discussed the shortage of critical skills to drive the implementation of the programme (*The Financial Gazette, 19 February 2015*). The skills deficiency has been worsened by the brain drain which plagued the country in recent years owing to an unstable macro-economic environment (Gono, 2008). However, as observed by a top government official, the country has sufficient skills required for the different sectors of the economy. What was lacking was a retention strategy to keep the skills in the country. Zimbabwe needed to deal decisively, with the issue of salaries for skilled manpower, if it were to benefit from the investment the country made in respect of manpower development since independence in 1980. "As long as the country dithers with this issue, Zimbabwe would continue to pay colossal fees in consultancy for tasks that could otherwise easily be handled locally using Zimbabwean skills". The above views were expressed during a conference on the *Digital Future* in Harare, held from 18 to 20 March 2015. The information and communications revolution in Zimbabwe brought up new issues regarding growth, promotion, regulation, standards and protection of society from harmful material coming from the numerous platforms created as a result of the digital programme (IMPI report, 2014).

At the time of study, the focus of the Zimbabwean Government was the strengthening of the public broadcaster, the ZBH, before the country could issue out licenses to more private and commercial broadcasters (Ndlela, 2007). This approach was consistent with the traditional spectrum approaches which emphasised public utilities over private. Therefore, in the short to medium term, the study observed as fallacy the view that digitisation would unlock a diversity of channels in terms of television and radio stations. Government monopoly in the broadcasting sector in Zimbabwe would therefore, remain for the foreseeable future (ibid.).

The approach by Zimbabwe in the broadcasting sector, which borrowed heavily from the British broadcasting system, reflected the country's 'conservative political culture' (Ndlela, 2007). The conservative nature of the country's politics, help explain the trend that whenever there were some newly licensed players in the radio and television industry in Zimbabwe, the public broadcaster would always get the lion's share of the allocations. As part of this strategy, ZBH TV was expected to launch six high definition channels.

The launch of new channels would lead to huge demand for viewing material. This requires a strong film industry to supply material for the broadcasting sector. However the state of the film industry will be discussed under the overview of the media industry in Zimbabwe as discussed in chapter 5 of the study. In anticipation of the upsurge in the demand for television content, ZBH TV had created a Content Creation Unit (CCU) to mobilise resources locally and internationally to pool together viewing material *(The Sunday Mail, 22 February 2015).* Implied is the need for a robust creative industry. The desire for content, embraced other sectors such as the internet among other platforms in Zimbabwe. However, as observed, most content producers were surprisingly unaware of the developments taking place in the broadcasting sector in the country. The lack of knowledge could have been due to lack of the publicity of the programme.

Notably, due to the pragmatic approach of the study, the research addressed issues beyond the 'short legs' of the June 17, 2015 deadline as later outlined in the rationale of the study. The wider approach to issues of DBM in Zimbabwe was considered both sustainable and integrative in a number of ways. First the study's sustainability lay in the capacity to probe the long term strategies of Zimbabwe's plans and strategies for the programme. Second, the integrative approach to DBM gave the study a 'toehold' to investigate the entire fulcrum of the phenomenon rather than focusing only on DTTV as is the case with most precedent studies.

The importance of the study lay in the pragmatic approach (Creswell, 2009). In brief, pragmatism in research, embraced the processes and procedures involved in the implementation of a programme such as DBM. Phenomenon that involved the accounting for the practical steps of implementing a programme required a pragmatic approach (Craig, and Muller 2007; Creswell, 2009). In the views of Creswell, pragmatism is considered an effective tool for explaining the processes and procedures in the implementation of a programme (Creswell, 2009).

Apart the study's contributions, the importance of the study could also be deduced from the traction for attention by the organisers of conferences and research symposiums of different universities who would have wanted me to present on aspects of the research. However due to the tight schedule in which to complete the study, I found it difficult to attend most of the conferences. Since my studies were being sponsored by the university to which I was registered, I had to complete in three years as expected by the sponsor. Therefore, I had to make difficult choices on whether to attend conferences and research symposiums or focus on the development of the study.

From a philosophical and practical viewpoint, I observed what appeared to be the conflictual nature of the constitutive ontology of digitisation. On one hand, digitisation appeared to elicit critical approaches in terms of analysis, whilst on the other, the programme's implementation favoured pragmatic approaches. As observed from the views of engineers and technicians during interviews, pragmatism was concerned about the technical steps of implementing a programme in compliance with set standards and timeframes. This is further observed by John Creswell: pragmatism as a worldview arises out of actions, situations, and consequences rather than antecedent conditions (Creswell, 2007:10)

However, it should be noted that whilst the implementation of DBM may in the views of others, not require critical analysis; there are aspects of digitisation such as the 'digital culture' which require critical analysis for understanding. In analysing digital culture, David Bell and Barbara Kennedy point to a 'scary future' in which 'big brother' in respect to the USA, is expanding his surveillance networks over other nations (Bell and Kennedy, 2007:580-1). The nature and quality of the 'digital culture' in relation to the public sphere has elicited critical analysis. The democratic potential of emerging media in the 'archaeology' of the debate on the function of new media looms larger, than concerns (Chan and Keenan, 2006). The 'massacring' of the 'cultural innocents' of the small, deprived and vulnerable nations of the world is one of the major concerns about digital culture in the global age (McLuhan, 1964). The digitisation of a broad array of economic activities has raised questions regarding Zimbabwe's capacity to regulate. The investigation of what Zimbabwe needed to do in order to fulfil her international obligations could be achieved through the practical steps of the pragmatic approach. As a signatory to the United Nations (UN) conventions on broadcasting transition, Zimbabwe cannot renege on her international commitments regarding DBM. Therefore, what was needed was for the country to explore the possible plans and strategies by which to comply with international regulations. As a result, whilst a critical analysis about the digital programme is important in enriching the perspectives about DBM in Zimbabwe, for now, the focus should be on the investigation of the practical essentials of the implementation of the programme.

Given that digitisation is still largely controversial even in developed societies where it traces its roots, it was observed that studies on digital transition in small countries such as Zimbabwe are quite needful, (Cave and Nakamura, 2006).

The varied responses to DBM in countries such as Zimbabwe, have served to confuse rather than clarify issues about the Programme (Ndlela, 2007). In the Zimbabwean context, the "lack of a centrally felt need around digitisation" has remained an issue of concern (*The Herald,* 12 April 2014). Observed also is that currently, knowledge about digital migration is captured in "lamentably narrow commercial pamphlets driven by corporate interests" (*The Herald,* 12 April 2014). These commercial interests lacked the 'national import' of DBM to the country (*The Herald,* 12 April *2014*). Therefore, a full account of DBM in Zimbabwe is considered critical. Against this backdrop, the transition to digital as stipulated by ITU has lately become an important area for research (Cave and Nakamura, 2006). The developments in the information and communications sector are occurring at a time when new devices, applications, technologies and practices are emerging (ibid.). The new technologies and media of communication systems associated with them have impacted the broadcasting environment profoundly (Fischer, 2006). As a result, the current digital transition requires countries to adopt regulatory systems that adapt and appropriate change (Raboy, 2003; Braman, 2009).

The study sought clarity on DBM and explained the programme's constitutive ontology. It further explained the programme's linkages with the entire information and communications sector. Explicated also in the study were the obvious (but not always straightforward) linkages between the broadcasting sector and the dynamic global technical improvements in the communication and information industry, which have rendered the current transition in the sector critical (Cave and Nakamura, 2006). Notably, broadcasting sits at the intersection of old and new media (Cave and Nakamura, 2006). For all the attention gathered by new information and communication technologies, this sector has remained a dominant political and cultural force of the digital age (Miller and Allen, 1995). Digital broadcasting migration, relates to the introduction of digital broadcasting technology in broadcasting (Seel and Grant, 1997). This migration is partly driven by the benefits that are associated with the digital broadcasting technologies, which have seen most countries, in the world, embarking on the process[7]. As new technologies challenge existing media arrangements, the transition to digital broadcasting offers a unique opportunity to study how old politics and new technologies

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[7] www.baz.co./index.php/technology

are shaping the modern communication network (Galperin, 2004:xi). It is in the wake of disruptive times such as the current transition that the political and economic foundations of a country's institutions required research (Galperin, 2004:3). Apart from broadcasting, radio frequencies are used in other strategic sectors of a country's economy (Goleniewski, 2007; Milan and Hintz 2012).

Fig.1.1 Areas in which Radio Electro - Magnetic Spectrum are operationally Critical:
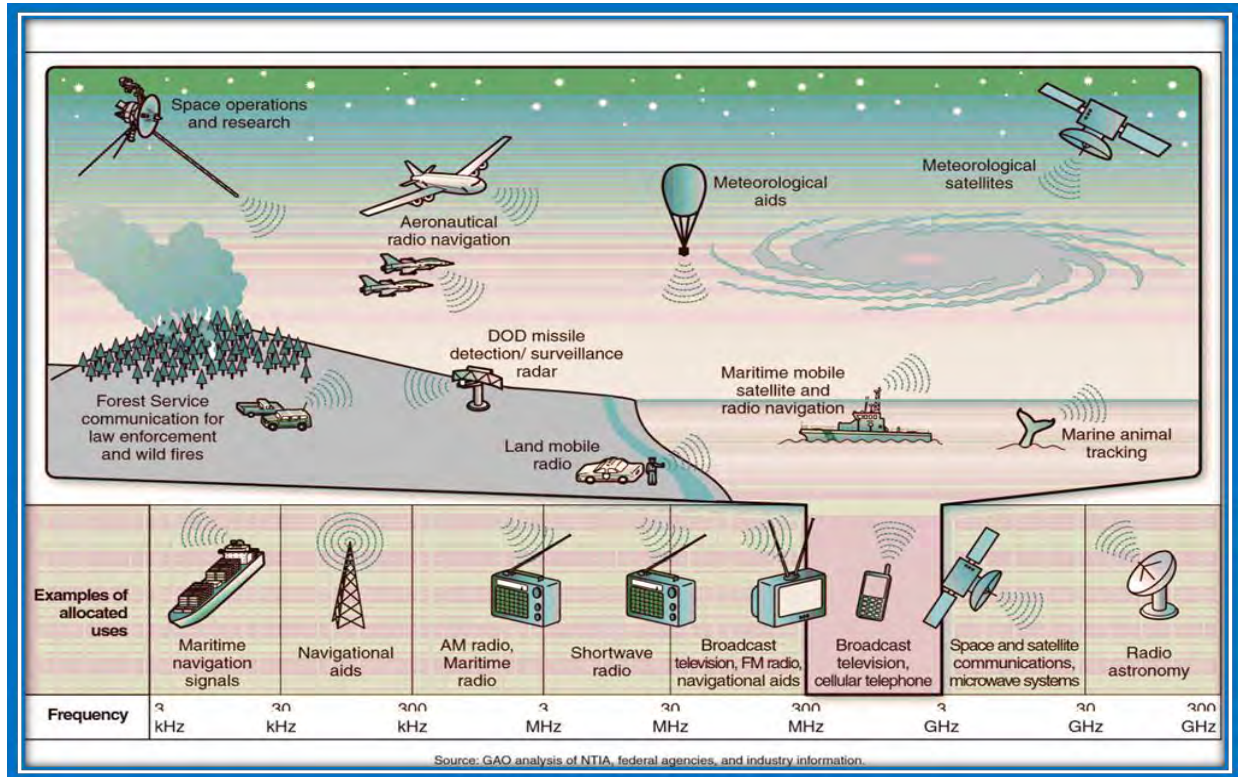
Source: USA Congressional Report on Radio Frequency Spectrum and use, 2011

The general developments in the telecommunications, internet and the mobile cellular sectors are critical to the understanding of DBM in general and in Zimbabwe in particular. For the purposes of the study, a basic appreciation of the sectors highlighted above and their linkages with broadcasting are thus critical, since the current convergence of the telecommunications - internet and the mobile sector – is at the heart of new media and the increased flow of data (Olwal *et. al.,* 2013:1). Although this concept is defined in subsequent chapters, for now it is sufficient to say 'new media' relates, simply to digital media (Chun and Keenan, 2006).

Allan Brown and Robert Picard distinguish cable, satellite and terrestrial (Brown and Picard, 2005:8). The differences in these technologies lie in the costs of the equipment linked to each system (Brown and Picard, 2005:9). Whereas digital satellite television is cheaper than either DTT or cable, these also have their strengths over satellite (ibid.). Therefore, the emphasis on DTT by most previous studies falls far short of explaining DBM (Goleniewski, 2007). However in my view, DTT has received the lion's share of attention in terms of scholarship in DBM. The emphasis on DTT at the expense of other issues involved in DBM has resulted in the segmented approach towards the issues of DBM in general, and about Zimbabwe's strategies and plans regarding the programme. The fragmentation of issues on DBM is also evident in the structure of the courses on communications studies on offer, in Zimbabwe's universities. This ultimately promotes segmentation in the understanding of information and communications. As observed by one of the interviewees "there is need to reconsider the way we view broadcasting in technical terms, as simply the transmission of signals from one point to the other, to involve the cultural, historical and business imperatives of the concept. In the developed world, broadcasting is a way of life". The interviewee thus further notes:

> The real power of the West lay not in the economic or technological muscle, but in her power to name and define reality for the rest of the world in terms of what is freedom, progress, civil behaviour and so on. The production of knowledge is the way in which the Western world has been able to create the 'Third World' economically, sociologically, and culturally. The ability by developed countries to determine content for the cultural industry is what has led the world to believe that development is being 'like them'

As a result, the study analysed broadcasting from a relatively broad approach, tracing its roots to electrical engineering, telecommunications and lately the mobile cellular phones. This approach emphasised broadcasting linkages with the aviation and telecommunications industry. Noteworthy, is that broadcasting history in Zimbabwe traces roots to the installation of a transmitter meant for aviation purposes in Salisbury now Harare.

However, as observed in Chapter 4, the nature of learning about the information and communications sector is fragmented, isolating issues about the sector. In my view, the curriculum, (an outline of the courses), regarding courses in information and communications is fragmented. Issues related to broadcasting are taught under different disciplines away from telecommunications and broadcasting yet both telecommunication and broadcasting are forms of communication.

As observed during an interview with a technician, "telecommunication simply relates to distant, communication whilst broadcasting relates to that form of communication targeted at many people."

The kind of teaching and learning which fragments aspects of communications defeats the acquisition of a holistic appreciation of issues about broadcasting. The fragmentation of issues in the curriculum about broadcasting has in my view, partly contributed to the complications and confusion about the implementation of the digitisation programme in Zimbabwe as people fail to make the linkages in the sector due to relatively weak perspectives about the programme.

Indeed, an academic observes during an interview that "the engineer thinks they are the only critical person regarding the implementation of the programme and so is the content producer and so on, yet the programme involved many people. Therefore even when the focus of the study is DBM, observed in literature was that the effective appreciation of this field no doubt involves an appreciation of the essentials of electronics, especially in relation to telecommunications, internet and lately, broadband mobile communications (Gralla, 2007; Goleniewski, 2007). From a content perspective, the process also involves knowledge about the cultural industry and society.

The need for a permanent committee to deal with ITU

Some interviewees consulted during the study were of the view that Zimbabwe needed to set up a standing committee to engage with the strategic issues at ITU. "The enormity of the issues at ITU could no longer be left to a ministry or department, given the critical role the information and communications sector now played in the economy". The issue about the study's boundaries, in terms of the scope or delimitation, is fully explained in the rationale of the study in chapter 3. Notably, broadcasting transmission occurs in two forms (Seel and Grant, 1997). These are digital and/or analogue (Madikiza, 2013).

Analogue Technology

Until as late as the 1990s, analogue technology had been the traditional means of communication in the broadcasting sector (Seel and Grant, 1997). However, this situation has since changed rendering analogue redundant (Golding, 2008). The above view is prevalent at the global level where some developed countries have used up their share of this 'inelastic' resource (Galperin, 2004).

Although the transition to digital broadcasting is on the top of the agenda for even small countries such as Zimbabwe, this study observed that the analogue system may remain entrenched in the African communication system, at least for the foreseeable future as some countries are still to demonstrate real capacity to fulfil their international obligations regarding the matter. The analogue channel relayed data with each content stream taking a turn to transmit behind the one that went before it (ITU 2006). This method of transmission required huge bandwidth space or radio frequency capacity (ITU Report, 2006). With the increasing flow of information across the world, the limited bandwidth space in analogue has compelled nations to seek for global solutions to the problem of 'scarcity of frequencies' (Seel and Grant, 1997). Radio frequencies from an analogue viewpoint are a finite resource (ibid.). It is against this background that the analogue channel, which has become inefficient in the transmission of data in the current age, is being phased out for digital systems (ibid.).

With new developments in broadcasting and mobile communication technologies, the flow of data within and across nations has increased (Lister, M. *et. al..,* 2003; Duncan 2012). This has led to further demand for greater radio frequency capacity as the world seeks to cope with the ever-increasing volumes of data traffic in modern society (Duncan, 2012). In terms of the quality of communication the analogue channel loses at least 20 percent of information at transmission (Bria, 2003). The further one goes the weaker the signal and distorted, which in turn, means when information reaches the receiver it has largely been compromised.

Fig 1:2 Analogue channel:
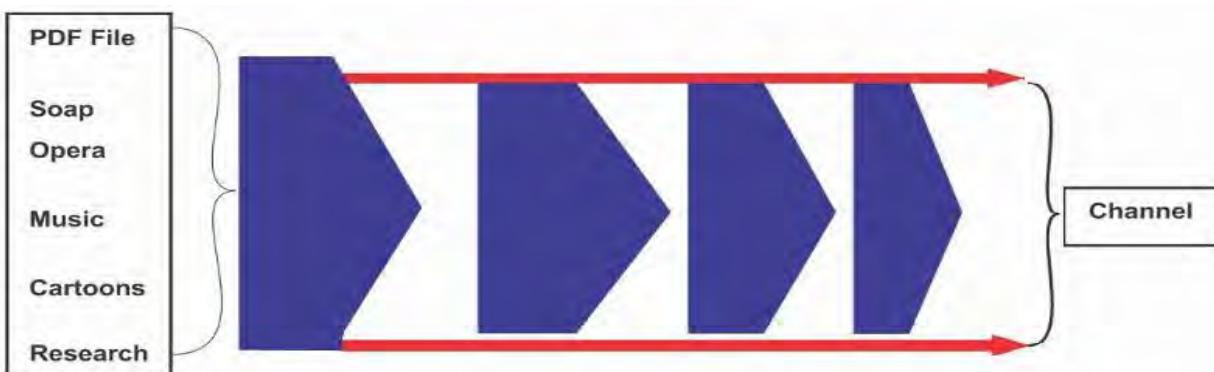
Source: Developed for the study

In the illustration above data is squeezed through the analogue channel to reach the next point.

Fig.1.3 Syllogism of the heart:
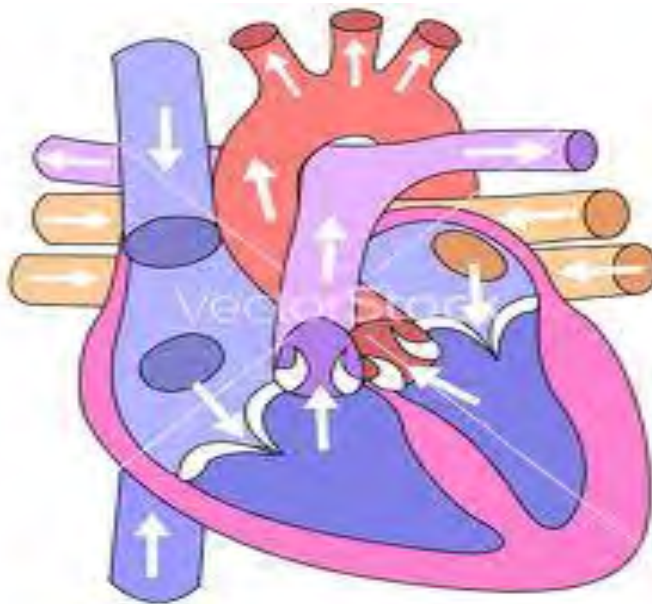
Source: The Edgars Club Magazine, Zimbabwe, April-May 2014

In the syllogism of the heart above, it is presumed that the heart is operating under pressure as a result of a condition known as atherosclerosis *(Edgars Club Magazine, Zimbabwe, April - May 2014).* Atherosclerosis, which the researcher may liken to the proverbial 'information overload' in a communication channel, is a condition that develops when a substance called plaque builds up in the walls of the arteries *(Edgars Club Magazine, Zimbabwe, April-May 2014).* This causes the narrowing of the inside of arteries, making it difficult for blood to flow freely, and leading in some cases to heart attack or stroke as vital body organs are starved of the oxygen in blood *(CIMAS health PLUS Magazine, 2010).* In the syllogism of the heart in fig. 4 above, the blood flowing through arteries and veins (channel) can be likened to information in the case of communication. In communication, information overload leads to 'systems failure'. As a result, information is delivered in such compromised quality that its meaning and objective may be lost (Lister M. *et. al.,* 2003).

Differences between the Analogue and Digital channel

In mapping the differences between analogue and digital Aurelian Bria, observes "the signal type mainly separated the two" (Bria, 2003:2). Notably, Bria notes a fundamental point relating the differences between the two systems, which the channel or frequency carrier is the same in both analogue and digital (ibid.). It

should be observed that both analogue and digital systems converted information into electric signal, but the difference was that with digital transmission, the signal is converted into **0**s and **1**s (Lister M. *et. al.,* 2003). Unlike with analogue, the digital signal of **0s** and **1s,** occupy less spectrum space during transmission (Berger, 2010). This gave the digital signal greater capacity utilisation, a quality which makes it attractive over the analogue signal (Lister. *et. al.,* 2003).

The Digital Channel through The Analogy of 'Silk Threads versus Thick Rope'

As observed, there are many ways to achieve additional bandwidth capacity in terms of increased radio frequency capacity in the modern age as discussed in chapter 4 (Galperin, 2004). In my view the harnessing of additional radio frequencies is best described through the analogue of 'silk threads' versus 'thick rope'. This analogy in my view captures aptly some of the scientific methods which have been employed to achieve additional spectrum capacity.

Through the framework offered by the ITU, techniques and methods to harness increased capacity utilisation from the existing spectrum space (ITU, 2006). The methods to harness radio frequencies from existing pipes range from the technical improvements regarding technology to the management principles over the use of spectrum across a broad areas of a country's economy. Furthermore, another technique to achieve greater spectrum space relates to the 'conversion' of data (whether pictures, PDF files, videos, text and other material) into binary digits, technically referred to as the **0**s and **1**s as earlier noted (McLean, 2007).

Essentially, in electrical engineering the digits are the 'language', the 'electric language' (Trend, 2007). The roots of this form of 'language' can be traced to the works of Leibniz, in the 60s (ibid.). Leibniz was probably the first to conceive of the electric language, which he personally described as "a set of symbols engineered for manipulation at the speed of thought" (ibid.). Today, Leibniz's works on the electric language stand out as the first historical foundation of contemporary symbolic logic (ibid.). However, from a layperson's viewpoint, the 'conversion' of data (sound, PDFs, pictures, videos and texts) reduces it into units that require less space to transmit (Graham, 1998). Lister *et. al.*, argue that instead of the usage of the concept 'conversion' to explain the electric language, the appropriate term to use is 'assignation' of numerical values to phenomena, whether PDF, cartoons or word documents, so that it occupies less space during transmission through a channel (Lister *et. al.*, 2003). The concept of channel may refer to two things. In respect to television and radio it may be used to refer to a station such as ZBC, or Botswana

television, channel four and so on. Differently, it can be used to refer to describing the format of being analogue or digital (Lister M. *et. al.* 2003).

Fig.1.4 Digital Channel and its Possibilities:
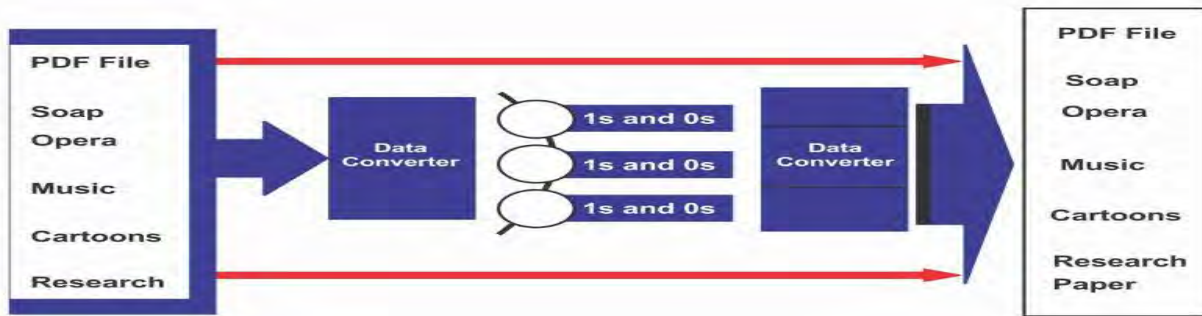
Source: Developed for the Research

Some of the most complex technical improvements to achieve additional bandwidth capacity have involved the weeding out of time lags in the processing of information between sender and receiver (Goleniewski, 2007). This has been identified as another useful way of creating additional bandwidth capacity. This results from the continued improvements in the technical efficiency of current technology (Seel and Grant, 1997). In these ways, available channels can further be divided into thin pipes as exemplified by the digital channel in the illustration above. What this simply means is that where there was a single channel there will be more channels available due to the compression of data.

From a technical viewpoint therefore, digital broadcasting is defined as a system that transmits data as binary digits (Seel and Grant, 1997; Stork and Kanyangela., 2009). Digital broadcasting brings all possibilities associated with "digitalism" to radio, television and other platforms as well (Graham, 1998). Radio frequencies or alternatively the electromagnetic-spectrum can simply be viewed as the proverbial 'vehicle' through which messages are conveyed. The outlined background accounts for the necessity of the transition from analogue to digital. Therefore, the countries that were signatories to the ITU Geneva convention on telecommunications held in 2006 agreed to migrate to digital in order to resolve the problems posed by the scarcity of radio frequencies in communications (ITU, 2006).

In broadcasting, the transition would allow countries to continue receiving broadcast signals even after the old analogue transmission signals are eventually switched off (Drummond and Paterson, 1985). Countries have been grouped into three regions for the migration (ITU, 2006). Of interest are countries in

Region 1, to which African countries including Zimbabwe belong. This region also encompasses European countries and they were expected to migrate by June 2015.

Fig.1.5 The Regions for Digital Broadcasting Migration:
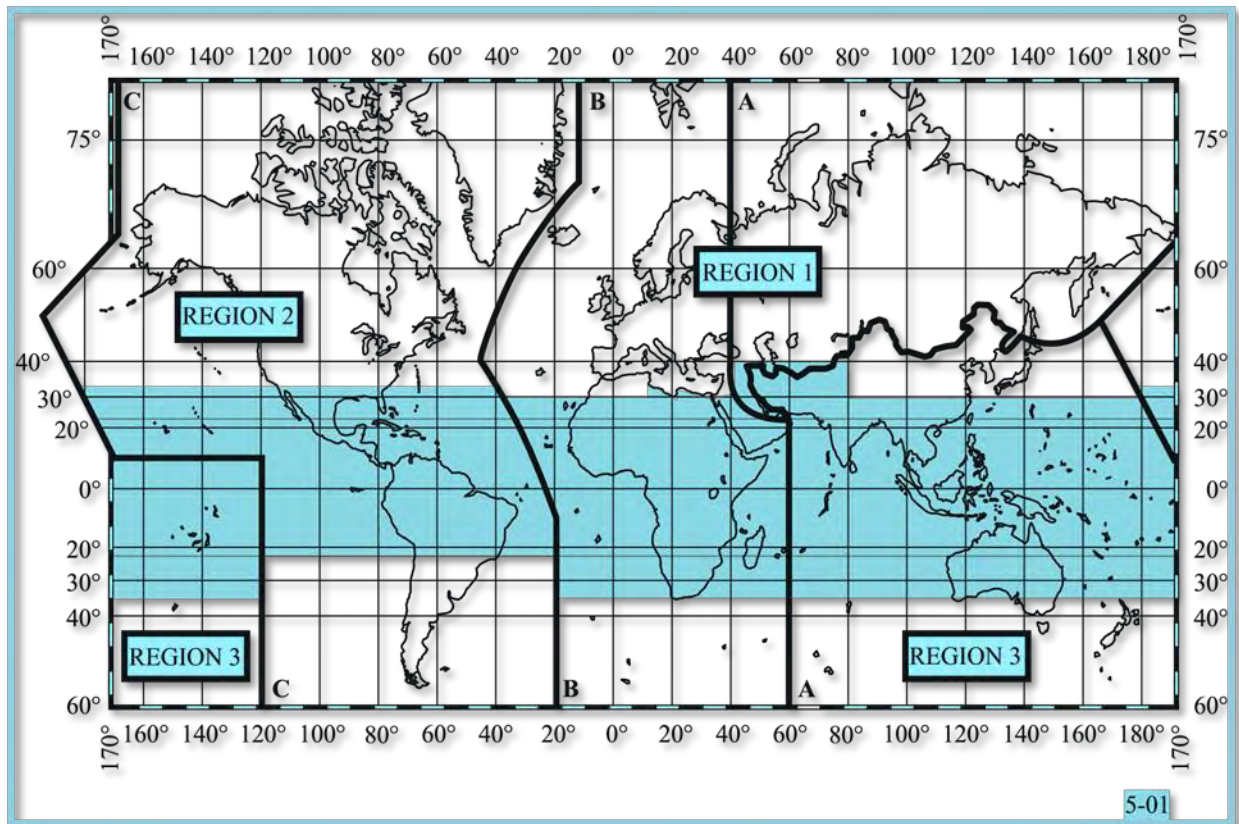
Source: ITU report 2006

Some countries - mostly the developed - have already switched-over to digital (Yoon, 2013). Ideally, if resources were available for all countries is what ITU would have wished for. Unfortunately, for small countries like Zimbabwe digitisation implies costs for a country with a cash budget of only US$ 3 billion. Zimbabwe is struggling to finance the basic needs of her people such as raw materials for industry. Prone to successive droughts and an ailing economy, food, education and medicines are a first order priority. Viewed in this light digitisation can be considered a luxury. The question is whether the country can afford to be left out of this global movement.

As observed during interviews Zimbabwe had no choice but to consider digitisation as a priority or risk becoming a dinosaur in a changing world. However, countries such as Zimbabwe with challenges in meeting the June 17 deadline, are given a grace period known as 'dual illumination' or 'simulcasting', which

literally refers to simultaneous operation of both the old and the 'new' broadcast systems (ITU, 2006). 'Dual illumination' has its unique politics and is essentially a temporary measure to allow *laggards* to catch up with the rest of the world regarding the digital revolution (ITU, 2006).

In general, the most urgent reason for the transition to digital broadcasting is to resolve the problem of the scarcity of the radio frequency spectrum (Carr, 2008). Ironically, for countries such as Zimbabwe, it is about fulfilling international regimens as indications are that there was still scope for additional television stations within the existing analogue pipes (BAZ report, 2003). This provision for additional televisions and other services within the existing infrastructure even excludes the country's additional spectrum under the old dispensation which had been loaned to developed nations (BAZ report, 2003). However, even for countries like Zimbabwe, the harnessing of additional spectrum has significantly benefited the mobile broadband sector as explained in chapter 3. In this regard, the lack of spectrum, does not only affect the broadcasting sector but the entire information and communication industry (Golding, 2008). In light of these developments, Zimbabwe's decision to sign the treaty heralded a new era that is expected to revolutionise not only the country's broadcasting sector, but also the other sectors of information and communication *(The Herald, 27 August 2013).*

1.2   The Benefits of DBM and the Criticisms of the Programme

The benefits from DBM are undoubted although perspectives about them may vary (Lister, M *et. al..,* 2008; Stork and Kanyangela 2009; Olwal, T. *et. al.,* 2013). The conversion to digital transmission represents the first fundamental change in television broadcasting since colour was added to the National Television Systems Committee (NTSC) standard more than 40 years ago (Seel and Grant, 1997). It is a transition with multi - billion dollar consequences for broadcasters who are first adopters of these technologies. Consumers who will eventually also need to replace their analogue radio and television receivers, VCRs, camcorders, and other related peripherals (Seel and Grant, 1997).

More digital channels can be 'multiplexed' on a channel previously occupied by a single analogue broadcaster (Duncan, 2012). Depending on the technology in use, an additional 15 channels per every frequency band or channel under the analogue system can be released for television, and approximately 50 more for digital radio (Burn, 2004; Brown and Picard 2005). This issue is explained fully below. The transition from analogue to digital broadcasting is also expected to create opportunities for the provision of information and communication technology applications and multimedia services, including higher quality video and interactivity (ITU Report 2006).

However, the increase in channels after digitisation is dependent on the level of digital compression of transmitted information and the allocation of bandwidth to individual channels (Duncan 2012). Notably, the increase in spectrum capacity is dependent on the type of technology used, such as satellite, cable or terrestrial (Brown and Picard, 2005). These technical issues are discussed fully in chapter 3.

Most importantly, the freed up spectrum (known as the digital dividend) is coveted virtual "prime real estate" for information and communication technology companies, and is particularly ideal for mobile broadband services, especially in the rural areas (Duncan, 2012). This is perhaps the reason the Minister of Finance and Economic Development in Zimbabwe, Patrick Chinamasa, views the digital programme as a potential 'cash cow' for the economy when it has been fully implemented *(The Herald, 27 August 2014)*. Apart from the potential financial benefits to the government, additional channels will also benefit the commercial, health, security, mobile-cellular, film, art and education, among other sectors (Forrohar, 2005; Krug 2005; Bria 2003). These benefits make the move to digital broadcasting (known as digital migration) imperative for radio and television (Berger, 2012).

The benefits to radio, during the transition to digital broadcasting, occur without additional sunk costs in terms of transmitters and associated paraphernalia. It is against this background that a practical approach to the discussion of the potential scale and scope of DBM in the digital age is sought. The fragmentation and segmentation of issues regarding the transition to digital broadcasting is even worse at the national Zimbabwean level. In the discussion of the lessons that can be drawn from the South Korean experiences with digital migration there are a number of criticisms of the programme as noted by Yoon, (2013). Quoting the views of Iosifidis, 2011; Colapinto and Papandrea, 2007; and Galperin, 2004, Yoon observes:

> Policies for digital television were determined largely by markets and political contexts, rather than by the benefit of ordinary viewers. For consumers, digital reception imposes an additional cost to acquire the equipment needed to access digital signals. For some, the additional costs may not be justified by the improved picture quality and other technical attributes of digital television. Consequently, in the absence of significant additional benefits, those consumers will tend to delay their investment in digital receiving equipment until their analogue equipment needs updating or replacement. Since there is no compatibility between analogue TV, as there was historically between black and white television, and colour TV, DTV brings uncertainty as a disruptive technology that brings changes in existing order.

Yoon, 2013:3

Observed is that the (astronomical) conversion costs, often lead to the questioning of the rationale of the programme amidst competing interests such as the need to fund the procurement of basic necessities such as food, healthcare and education (Seel and Grant, 2007). The illegal dumping of analogue equipment has been observed as an issue in developed countries with Japan disposing of 81, 427 TV sets in the years leading up to the complete switch off of that country in 2009 (Yoon, 2013).

1.3 The Importance and Justification of the Study

Zimbabwe's transition to digital transmission merits scholarly research for several reasons. Chief among these, were that literature about DBM in Zimbabwe is shallow (Manheru, 2015). DBM is a global programme to which Zimbabwe is party to through the provisions of the UN conventions, as agreed at Geneva in 2006 (ITU, 2006). Also the opportunities for content, entertainment and the diversity for voice contributing to greater democratic debate are some of the reasons why studies in DBM are popular in scholarship in the digital age (Golding, 2008). Further for Zimbabwe there are still outstanding issues that must be addressed before the country can comply fully with fulfilling her international obligations. These include the envisioning of the different aspects of the programme. While this programme started off earlier in countries such as South Africa, the phenomenon is relatively new in Zimbabwe (Ndlela, 2007). As part of the bigger picture to digitisation, the country has just completed its first direct fibre connection to the West African Cable System (Transmedia, 2013). Apart from the discussion of the challenges encountered during the implementation of the transition the study also discussed the far-reaching implications of the programme toward the entire information and communication sector. Therefore, there is need for Zimbabwe to come up with a policy framework that adapts change in line with the emerging media landscape (Chiumbu and Mazango, 2000).

As stated earlier, there are at least five key areas of the digital programme that require urgent policy attention if the programme is to move forward smoothly (Cogburn and Nyaki, 2001). These are *technology, production and distribution, regulatory framework and initiatives, the human capacity and the strategic approach of the state* in response to dramatic global and domestic processes (Cogburn and Nyaki, 2001). As channels of communication eventually increase, there is need for a policy framework that positions countries strategically, to benefit from the additional spectrum (Raboy, 2003). The lack of well-structured policies on the production and procurement of technology for Zimbabwe poses challenges to the adoption of technologies for the digital programme *(Media Ethics Commission (MEC) Report 2002).* A technological policy was observed as critical for the country, if Zimbabwe was to avoid becoming a dumping ground for

obsolete broadcasting products being offloaded by the developed countries that have already digitised (Cogburn and Nyaki, 2001). Such dumping can be facilitated through corrupt officials who care less about the success of the programme other than money. In fact, there is consensus that there is need for a 'fundamental rethink' of the policies in Zimbabwe's information and communications sector. It is against this background that the dilemmas faced by Zimbabwe in its migration from analogue to digital broadcasting within the global environment become critical.

1.4 Preliminary Literature Review on DBM

The study assessed related literature in DBM at the global, regional and national (Zimbabwean) levels. Notably, the study investigated the degree to which DBM has been researched at the three levels. In this way, gaps still calling for research concerning the transition to digital broadcasting in the country were identified. These gaps were investigated in line with the study's objectives. A detailed literature review is provided in subsequent chapters.

1.4.1 State of Knowledge on DBM: The Global, Regional and National Scene Research

Generally, at the global and regional levels, a rich body of knowledge exists on various issues related to DBM and the new media environment. Although broadcasting policy and digital migration have received attention in scholarship at the global and regional levels, what is missing is a study that integrates the aspects of DBM into a single perspective (Young, 2003). Most prior studies have discussed DTT, leaving out the other issues about DBM (Young, 2003). Of interest to this study are the works of scholars such as Thompson (1997), Graham (1998), Webster (2004), Barker (1999), Beynon (2000), Cogburn and Nyaki (2001), Young (2003), Raboy (2003), Cuilenburg and McQuail (2005), Braman (2003, 2004, 2009,2010), Castells (2004), Stork *et. al.* (2006), Weber (2010), Duncan (2000, 2007, 2012), Metcalf *et. al.* (2003), Bell (2007), Tomaselli and Teer-Tomaselli (2008), Teer-Tomaselli (2009), Ndlela (2007), Fourie (2007), Freedman (2008), Chakravartty (2008), Ibagere (2010), Berger (2010), Madikiza (2011), Olwal *et. al.* (2013) inter - alia. Although the views of the scholars highlighted above are considered in detail in the literature in chapters 2, 3 and 4 it is important to point out briefly, in this introductory chapter, that the voice of Teer-Tomasselli, the Director of the Centre for Culture and Media Studies (CCMS), sets the tempo for analysis in the broadcasting sector on the African continent at the international and regional levels. Through exploring some of the contradictions and dilemmas faced by the broadcasting sector in Africa, especially in the light of the current global changes, Teer-Tomasselli delineated the trajectory of research in Africa's

broadcasting sector, juxtaposing it to developments at the global level (Teer-Tomaselli, 2009). These contradictions are examined fully in chapters 2, 3, and 4.

1.4.2   Local Scene Research: The Zimbabwean Story

At the local (Zimbabwean) level, a number of prior studies have been carried out on policy-related issues concerning the media and communications industry in the country as demonstrated in literature (Moyo, 2000; BAZ, 2003; Mano, 2004, Ndlela, 2007). However, as observed in chapter 3, the predominant issue in media studies at the Zimbabwean level has been the question of state dominance in policy-making processes in the sector (Ndela, 2007; Moyo and Chuma 2010).

1.4.3   Gaps and New insights on DBM: A Zimbabwean Perspective

Gaps regarding DBM existed in terms of both literature and interviews conducted during the study at the conceptual, methodological and sample levels, in Zimbabwe. In addition, another gap existed relating to the discipline of DBM in its own right as an area of scientific inquiry. This was observed during interviews and also in literature. Also other gaps regarding DBM in Zimbabwe were time-bound, whilst, others were geographical as later explained in this section. Although at the international level DBM has received relatively impressive attention from scholars (for example by Yoon, 2013); the situation at the local (Zimbabwean) level, is different as perspectives about the phenomenon are still needful.

In explaining the different types of gaps that exist in terms of research in general:

> A conceptual gap relates to a situation where an issue which has been researched before may still yield alternative perspectives in terms of findings and conclusions. The lack of use of a particular methodology due to the preference for another in the investigation of an issue which could possibly be researched through another or both led to a methodological gap. A population or sample gap relates to the restriction of a research study to a specific research population area or a people who might not have been researched before. A discipline gap relates to the fact that studies are usually discipline or subject specific and as a result, certain concepts might lack research whilst others have been over researched. A time bound gap arises because the sort of research intended to be conducted was carried out before and appears outdated.

Tichapondwa, 2013:174 - 176

In the case of the study the geographical gap occupies a special place in the study since the research is a case study. There is need for a research that integrates issues involved in the transition to digital broadcasting in Africa into a single perspective. Such an approach is essential in reflecting the scope of

DBM (Galperin, 2004). Unfortunately, it appears most studies on DBM (even in the developed world) have emphasised some issues about the programme leaving out others (Young, 2003). The fragmentation of issues about DBM in Zimbabwe is in terms of the theoretical underpinnings of the programme and also the mechanics of its implementation (see Berger 2010). Zimbabwe can draw lessons from South Africa, which is observed to have produced the best blueprint(s) on DBM but is still to implement the programme many years after the blue-print was unveiled. The lack of coordination in the implementation of the digital programme has caused delays in the case of South Africa. The above views were raised during a conference on the country's digital future in Harare, Zimbabwe. This conference, held on 17–18 March 2015, was dubbed Zimbabwe's largest gathering of digital minds.

As a result, an official to the conference observed that South Africa was considered a 'joke,' regarding the implementation of DBM. The official pointed out that "if South Africa had followed the plans and strategies the country set out in the blueprint of the implementation of DBM, she would have fully implemented the programme a long time ago." Observed was that for Zimbabwe, "the country could ill-afford mistakes regarding the programme as the country lacked the time for experimenting with ideas since it was 'light years' behind." Although most countries in the Southern African Development Community (SADC) have registered significant strides toward the implementation of DBM, gleaned from literature is that a lot of work still needed to be done if full migration was to be achieved *(The Herald, 1st July 2015).* The study observed that out of 15 SADC member states, only four countries (Malawi, Mauritius, Namibia and Tanzania) had managed to fully comply with their international obligations regarding DBM *(The Herald, 1 July 2015).* The rest, including Zimbabwe had failed to meet the deadline of June 17 2015 as they were at various stages of implementing the programme *(The Herald, 1 July 2015).*

As observed, the range and depth of issues covered by scholars in the digital field have focused on DTTV (Galperin, 2004). The 'fixation' with terrestrial television, leaving out alternative technologies, has created a lacuna in literature on DBM, which gives the impression that digital broadcasting is associated only with terrestrial technology yet there is satellite and cable technologies (Brown and Picard, 2005; Gralla, 2007). Within the discourses of terrestrial television for instance, "radio is viewed as a salient benefactor of the introduction of terrestrial television because where one has access to digital terrestrial television; they also have automatic access to frequencies for radio receivers" as observed by a delegate to the digital future of the country. The preoccupation with the contestations between the state and civil society over policy in the broadcasting sector by scholars at the national level has obstructed meaningful creation of knowledge on other issues which are central to developments in the sector.

As observed, "it appears people in the creative industry in Zimbabwe (especially those in film) were stuck in the past and spoiling for a fight with the ZBH who they accused of having failed to pay them for the content they had provided the public broadcaster before. As a result, film producers were ambivalent about engaging the future".

However, as content producers were preoccupied with past battles transformations in the information and communications sector were occurring at supersonic. The failure to see the brighter side of digitisation by content producers at this critical moment of the programme was worrying. Producers lack the confidence to move forward in terms of digitisation and the creative industry. This negatively impacted digitisation. Meanwhile, with six channels to be introduced during the country's migration, ZBH requires content, and so do the other private channels to be introduced. "The long view to broadcasting policy regarding the dynamics of policy at the global level" is an issue of concern regarding the current digital migration (Braman, 2004). This is particularly reflected at the local (Zimbabwean) level, where the linkages between the global and local initiatives regarding policy and practice are missing.

There is also lack of knowledge on how current international dynamics are influencing change in this sector in Zimbabwe, especially in terms of adopting polices that adapt change in terms of technology, content, ideology, policy and skills development among other issues. Theoretically, the preoccupation by most Third World communication researchers with cultural imperialism and the attendant western models, without providing a coherent communication structure in keeping with current developments in the sector has not been helpful (Boyd-Barrett and Newbold, 1996).

There is need therefore, to refocus research energy towards harnessing ideas that can engage the discourses about new media and its environment (Boyd-Barrett and Newbold, 1996). It appears most Third World communication researchers were trapped in the combative discourses of the 1970s when overthrowing colonialism had climaxed the planetary gravity of issues constituting the information and communications sector. The views of Boyd-Barrett and Newbold above are regarded as the mainstream ideas for broadcasting research in the global age. "Rethinking broadcasting policy at the national level can be more meaningful, when located within the global context" (Raboy, 2003).

While the major objective of this study is to identify and develop insights on Zimbabwe's roll-out programme on digital migration and also explore the dilemmas associated with the programme, it is also critical to reflect on the nature and importance of this process, if a complete picture of the country's digital revolution

is to be achieved (Metcalf, 2003). Whilst perspectives about DBM are lacking in Zimbabwe, the situation is markedly different at the regional and international levels, where such knowledge exists in varying degrees. In Africa, perhaps with the exception of South Africa and Namibia, digital migration has remained the language of bureaucrats in government and a few technical experts involved in the implementation of the programme (Olwal, 2013). Therefore, there is need to clarify issues and perspectives about the programme. Broadcasting policy in the global environment is more of an international issue, just as it is national (Medeisis, 2009).

1.5 In Search for Lenses by which to Analyse DBM in Zimbabwe: An Analytic Framework

Theoretical perspectives on media and society are diverse in several respects, emphasising different causes and types of change and pointing to different paths into the future of the field (McQuail, 2005). In some cases, they even represent alternative philosophical positions and opposed methodological preferences (McQuail, 2005). "Knowledge represents and permeates the character of its epoch and the dominant positions of the era, referred in research parlance as 'tradition'" (Newman, 1996). This issue is explained in chapter 2. 'Tradition' relates briefly to a specific stream of ideas linked to specific historical epoch and its character (Newman, 1996).

Theorising broadcasting in a globalised environment in the context of this study is increasingly difficult as technology changes (Gripsrud, 2010). Due to the 'cataclysmic' changes in the sector, scholarship has literally been thrown into disarray in its attempt to make meaning of developments in the sector (Valdivia, 2006). The result has been confusion (Trend, 2007). An urgent remap of the future of the information and communications sector in general and of the broadcasting sector in particular is therefore needed (Valdivia, 2006).

In my view, even grand theories such as 'cultural imperialism', which until recently, animated debates in broadcasting, now appear inadequate to provide the kind of lenses and scope necessary for the understanding of issues in broadcasting. This situation has been worsened by the radical changes that have occurred in broadcasting (Raboy, 2002). Issues of theory in the study are comprehensively dealt with in Chapter 2. In this chapter, an outline of media theory is given just as a window through which a basic understanding of the field could be achieved. Furthermore, Chapter 2 reflects on the nature of theory in post-colonial states such as Zimbabwe as it relates to the information and communications sector. Another issue regarding issues of theory in the study, is the question about how researchers adopt the theories they use to illuminate and acquire data in research.

1.6 The Location of the Research: The Geographical Gap

While at the global level, the transition to digital broadcasting has received convincing attention from scholars the situation is different in Africa where insights on the basics of the programme, are needful (Berger, 2012). Proverbially, 'minted' within the context of a rich and ambitious description of the information and communications sector, the study sought fresh perspectives of DBM from a Zimbabwean perspective.

The focus on Zimbabwe is simply an acknowledgement of the fact that DBM has unfolded differently in different countries (Galperin 2004). The ways in which the DBM has occurred in different countries has reflected the different political institutions and legacies in the broadcasting sector of different countries (Galperin 2004). This research is about change in the broadcasting sector in Zimbabwe.

The study documents the transition from a world of spectrum scarcity, dumb terminals and one-way services to a world of abundant channels (Galperin 2004). The choice of Zimbabwe as a case study for the consideration of DBM has resulted in a 'geographical gap' for the study. In research parlance, a geographical gap relates to a situation whereby similar studies have been carried out in other places other than the site of the current study (Tichapondwa, 2013).

Fig.1.6 Map of Zimbabwe:

INFORMATION AND MEDIA PANEL OF INQUIRY OUTREACH MAP
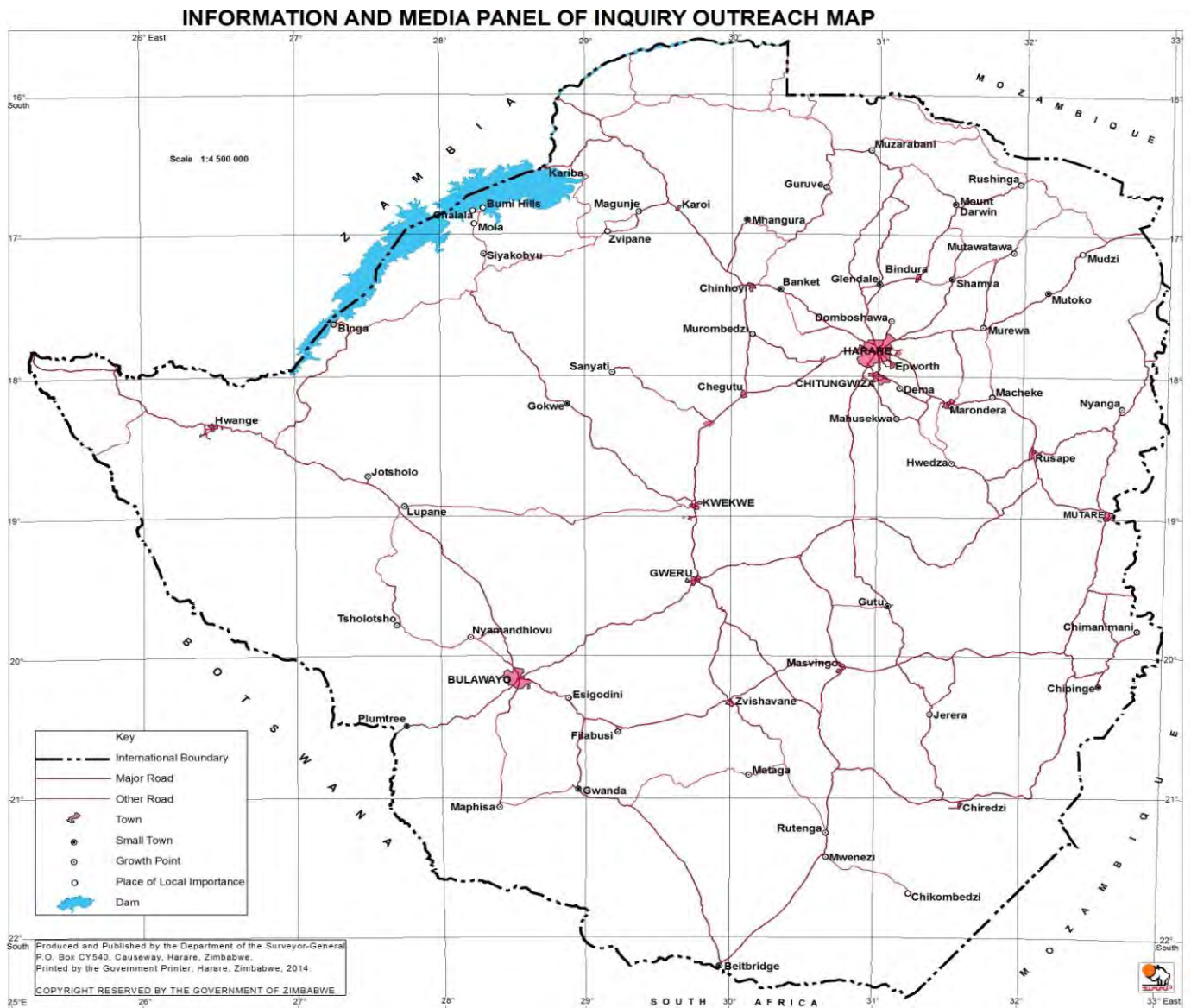
Source: IMPI report, 2014:38

Zimbabwe has the longest history of broadcasting in Southern Africa (ZBC CHANNELS *on* AIR house Magazine for the Zimbabwe Broadcasting Corporation 2002). It is rather ironic that having established broadcasting service in the 1930s, Zimbabwe has to learn about DBM from Namibia whose broadcasting systems were only launched in the 90s.

Zimbabwe is a country of 395 245 square kilometres; with an estimated population of 14 million people (Central Statistical Unit in 2009). Until recently, Zimbabwe's information and communications sector, which

has been dormant for years owing to a crippling economy, is now recovering and diversifying (Chuma, 2010). Zimbabwe's adoption of the digital migration programme has seen its media, especially the broadcasting sector, on the verge of a revolution. This programme, whose implementation is overseen by the ITU, is expected to transform the broadcasting sector in the country.

1.7   Zimbabwe's Considerations about the Digital Programme: A Problem Statement

While the current digital revolution in the broadcasting sector yields tremendous benefits such as increased channels of communication, and is ultimately expected to improve the quality of debate in the public sphere, there are outstanding issues which need to be addressed before digitisation in Zimbabwe can successfully be implemented in the country. The pervasive role of ICTs in national and global economies has made the sector a vibrant enabler and a formidable arbiter in national and global economic processes (IMPI report, 2014). Sadly, the new thinking about the sector seems not to reflect the new culture of Zimbabweans (IMPI report, 2014). Largely, Zimbabwe has missed the international deadline for DBM and is hoping to have fully complied with the programme's requirements by 2016. The envisioning of the programme is largely outstanding in the real sense *(The Herald, 1 July 2015).*

Fig 1.7 Theoretical map of major issues organising the study:
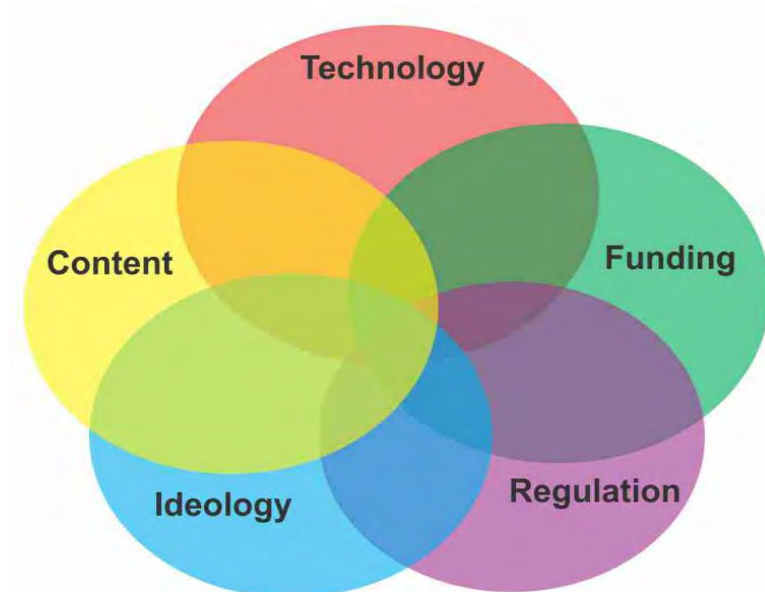
Source: PhD study by Johnston Amanda Kim, 2011:16

1.8   Aim and Objectives of the Study

1.8.1   The Primary research aim of the current study is to develop insights on DBM and investigate the dilemmas associated with the programme in Zimbabwe.

In order to achieve understanding of this aim, the study will pursue the objectives hereunder:

- explore the imperatives of change in broadcasting within the global arenas of technological change and policy regimens;
- investigate the level of knowledge and understanding of the migration among stake-holders;
- identify lessons for the future and analyse their implications for theory, policy and practice in digital migration

1.9   The Research Questions

The Central Research Question:

What is the current state of broadcasting vis-à-vis digital migration in Zimbabwe in the context of the global environment; and what is the understanding of digital migration from a policy, technological, funding and ideological dimension, as well as the opportunities for content development, entertainment and the diversity of voices contributing to greater democratic potential?

Sub Research Questions are:

2.   Why should Zimbabwe migrate?

3.   How should Zimbabwe migrate?

4.   What challenges and opportunities face Zimbabwe in its digital migration roll out?

1.10   Research Propositions

Digital Broadcasting Migration is at the heart of modern economies (Cogburn and Nyaki, 2001). The transition to digital allows for the 'repurposing' of additional spectrum from the broadcasting sector to other areas of a country's economy which need radio frequencies to operate, such as the mobile sector and the internet (Duncan, 2012). Therefore, there is need to fully understand the nature of the transition and its implications for the economies of small countries such as Zimbabwe. These countries are still grappling

with mustering the plans and strategies to implement the programme. As a result, new filters in terms of theory are required if a complete appreciation of the changing media landscape is to be achieved (Chan and Keenan, 2006).

Dimensions of Research

In research, there are at least three dimensions, which are context, theme and the research approach or methodology (Machengete, 2014). Context identifies the main discipline of a research (Arsenault and Morrison-Beedy, 2004). In the case of this study, the discipline of study is broadcasting. It is, however, important to point out that "it is from electrical engineering that the roots of new media can be traced (Seel and Grant, 1997). It is also due to technical improvements owing to innovations in electrical engineering, that the increase in the flow of information has resulted (Goleniewski, 2007). The other dimension to research relates to the 'subject' of the study. In this regard, the spotlight of the current research is on the country's transition to digital broadcasting and the attendant issues of spectrum management. These issues constitute the subject of study for the research. The third research dimension is the researcher's philosophical stance and the general perspective of the research in terms of the study's philosophical underpinnings.

DBM in Zimbabwe: In Search of a Methodology

The research design and methodology for investigating Zimbabwe's transition to digital broadcasting are explained in Chapter 5. It is also in Chapter 5 that the study's research values within the context of specific philosophical research assumptions are explained. Chapter 5 discusses the study's research assumptions, that is ontology, epistemology, axiology, praxeology, doxology and methodology assumptions of the study. The preliminary engagement with these philosophical research assumptions in the present chapter assisted with an elementary understanding of the study's methodology, without which the selection of the research's methods would have been difficult (Creswell, 2009).

1.11   The Research Paradigm and Research Philosophy

Since the study is about speculating, discovering and documenting as well as to provisionally order, explain, and predict, (presumably) observable processes in and the structures and strategies that have been put in place by Zimbabwe to facilitate the implementation of DBM in the country, the nature of the questions, the aims and objectives of the study lend the research to the 'qualitative paradigm' (Johnston,

2011). In research, a paradigm is a way of thinking about a phenomenon (Guba and Lincoln 1994). In simple terms, a paradigm relates to a "worldview of a subject which includes its underlying philosophy and assumptions inherent in the view" (Kuhn, 1996). A research paradigm reflects the intention, motivation and expectations of a researcher concerning a phenomenon (Leedy and Ormrod 2010). Sometimes, the terms 'research, paradigm' and 'philosophy' are used interchangeably (Guba and Lincoln 1994). Without a paradigm, there can be no basis for subsequent choices by the researcher regarding methodology, methods, literature or research design (Chirume, 2008). Many theoretical paradigms in research, such as positivist (and post-positivist), constructivist, interpretivist, transformative, emancipatory, critical, pragmatism and deconstructivist exists (Saunders *et. al.*, 2009).

The present study, adopted a pragmatic approach to the analysis of DBM in Zimbabwe. Pragmatism focuses on the 'what' and 'how' of a research problem (Creswell, 2003). For instance, this study is concerned about 'what' digital migration in the Zimbabwean context is, exactly; and 'how' the country can migrate given the myriad of challenges she is facing. The pragmatist researcher places the problem of the study at the centre of their attention, and applies all the possible approaches at their disposal to understand the problem (Creswell, 2003). The meaning of research philosophy is thus critical. Research philosophy simply relates to the sum of the philosophical assumptions influencing a study (Collis and Hussey, 2005). More poignantly Creswell defines research philosophy, as "a belief in how a researcher may gather data regarding a problem, how such data can be analysed and ultimately used (Creswell, 2007). The study observed at least six philosophical assumptions for the study. These are ontology, epistemology, praxeology, axiology, doxology and the methodological assumptions. These assumptions are explained in chapter 6.

1.11.1 The Writing of the Thesis

Once a research project is completed, it has to be reported either in oral form or written (Machengete, 2014). In my view, of the four functions of research: *reading, speaking, listening and writing*, I venture to point out that I found writing demanding. Modesto Tichapondwa weighs in by stating that writing involves broadened decision making in terms of the style of the presentation of thoughts and the layout of issues" (Tichapondwa, 2014:253). Most research projects (particularly at the start) are far from straightforward

(ibid.). Although the final research report does not reflect the confusion and the uncertainties one went through during the putting together of the thesis the truth is that writing is demanding as illustrated below.

Fig.1.8 The Writing of the Thesis:

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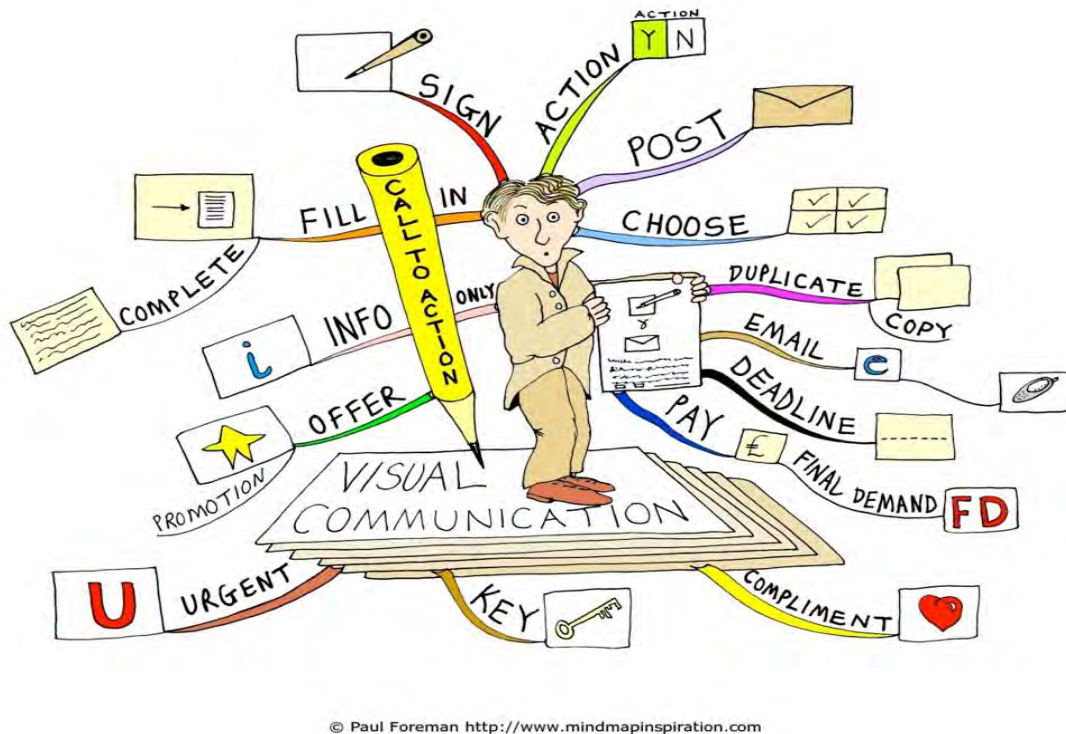
Source: Tichapondwa, 2014:253

1.12   The Quality of Study

The quality of a study is critical. "For some time, clarity, consistency, and coherence, (all which are issues linked to the quality of a study), have been of concern to the qualitative research" (Johnston, 2011:94). Until as recent as the 1980s, qualitative research was considered as 'poor research, lacking in scientific rigour' (Denzin, 2009). These views about qualitative research have since waned (Creswell, 1994; Marshall and Rossman, 1999). In the views of Bill Gillham, the current scientific world had shifted attention from viewing qualitative research as poor research, to embrace the methodology's unique capacity in 'unlocking the deep secrets of the heart' in terms of knowledge creation (Gilllham, 2000:10). At least, six ways have been identified by which to judge the worthy of a qualitative study (Bowen, 2005; Denzin, 2009). According to Glenn Bowen, these are *prolonged engagement with the field, triangulation, peer reviewing, member*

checking or verification, negative case analysis and auditing (Bowen, 2005:214-5). However, due to lack of time and other constraints, researchers rarely employ all six procedures. Quality in this research was achieved mostly through the triangulation of methods and sources of data, prolonged stay in the field of study, peer reviewing, and verification. The strategy of triangulating the tools for data collection reduced the risk in which conclusions reflected what Maxwell, Carter and Miles observed as systematic biases of particular tools (Maxwell, 1997; Carter and Miles 2007). The researcher ensured that transcribed data was sent back to the interviewees for verification of facts. This procedure allowed the interviewees to cross-check their responses for omissions and misinterpretations of their opinions by the researcher during transcription. This process also gave the interviewees the opportunity to give additional information where oversight might have occurred during the interview process.

1.13   Limitations of the Study and Possible Solutions

Every research has limitations (Baxter, P. and Jack, S, 2008). The limitations of a research may range from the philosophical, conceptual and methodological weaknesses to the more practical problems such as financial and spiritual limitations. Three years engaged in research is a lifetime. You can lose both friends and acquaintances. Most importantly the death and illness of close relatives distracts attention. All these misfortunes occurred to me during moments when I most needed to focus on my study.

At the philosophical level, weaknesses and limitations occur at various levels in research such as the conceptual, methodological, epistemological and analytical (Guba, 1990; Gill and Jameson, 1997). As observed, "each conceptual framework and study design hides weaknesses" (Creswell, 2007:10). There are also limitations to a study related to the method of analysis (Denscombe, 2007). For instance, "grouping data into sensible themes during analysis imposes on research findings in a pretty strong way" (Denscombe, 2007). "Data in the format of a grouped frequency distribution may be easier to understand, but has moved away from a natural or raw state and bears the hallmarks of the creative shaping of data by the researcher" (Denscombe, 2007). Furthermore, to every preferred research design, there are alternatives (Creswell, 1994). The alternative designs could articulate the research problem in a much better way than the selected given the opportunity (Marshall and Rossman, 1999). Therefore, in my view, the choices for the methodologies and methods by which to study phenomenon almost all the time are fraught with weaknesses. Some of these weaknesses may not be obvious and only appear when the study is already in motion.

In this study limitations are a motivation to a source of solutions (Creswell, 1994). The reality to research is that there are always trade-offs of all kinds that influence the research process in one way or the other. These tradeoffs may strengthen or compromise the quality of a study in different ways. Therefore, I had to consider and reconsider the preferred methodologies and methods for the study I could settle for a particular design. This is the only way by which one can overcome the weaknesses related to a study's methodology (Marshall and Rossman, 1999). The above process "involved the careful matching of the study's objectives, questions, methods and methodologies" (Creswell, 1994). The process further involved "the weighing of the suitability of directing the study in a particular way and not the other" (Creswell, 1994; Marshall and Rossman, 1999).

However in all fairness engaging with the above processes and procedures does not entirely deal with the weaknesses linked to the methodology and methods of a study, but it helps ensure that whatever the choices the researcher makes regarding the methodology and strategies used for a study are based on watertight considerations (Marshall and Rossman, 1999). For qualitative studies, even if one had adopted research strategy which turns out to be inadequate at fulfilling the aims and objectives of the study, the strategies could still be refined as the study is already in motion owing to the flexibility of this approach (Creswell, 1994). Such flexibility has been identified to be the major strength of the qualitative research design (Leedy and Ormrod, 2010). What the study is and is not – its boundaries – and how its results can and cannot contribute to the understanding of an issue, can be its weakness (Marshall and Rossman, 1999).

There are issues that a study may choose not to investigate and those which it explores due to various considerations. For example, this study could have been a comparative study of Zimbabwe and South Africa regarding DBM. South Africa has had an illustrious history with DBM ahead of other countries in the region (Berger, 2012). However, because of the lack of time and resources to engage such an involving study, the researcher adopted Zimbabwe as its case study. 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 generalisable.

With a thorough analysis of the philosophical assumptions of the study, I was convinced that I had adopted a comparatively effective design for the study. The major drawback to this study remained inadequate funding. Being an international student from a country under sanctions carried with it a 'stigma' that blocked some of the channels for funding which the researcher could have utilised. Most of the scholarships

available at UKZN were for South African citizens. As observed the issue of objectivity in terms of the nature of the data 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 (Mouton, 2009). An effective sample, proper conceptualisation and operationalisation, a study's instruments, reliable data collection and editing can lead to an objective study (Mouton, 2009). The quality of the study was also ensured through the adherence to what is known in Latin as 'sequitur reasoning' (Mouton, 2009). Sequitur reasoning simply relates to the collection of logical evidence to a study.

1.15   Research Funding in Africa: A Philosophical Approach

With national budgets of some of the African countries entirely funded by donors, research funding can be a luxury. 'Research funding' itself is an interesting area for research exploration with the potential to generate different views. I failed to secure the necessary funding in terms of financial resources to pay for the expenses linked to the study. This constrained the study.

I could not fulfil some of the research obligations as scheduled due to the lack of adequate financial resources. Most bursaries and scholarships at UKZN were designed for the citizens of South Africa, although the 'fee remission,' a facility provided by the South African government, which caters for full-time PhD students from the SADC region attending that country's universities ameliorated my financial problems during my studies. At least with fees taken care of, my financial concern were on the finances for accommodation, food and general upkeep, fieldwork, transcription, photocopying, printing and travelling among other research related costs.

The attempt to find a sponsor for the study from my mother country, Zimbabwe, was quite revealing. Notably, the process I went through trying to raise financial resources for my study from my mother country Zimbabwe made me to engage critically, the way some of my fellow countrymen regarded the issue of research funding. I observed a lackadaisical manner in which the private sector in Zimbabwe regards not only issues of research, but the whole issue of manpower development. It turned out that whilst, the private sector poured large sums of resources towards workshops and conferences for training, this had limited impact on human resource development, due to the limited period of engagements involved. At most workshops and conferences only lasted a day to a week.

I observed that issues of research were the least considered of the Zimbabwean academic culture, through the responses to my request for financial support for my study. Quite notably, the country's budget has a small portion of financial resources devoted for the research function. For a nation that prides itself in literacy that was surprising. For confidentiality I will not publish the responses to my request for financial support as prior consent to do so, had not been sought. Divulging such information would not only be unfair to the organisations and companies involved, but also smacks of 'hypocrisy and blackmail' on my part. It would therefore be unethical to reveal such information without authority.

The learning opportunities, about the responses to my request for financial support for the research, were the most important for me. After all, "every event, moment and issue related to a study offered numerous learning opportunities, which required a sharp eye to discern" (Mouton, 2009). Keeping track of issue related to a study was in itself a form of quality assurance as it enables the researcher to construct a historical record of the whole process to which a researcher can return to whenever necessary (Mouton, 2009).

It is within the above context, that the negative responses to my request for financial support were considered. It offered lessons on how research in Zimbabweans is viewed. More perceptively, the experience enabled me to appreciate the equivocal nature of my countrymen toward research. Although critical, issues of research were treated with ambivalence. The country lacked policies to support research and manpower development.

The country's manpower development and research policies were outdated having been crafted in the 1980s when the focus in the sector was the achievement of basic education. As observed it is therefore, not surprising that the development of PhDs is not regarded a priority but left to the efforts of individuals. Observed was that:

> Little resources were channelled towards research and development. This gives birth to a consumer mindset hence forth taking time to implement current technologies or even to developed to better ways of doing things. In my view we should have taken advantage of the digital migration programme to showcase our technological innovations. We have so many universities and technical colleges but we have nothing to show for the investment in education. It is said that we have to import even Set Top Boxes in an age where we could simply reverse engineer some of these gadgets locally. What would be the purpose of the Scientific Industrial Research Development Centre (SIRDC), if we cannot engage some of the most basic innovations for our people.

It is against this viewpoint that the wherewithal of crafting for manpower development and investing money in research in Zimbabwe has become critical. In some instances, some organisations that the researcher felt strongly would be keen to fund the study as they stood to benefit directly from insights generated by the study instead referred the researcher elsewhere for financial support. In my view, some of the referrals were to organisations whose activities were further away from the objective of the study. This raised questions on the ownership of the digital migration programme. It is within this context that the study also observed that rather than committing resources to long term projects of manpower development in specialised areas such as digitisation, most private companies preferred contracting such critical functions to foreign companies. This did not only deny the local citizens critical skills and knowledge of modern society but also haemorrhaged the country of financial resources.

Furthermore, the reliance on consultancy for engineering services had seen local engineers going through a period of 'deskilling' as they have nowhere to apply their skills and knowledge. The private sector was observed as the biggest culprit as they tried to avoid any costs related to manpower development and research. Despite the financial challenges, I however, managed to mobilise resources from friends and relatives to complete the programme. As observed, the fee remission from the UKZN for fulltime PhD students helped stabilise my financial situation during my studies. It should also be acknowledged that I received support other than financial from other organisations. This included information required for the study.

1.16   The Recommendations of the Study

My personal judgments regarding the future of digitisation in Zimbabwe were dealt with in chapter 7. The personal judgments constituted the study's recommendations. They also reflected my personal value judgments relating the position of the study

1.17   Definition of Terms: A 'Bumptiousness' Model

Although terminologies, concepts, and notations related to the study were explained during the development of the study, a glossary of key terms in the appendices has been further provided. This approach not so common in research studies of this nature is known as the 'bumptiousness' model (Tichapondwa, 2013). This model was developed as an alternative to the relatively boring list of definition of terms in most research studies (Tichapondwa, 2013). Also behind the model was the thinking that

definitions of terms had to be kept to a minimum in the body of a write up, to avoid distracting the reader with endless definitions.

1.18   Summary and Conclusion of Chapter

Through an outline of the issues to the overview of the study, Chapter 1 mapped the overarching architecture of the critical issues of the study. The chapter introduced the study, focusing on the key aspects of the research. It discussed the research problem, questions, and preliminary literature. The chapter also considered the theoretical framework of the study. Quite notably, the chapter also identified the gaps in knowledge about DBM in Zimbabwe. Most importantly, gaps to the research were identified in the present chapter. Chapter 2 shifts focus on to the discussion of the filters of the study in terms of theory.

SECTION II: LITERATURE REVIEW

CHAPTER 2

IN SEARCH OF A THEORY TOWARD THE UNDERSTANDING OF ZIMBABWE'S TRANSITION TO DIGITAL BROADCASTING: EXPLAINING THE FILTERS OF THE STUDY

2.0   Setting the stage

Chapter 1 considered the primary issues of the study. In outlining these issues, the chapter presented the introduction to, and an overview of Zimbabwe's transition to digital broadcasting. Included in the chapter were the statement of the problem, research questions, key definitions and the justification of the study. Considered also in the previous chapter was the preliminary literature to the study. Albeit at low scale, chapter 1 also highlighted the methodology of the study. A full description of the study's methodology was however presented in chapter 6. Briefly engaged in chapter 1 also were the processes and procedures for reporting, analysing and interpreting the study's findings.

2.1   In Search of a Theory to Understand DBM: An introduction

In the views of Niels Brugger, research theory serves two functions (Brugger, 2003:8). These are the 'analytical' and the 'methodological' (ibid.). Essentially, the present chapter is about the 'analytical framework' of the study whilst the methodological function is considered in chapter 6. In the views of Chris Hart, (2007), both the theoretical framework and methodology of a study are usually combined in a single chapter. In the case of this study, the two were considered separately to achieve depth and detail. Quite notably, John Mouton observes that "both functions of theory can be classified under the epistemic purpose of a study in philosophical terms" (Mouton, 2009:55). Perceptively, the analytical function of a theory relates to the 'meaning' and 'understanding' of an issue, whilst the methodological function is linked to the "data collection" (Brugger, 2003:11). As notated by Nod Miller and Rod Allen, the understanding of culture and technology is difficult (1995). This is because the most significant features of both culture and technology are subtle and as a result, usually taken for granted (Barker 1999). Further the difficulty in engaging culture is the fact that it is enacted in everyday routines of life (ibid.). Therefore, people's capacity to engage perceptively with the aspects of both culture and technology resides in what is considered important about them (ibid.).

Like any event of life, digital broadcasting migration occurs in the context of specific analytical tools. Moulded in the context of questions such as whether there exists an African philosophy and if it does, what its nature is, the current chapter engages with some of the controversies relating to the metaphilosophical debate in Africa' as it relates to the discourses of digital broadcasting migration in Zimbabwe. In general, the questions about metaphilosophy in Africa are critical to the search for an African philosophy as observed by Ani Casmir (2005:1). Guy Berger describes it as the quest for a 'distinctly African toolset' through which to consider issues of communications about the continent (Berger, 2012). It is the same questions about African philosophy as highlighted above that in the views of Keyan Tomaselli the founder and former director of *the Centre for Communication and Media Studies (CCMS),* constitutes the planetary issues in cultural studies on the continent (Tomaselli, 2012).

2.2   What is Theory exactly and what are its Purposes in Research?

A great number of authors observe that theories exist to illuminate some of the intricate and complex aspects of our lives (Durham and Kellner 2006; Brugger, 2003; McQuail, 2005; Craig and Muller 2007). One question which continues to recur in the minds of scholars has been 'What theory is, exactly?' Dennis McQuail, ventures to say theories offer "law like propositions through which real life situations can be understood …" (McQuail, 2005:14). Meemkshi Gigi Durham and Douglas M. Kellner say "a theory is an optic that focuses on a specific subject matter" (Durham and Kellner, 2007: xi). Practically, theories need not to be regarded as just a litany of intellectual abstractions for academic speculations, but ideas that provide humankind with sound and tangible ways of thinking and talking about life situations (Craig and Muller, 2007:8). They address a variety of practical issues in society (Brugger, 2003:10). The ability to describe issues about life is a critical function of the use of language (McKay and Hornberger 1996). It is against such drapery of practical considerations about the transition to digital in Zimbabwe that the programme can be viewed as occurring in the context of certain concrete 'ideas and concepts in terms of theory. Trevor Noble says "these 'ideas' and 'concepts,' help facilitate meaning and understanding" (Noble, 2000:1-5). Also, models were used in a variety of ways to clarify DBM (Kuhn, 2005. In simple terms a model can be defined as a graphical representation of abstract ideas. Denis McQuail defines a model as a selective representation in verbal or diagrammatic form of some aspect of the dynamic process of mass communication (McQuail, 2005:5). Models were critical to discuss complex technical processes and procedures about DBM.

When people encounter a situation in which they lack insight, they usually turn to the help of theories through which clarity can be achieved. Another important concept to be considered in the present chapter also is the notion of 'tradition'. Knowledge belongs to a specific tradition in a variety of ways. These ways could be time, style, nuances and even character. In research parlance, the concept of tradition implies the way of thinking about a phenomenon within a specific context in scholarship (Craig and Muller, 2007: XIII-XV). The word 'tradition' can further relate to 'waves of ideas' in scholarship (ibid.). Such ideas can be unique to a historical epoch, theme or any other peculiarity about the concept as highlighted above. As observed earlier, such context could be historical and or time bound among other issues (Tichapondwa, 2013:175). Generally, people have unique ways of expressing themselves about issues in life which could be typical to their style, age and preferences unique in themselves. Specific avenues of thoughts about a people form endure and die over time, as they eventually loose lustre and outlive their usefulness in engaging and describing life occurrences (Tomaselli, 2012). The established and cultivated ways of 'thinking' and 'talking' about an issue in terms of knowledge, relate to a 'tradition'. As previously explained this could relate to both time and space. Therefore, a reflection of the historical trajectory of communications theory literally involves the engagement with layers of successive traditions, which constitute the discourses about the sector.

Theory is a coherent set of ideas and concepts of how the world (or parts of it) can be explained or understood (Brugger, 2003). In terms of research, theories help develop a framework, through which we analyse phenomena, interpret them and even assign meaning to them (Noble, 2000). Therefore, theories of media and communications, 'acknowledged or unacknowledged', shape understanding and practice in this field, the same way as economic theories frame the understanding of and involvement in economic practices (Brugger, 2003). Apart from the above functions, theories can also be used to facilitate certain occurrences in society in line with the broad objectives of a society (Svedberg, 2010).

2.3   A Confessionary Note Regarding the Field of Study

The concepts of communications, media, information and broadcasting were used interchangeably in the case of the study. This is deliberate as in my view, these terms belong. Although, the boundaries of the study in terms of the 'broad' and 'immediate' areas of the research are considered in the rationale of study in Chapter 3, a confessionary note to explain the somewhat confusing use of the concepts above is required. In my view, due to the practical implications of convergence there has been a blurring of media as observed by Henry Jenkins in which services offered across networks have become inextricable merged

into each other (Jenkins, 2006). In other words a service previously provided exclusively through television can now be provided through the mobile phone and *vise - versa.* This development has further complicated matters relating to issues of theory in the information and communications sector. Before elaborating convergence, it is important to observe as pointed out by Robert T. Craig and Heidi L. Muller that "communication theory refine, and often intend to reform everyday ways of thinking and talking about communications…" (Craig and Heidi, 2007:1). The concept of convergence is probably considered the most radical change of digitisation in the information and communications sector. Basically, three forms of convergence exist (Goleniewski, 2007). These are technological, digital and telecommunications (ibid.). Technological convergence relates to the evolution of technology towards performing a similar task as elaborated earlier (Golding, 2008). Digital convergence can be described as the proverbial 'amalgamation' of four industries (information technology, telecommunications, consumer electronics, and the entertainment industry) into a conglomerate essentially offering a particular service (Henry, 2006). Telecommunications or simply network convergence is another form of convergence linked to the other forms above (Goleniewski, 2007). However as discussed in chapter 4 other forms of convergence exists which relate to content and culture and even the electronic industry (Henry, 2006). The current chapter provides a theoretical framework of the study through which the issues to the study acquired 'understanding.' The chapter also explains the central concepts to the study such as information and communications.

2.4 Communication and the Conduit Metaphor: Toward the definition of Information and Communication

As a complex concept communications is difficult to define. The definition of communication and thus the contours of communication theory; have historically reflected common reference points as explained by Robert T. Craig and Heidi L. Muller (2007:1). These multifaceted common aspects of the everyday experiences of human engagements are easily taken for granted and thus escape humanity's critical eye. Observed by Robert T. Craig and Heidi L. Muller is that there is a preponderance of the 'conduit metaphor' in the way communication is defined. In the conduit metaphor, the definition of communication is about how people get their thoughts across (Craig and Muller, 2007). This is what has been referred to as the 'conduit metaphor'. The preoccupation with the transmission of 'thoughts across' as communication, is further explained by the following statements 'none of Sean's feelings came through to me,' and 'Charmaine you have to put each concept into words very carefully'. From a social context, communications, simply relates to the activation of the individuals' intellectual participation in solving problems through dialogue.

Technically, the concept of information is linked to the technology used for communications (McQuail, 2005). In the views of Marshall McLuhan the term "media relates to the channel of communication whether technical, written or spoken word" (McLuhan, 1964:19). In the context of the views above, the technology of communication such as radio receiver, television and phone can be considered the message and the 'message' (which is the word) can also be considered the media and vice-versa (ibid.). In the opinion of Sandra Braman the concept of "information can be explained in terms of the nature of social engagement, for instance, is it one sided as in the transmission of 'information' or is it liberal and in the form of a dialogue with feedback, as in communication" (233 - 242). More often than not, the concept of information is associated with the transmission of 'propaganda' a derogatory term implying messages that are targeted at 'brainwashing' (Noam Chomsky, 2013). The idea of communication as a process of packaging of thoughts and feelings into words and sending them through a conduit (a communication channel) to recipients has been pervasive in 'ancient European cultures' such as the archaic Greece of Homer's Iliad and Odyssey to present (Craig and Muller, 2007). The conduit metaphor approach to communication is relevant to the concept of 'pipe' through which information is transmitted. This therefore implies the discourses about transmission have become relevant in the digital age in which the focus is on harnessing greater radio frequency utilisation. The situation in ancient Africa can be considered the same where a certain drum beat from the gong - man transmitted a particular message to the intended receivers of the message. The 'Iliad' is an epic poem in the distant world of archaic Greece (around 600 BCE) (Craig and Muller, 2007). Communications relates to dialogue or social engagement among people. The basic definitions of the key concepts above, explain their arbitrary use in the study. Further such use of the concepts highlighted above, captures the entire perturbation of the field of information and communications rather than recycling the fragmented and segmented approaches of earlier studies in the sector. Therefore, the use of these terms in the study without adhering to strict boundaries in terms of meaning can be viewed as a celebration of the linkages among the concepts established over years.

2.4.1   The Historical Trajectory of the Information and Communications theory and the Varying Epistemological Positions

Quite notably, information and communications theory is loaded with centuries of varying epistemological positions far weighty and beyond the scope of the current study. As a result, only a brief trajectory of theory about the sector is what is provided in this chapter. For deeper appreciation of, and in order to acquire perceptively the trajectories in information and communications both classic and newer texts regarding the sector were provided for further reading. It is against this backcloth, that the present chapter explains the

processes and procedures which scholars engage when contemplating the filters or lenses by which to use during research

In contemplating the lenses through which DBM in Zimbabwe can be understood, it became imperative to reflect the trajectory of theory in the information and communications sector. The engagement with the trajectory of the information and communications theory occurred at the international and local Zimbabwean levels. Wendy Hui Kyong Chun and Thomas Keenan observe that information and communications theory can be considered through the binaries of 'old' and 'new' media (Chun and Keenan, 2006:2). The idea of communications theory being 'old' stems from the view that people were born communicators. The above view is captured in Marshal McLuhan's all time famous statement that "You cannot, not communicate" (McLuhan, 1964). Even the bible relating to creation, says "in the beginning was the Word" (John 1 verse 1).The information and communications theory is also regarded as 'new' because it shot onto prominence in the mid - 1990s (Chun and Keenan, 2006). Coincidentally, the 1990s witnessed an explosion of the information and communication technologies and the gravitation toward convergence. The converged media forms of the internet, also 'blossomed' during the same period (Chun and Keenan, 2006). Further the concept of 'new media' has in recent years developed traction because of the programmes and jobs perpetuated in its name.

2.4.2 Communications Theory Gains Prominence in Electrical Engineering and Cybernetics

The 1940s are considered a critical moment in terms of the development of information and communications theory because it is during this period when two engineers Claude Shannon and Warren Weaver conceived of the mathematical model to communications (Durham and Kellner, 2007). Most probably the first such recorded theory in the information and communications sector, the Shannon and Weaver model highlighted above is thus considered the 'mother of models' regarding the development of theory in the sector today. For some time, this model offered the standard lenses throughout which communications was considered until alternative traditions were developed (McQuail, 2005; Durham and Kellner, 2007). Albeit with criticisms, to date the model still remains relevant in illuminating issues about the sector (Craig and Muller, 2007). The mathematical or transmission model has practically remained critical in providing the descriptive appreciation of the processes in which information is transmitted between points. It is thus the momentous theory of telecommunications.

The 1940s are also a milestone in terms of the information and communications theory due to developments in electrical engineering and cybernetics (Chun and Keenan, 2006; Craig and Muller, 2007).

The developments in electrical engineering and cybernetics were critical to the evolution of theory in this sector for further two reasons. First is that information and communications gained prominence as a concept which could be used to describe cybernetics and the communication processes of electrical engineering. Second is that information and communications theory became formalised as an area of study in scientific terms during the same period (ibid.).

Quite notably, communications theory integrates seven distinct traditions of thought, all with a shared focus on practical communication (Craig, 1999). Although in reality, communication encompasses hundreds of different theories which seem to approach the field from seemingly unrelated positions, the seven tradition model of Craig offers a perceptive analysis of communications (Craig, 1999). Craig's model gives a complete picture of the field of communications. The seven traditions in the model comprise *rhetoric, semiotics, critical discourse analysis, cybernetics, phenomenological, psychology and the socio-cultural approaches*. Craig and Muller observe that certain elements of what is now called the transmission or source-message-receiver model of communication was already present in the ancient culture of Homeric Greece (Craig and Muller, 2007:1-7). Other ideas about communications as transmission also emerged with Christian speculation regarding the communication of angels and also in the examples of political communication such as propaganda (ibid.).

The engagement with some of the traditions in Craig's model offers some interesting insights. For instance, critical theorists of communications focus at the unmasking of the ideologies and power structures influencing communications in a democracy. One critical thinker of all time is Michel Foucault, famed for a deeper and perceptive illumination of the linkages of ideology, power and communication. It is also within this framework, that the cultural industry and communications are considered as potent tools for social control in the public sphere (Thompson 1997). Popular culture is not tagged as 'propaganda' but as entertainment; people are often exposed to it when most relaxed of mind and tired of body, and its characters offer easy answers to stereotyped personal problems (ibid.). So critical are the above views to issues of content in digital age.

In simple, the notion of public sphere, relates to the imaginary sphere of ideas that shape human conduct in a liberal democratic society. In the conception of Habermas the public sphere concerns how the mediated sphere between the private activities of individuals, in their familial, economic, and social life and their public life. This involved mediation of the contradiction between bourgeois and the generality of the people overcoming private interests and opinions to discover common interests and to reach societal consensus.

The public sphere consisted of organs of information and political debate such as newspapers and journals, as well as institutions of political discussions such as parliaments, political clubs, literary salons, public assemblies, pubs and coffee houses, meeting halls, and other public spaces where socio-political discussions took place (Kellner, 2006).

Today, the public sphere is perceived as a sphere in which critical dialogue about politics and democracy are important. Against the above backdrop, the information and communications sector is viewed as an avenue through which people express views concerning their needs and interests, whilst also influencing political practice[8]. As a result, "the bourgeois public sphere had made it possible to form a realm of public opinion that opposed state power, as well as other powerful interests in society, such as commercial" (Kellner, 2006).

Writing from the communication experiences of Eastern Europe, Downing in the book: *Internationalising Media Theory: Transition, Power, Culture,* illuminates the evolution of communications theory. Quite notably, he observed that compared to the questions of the state, totalitarianism, political and social movements of regime transition and the communication processes accompanying these processes have not received attention in research. It is as if human affairs are conducted on a mute chessboard where communications is not vital (Downing, 1996). This is critical in locating, in both 'time and space', the degree to which the information and communications theory is established, as compared to politics and economics for example (ibid.). A striking feature about media and communication processes is that they were rarely placed at the centre of political analysis (ibid.). In my observations, without communications, politics and economics would not have been what they are, yet even this is not acknowledged in political theory.

2.5   Development of Communications Theory

"Not everything in the garden of communication theory and its development is 'lovely'" (Mowlana, 1997:13 - 14). At least, this is the common view from the liberal perspective. The 'ugly' side of communications theory in the views of Mowlana in concurrence with Downing, relate to the involvement of the military (ibid.). The American government has demonstrated an unparalleled desire to tap into the military potential of the information and communications sector (Downing, 1996; Mowlana, 1997) regarding the execution of the country's military exploits, abroad. In the United States of America (USA), therefore, almost all early studies

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[8] *http://www.gseis.ucla.edu/faculty/kellner/kellner.html*

in information and communications, including those of Claude Shannon and Warren Weaver, (latently or otherwise) were undergirded by military considerations (Mowlana, 1997). Therefore, it is against this backdrop of the USA interest in ascertaining the communication potential in war and in honing Cold War and 'Third World' politico-military strategies that the roots of digitisation can partly be traced (Mowlana, 1997). Even, the world's most paradigm-altering technology of all time, the internet was born out of the USA military experiments. Therefore, for the United States of America, military considerations with the information and communications sector were central to the development of the sector. Today, whether in business, politics or any such human venture, the internet has become such a vital cog, and is at the centre of the so-called 'new media' (Golding, 2008). Intriguingly, military considerations rather than commercial and general communications were critical to the birth of the internet and hence digital media (Mowlana, 1997). However, in the court of public opinion, general communications and commercial interests are the most critical considerations regarding the birth of the internet (ibid.). As a result, this explains why every time the internet is mentioned, its general and commercial contributions loom larger than the military considerations.

In military strategic terms, observations are that whoever has control over the information and communications sector and its networks has the power to control the world. It is perceptively against these linkages between communications theory with military strategic objectives that even during the 'ancient times' Persia's extensive transportation and postal services were indispensable to that country's war with Greece (Mowlana, 1997). It is in the same light, that Britain's control of the undersea cable network, back in the nineteenth century can be considered as a decisive factor of the country's naval hegemony of the world during the First and Second World wars respectively (Mowlana, 1997).

John Downing observes that overwhelmingly, and seemingly also knowledge about communications theory appears to be based upon data from Britain and the United States of America, which have - despite the joke about the dissimilarity of their uses of English - remarkably similar leitmotifs in their cultural, economic and political history that mark them out from most other nations on planet (Downing, 1996:x). Britain and the United States of America have both since 1865, been stable capitalist democracies, deeply involved in global affairs as imperial powers, not invaded by other nations, strongly marked by a diffuse Protestant Christian tradition, and highly affluent by planetary standards (ibid.). The above characteristics of the British and American societies have a bearing on the broadcast systems of the two countries and those that they conquered in different ways across the globe.

Apart from the military considerations, research into early models of communications such as the mathematical model or information model were also meant tap into the potential of communications shaping agreement around the views which the United States of America considered pertinent to her political and commercial interests (Kellner, 2006). Famed for articulating the issues of how regimes deploy ideological state apparatus such as media among others to manufacture consent around certain issues within a nation's citizens, is Antonio Gramsci (1971). As observed above, the information and communications sector could be used as instruments of social control (Thompson, 1997). Observed is that the information and communications sector as a means of popular culture is not tagged as 'propaganda' but as entertainment; people are often exposed to it when most relaxed of mind and tired of body; and its characteristics offer easy answers to stereotyped personal problems (ibid.). It is through the potential of media to influence society towards preferred positions that the information and communications sector in Africa has largely been shaped (Kwaramba, 2000). The information model relates to the transmission of information to a gullible mass. The views about the media being 'all powerful' arose from the works Max Horkhemer, Theodor Ardono and Herbert Marcuse at Frankfurt University, Germany. This group of scholars were heavily influenced by Marxists ideas about the role of media (Kwaramba, 2000). They perceived media as all powerful and regarded the consumers of media messages as passive (ibid.). This led to the impression that monopoly to media access in terms of ownership and functionality, results in political power (ibid.). This style of media management is endemic in Africa where broadcasting is still a monopoly of the state.

Sooner than later, the views of the Frankfurt School court heavy criticisms for over - simplification of issues about the media and its audiences, viewers and readers. The view was that although the media had power over its consumers, the same consumers could still challenge the preferred readings encoded by the sender to come up with a different meaning altogether (Kwaramba, 2000). Further, the theory was criticised for failing to acknowledge the existence of counter ideologies that challenge the ruling ideas (ibid.). The theory creates an impression of media consumers as passive and at the mercy of media owners (ibid.).

As a result of these criticisms to the views of the Frankfurt School, contending opinions have emerged. These have sought to demonstrate the 'minimal effects' of the media in the face of a 'thinking' consumer. The latter views were conceived at Birmingham School in the United Kingdom (UK). Representing the Birmingham School were such scholars as the late Stuart Hall. In its contention, the minimal media effects theory sought to contextualise the impact of communications as dependant on other variables which could lead to the preferred meaning from the media, subjected to a negotiated meaning and sometimes even

oppositional reading. In other words it is not always the case that the media had power over people's lives (Kwaramba, 2000).

In my view despite the influence of the Birmingham ideas concerning the impact of the information and communications sector, the fact remains that the media is powerful especially broadcasting. Partly also this explains why states in Africa have been reluctant to liberalise broadcasting for fear of the tool being appropriated by opponents (Ndlela, 2007). The politics around broadcasting in Africa is, in my view, more than the issue of communication as it is deeply ingrained into the nature of 'democracy' in Africa. The more one delves into it, the more one is exposed to a form of democracy whose values are yet to establish. Despite the wave of democratic change in the 1990s, most of the African countries in my view, remain stuck to the one-party state political thinking of the late 1970s. Most leaders in Africa who had assumed power in the late 1960s began to gravitate toward one-party-state or dictatorship to secure their power against the wave of liberal democracy and in the views of Claude Ake the increasing demand for development and genuine democracy (Ake 2005). This explains why today issues of democracy and development have remained on the top of the agenda despite all the countries on the continent having attained their independence from colonialism in the 1960s. The fear to share the information and communications tools with opponents in Africa reflects on the nature of democracy on the continent (Ake 2005). Democracy and development are at cross roads (ibid.). As long as democracy in Africa is not anchored in national values which connect a country's citizens, opening up broadcasting in Africa will remain problematic for fear of the tool being appropriated by those of diametrically oppositional thoughts (Ndlela, 2007). This approach in African politics is interesting regarding the way the continent's information and communications sector is shaped (ibid.). Although not publicly acknowledged, it appears politicians in Africa are afraid of opponents being afforded the same platforms of communications and this has not augured well for democracy (ibid.).

In my view, although the British-USA story concerning media and communication theory is critical it should not be allowed blot out the different experiences found in other countries concerning communication research. It is from ideas such as these that I venture that the calls for alternative lenses to consider African media landscape have gained currency. Quite notably whilst the British-USA experience presents information and communications theory as a single entity, Downing is of the opinion that communication can be conceptually be divided into the *segmented, fragmented and totalist* (Downing,1996). Segmented theories refer to US-originated mainstream approaches. These approaches regarded media as discrete entities in society. In that way, segmented theories suffered from a frequent failure to integrate their

findings with the activities of society. As a result, the findings from segmented research were not linked to politics and economics or even   behaviour in society. The examples of segmented studies included the gatekeeper analysis of Snider in, 1967; agenda setting of Protess and McCombs in 1991; cultivation theory of Melischek *et. al.* in 1984; uses and gratifications of Rosengrem *et. al.* in 1985 among many others. In this regard, the second form of communication studies as identified by John Downing were the fragmented research (Downing, 1996:78-79). The fragmented research designated authors writing from a great variety of perspectives about the information and communications sector (ibid.). Much of their work long pre-dates the post-modernist wave of celebration of fragmentation, such as Benjamin, Barthes, Bakhtin, Enzesberger, as well as current cultural studies. As a result, their work offers a plethora of insights about the information and communications sector. However what is lacking with the writings of the above theorists is internal cohesion. Downing presents the final group of researchers as the totalists. The totalists relates to the writings of the Marxist approaches, such as Antonio Gramsci, Althusser, James Williams, Stuart Hall, Herbert Schiller, but also non-Marxist systematists such as Habermas, and functionalists such as Parsons, or media system dependency theorists such as DeFleur and Ball-Rokeach, in 1990. Unlike the segmented group, neither the totalist nor the fragmented categories include people whose analysis is restricted to the information and communications sector, but this arguably strengthens their theoretical contributions rather than somehow invalidating them from consideration under the heading of media theory (ibid). In the case of the current study, the idea is to capture the entire perturbation of broadcasting beyond the ambit of narrow concerns linked to the sector such as technicist approaches. There is need to capture the socio-political and economic dimensions of the digital migration programme

The trajectory of the information and communications theory has taken several turns, reflecting the sector as pivotal to the struggle for power in society and also as a platform for general communications (ibid.). The capillary of communications in a variety of settings, whether in the social networks often underlying social movements, or in the very vertices of state power within and between nations, and indeed at all levels, not least including telecommunicated interaction, is also part and parcel of understanding all these situations (ibid.).

2.5.1   The Development Communication theory: The African Context

The trajectory of communications theory from an African perspective offers intriguing insights. Mired in competing ideologies, Nathaniel Manheru observes that issues of theory in postcolonial states such as

Zimbabwe are 'explosive' and 'sensitive' (Manheru, 2015). The transition to digital is no exception. The above background made the selection of theory for the study difficult.

2.6   The Search for the Lenses to Understand DBM

The search for the lenses through which DBM in Zimbabwe could be investigated and understood at least required the appreciation of the trajectory of the information and communications theory. DBM is one of the most disruptive forces of our time characterised by different views. In turn, the different shades of opinions about DBM are also encapsulated within layers of variegated traditions, in terms of scholarship. It is imperative to define theory - at least with an answer relevant to the framework of the study.

2.7   Different Cosmologies, Different Agendas and the Trajectory of the Information and Communications Theory: The African Experience

In research, the major concern about theory is what can be said about the possible causes of the creation of theories; and how they develop (Brugger, 2003). Existing results of analysis may call for new theories which can lead to new understanding about a phenomenon (Brugger, 2003). Sometimes it might also be as a result of the changing phenomenon, for instance, people talk of a changed information and communications as a result of the disruptive forces brought about by the changes in technology and politics. Transitions in life are usually accompanied by the requirement for new insights concerning theory. Therefore, the changes in the information and communications landscape require new lenses in terms of methods and analytical insight (Chun and Keenan, 2006; Du PLooy, 2006). Observed also is that an existing analytical praxis can give rise to new theories (Brugger, 2003). Another issue is that existing theories (regardless of type) can also bring about the development of new theories (Brugger, 2003).

2.7.1   Research Theory: A General View

The metaphilosophical debate in Africa is characterised by the tension in views between the 'particularists or nationalists' on one hand and the 'universalists' on the other. Metaphilosophy is a branch of philosophy that deals with philosophy (Beaney, 2007). It is concerned about "what philosophy is and what it is about." (Beaney, 2007). Furthermore, metaphilosophy is concerned about "how philosophy should be done" (Beaney, 2007). Within western tradition of contemporary philosophy, metaphilosophy is divided into three divisions (Beaney, 2007). These are analytic, continental and pragmatist philosophy (Beaney, 2007). In simple terms, analytic philosophy is concerned about the engagement of matter. The engagement with research propositions in a research falls under analytic philosophy and so are a study's aim and objectives

(Brugger, 2003). Continental philosophy is concerned about issues of quality and rigour in scientific terms (Beaney, 2007). Since pragmatic philosophy is the major focus of the study, it is important to dedicate a little more time on this aspect. Pragmatic philosophy describes practical situations as observed (Brugger, 2003). One of the founding fathers of pragmatism Rorty, states that philosophy should promote cultural, social and political goals (Beaney, 2007). The original or classical pragmatists are the North Americans Charles Sanders Peirce (1893-1914) and John Dewey (1859-1952). George Ritzer considers pragmatism as a 19th century and early 20th century school of philosophy, which provides practical consequences or real effects to be vital components of both meaning and truth about life (Ritzer, 2004). In this regard, something can only be true if it works in life (ibid.). Pragmatism therefore, is not necessarily about grandstanding but about its practical utility. Pragmatism is usually considered not a single philosophy as it is more of a style or way of doing philosophy (ibid.). The worthy of pragmatic ideas' are derived from their operational or practical impact on society. The metaphilosophy of pragmatism unfolds from that which became known as 'the pragmatic maxim'. Charles Sanders Peirce invented the pragmatic maxim as a tool for clarifying ideas. In the views of Beaney, the best known formulation of the maxim runs thus: consider what effects, which might conceivably have practical bearings, we conceive the object of our conception to have. Then, our conception of these effects is the whole of our conception of the object (Beaney quoting Peirce). Pragmatism gave to humanity the far flashing beams of light which enables the dissection of issues (Creswell, 2007:11). This philosophy allows the universe to appear as a place in which human thoughts, choices and aspirations count for something (ibid.). It is essentially an instrument for social progress which can be reduced to a working program of action, a prophecy of the future (ibid.). Having engaged with the issues above, it is now important to shift attention to the discussion of metaphilosophy from an African perspective (ibid.).

2.8   The Metaphilosophical Debate in Africa and its Controversies

The metaphilosophical debate whether in the United States of America, China, India or Zimbabwe, is propelled fundamentally by the same questions. The current concern with the metaphilosophy in Africa, is about 'whether there exists an African philosophy and also what its nature is' (Gyekye, 1987, Tomaselli, 2012). At least two camps have emerged regarding the questions about African wisdom. These are the particularists and universalists. Particularists are sometimes referred to as nationalists. Prominent names among the nationalists are Kwame Gyekye (1987) and Richard Ayoade (2003). Nationalists object to the adoption of capitalism as the basis for African knowledge systems (Coetzee 2003). Nationalists' contention is that "African knowledge systems cannot forge a relationship with capitalism, a system which the

continent fought against during the wars of liberation" (Coetzee 2003). Despite the reservations of nationalists, universalists such as Kwame Antony Appiah (1992) observe nothing wrong with knowledge systems of world forging linkages (Appiah, 1992). They contention is that in the context of a 'networked society' knowledge and the different accompanying cultures and traditions no longer have boundaries any more. Nod Miller and Rod Allen attest to the above that "through this new media society shall be able to construct new sorts of community, linked by commonality of interest and affinity rather than by accidents of location, culture and tradition (my emphasis) (Miller and Allen, 1995:ix).

It is against this drapery of the ideas of the 'new thinking' that Keyan Tomaselli advocates for a cautioned and pragmatic approach to the issues of theory in Africa. Tomaselli (2012) is of the view that there is nothing wrong in a people harnessing ideas from others, if at all such ideas were to benefit them. After all, theories mutate moving from one environment to the other, sometimes to a point of forgetting their origins (Tomaselli, 2012). In addition, epochal movements of people during events such as slavery and colonisation have also seen ideas and practices scattering across the globe. Therefore there is a great deal of cross-fertilisation of views, opinions and practices that makes the 'call for the return to the original' in terms of the quest for an African toolset to analyse issues, a bit more complex if not impossible (see, Berger, 2012; Tomaselli, 2012).

Nevertheless, within this complex milieu, some radical thinkers such as Archie Mafeje (1992), as observed earlier, are calling for the rejection of the current geographies of knowledge for what they term 'alternative frameworks'. Archie Mafeje among others is of the belief that the current ideas are inappropriate to deal with issues in Africa as they are Western in orientation (Mafeje, 1992; Anyissuedanwu, 1985; Dukor, 2005). Complicating matters further, is also the growing lobby for the 'de-Westernisation of theory' (Herman, 2012). In a compendium, which he recently edited (written by emerging African scholars), Herman (2012), observes that underpinning the notion of de-Westernisation is the search for home-grown lenses, or alternative philosophises, which are deemed suitable for the articulation of issues in Africa (see Herman, 2012).

The quest for 'an African theory of communications' is viewed as suggesting a distinctive body of abstract propositions 'uniquely' African in nature (Berger, 2012). This quest implies, rather, that there should be an original, coherent and stand alone system linked to peculiar locality, even if drawing in part (and inevitably) from theories peculiar to other continents (ibid.). Guy Berger (2012) observes further that the quest for such a conceptual toolset arises from the belief, as expressed by Obonyo (2011), that it is difficult "to

universally apply to Africa theories of communication that have been developed within liberal pluralism" (Berger, 2012). This perspective, as noted by Berger, arises out of a (questionable) belief about the coherence of an object called "Africa", based on commonalties within such a locality, and it further assumes that this object is not liberal democratic in context (Berger, 2012).

The views of David Korten, (1995) in the book: *When Multi-National Corporations Rule the World* and those of Robert McChesney and Edward Herman, (1998) in the book: *The Media: the New Missionaries of Global Capital* can thus be perceptive regarding issues of resistance to neo-colonial frameworks. In the same vein, it also appears that disobedience and resistance to the perceived Western frameworks, is embraced in positive light, especially given the 'decoloniality' project of Walter Mignolo and colleagues in which they call for the formerly colonised to engage in "epistemic disobedience" (Mignolo, 2009; 2011; 2012). Within the decoloniality lenses is the notion that delinking from the current geographies of knowledge provides an escape from Western (Greek, and even Latin American) categories of thought (Mignolo, 2009). It is believed that such epistemic disobedience leads to a different place, to a different "beginning" (not in Greece, but in the response to the conquest and colonisation of America and the massive trade of enslaved Africans), to spatial sites of struggles and building rather than to a new temporality within the same space (from Greece, to Rome, to Paris, to London, to Washington DC) (Mignolo, 2009). Against this analytic backcloth, some scholars are becoming accustomed to a situation where everything 'Western' is viewed in the simplistic light of "neo-colonialism" (Manheru, The Herald 10 January 2015).

Outlining and discussing the contestations related to the usage of theory in post colonial states, the current study advocates for a pragmatic approach. Therefore, the study proposes for the adoption of views, opinions and practices (never mind their origins), which have potential to leapfrog Africa from decades of stagnation (MEC report, 2002; Lesame, 2005; Ake 1996).

In my view, the compartmentalisation of knowledge as either Western, Chinese and so on as proposed by radicals appears to defeat the recognition of Africa's contribution to global knowledge, yet the continent prides itself as the mother of civilisations (Chivaura 2015). In the case of this study, instead of viewing knowledge in terms of European, African or Asian this study is categorising the current geographies of knowledge as "global civilisation". Global civilisation, in my view resists appropriation by a continent or a people as it is neither, European, African nor Asian. In the view of this study, global knowledge is a result of the movement of ideas, views and opinions as people of different cultures and traditions interact and influence each other.

2.9   Personal Reflections: A Practical view to Metaphilosophy in Africa

From a practical viewpoint, I would venture that the discussion of the views and opinions in the book: *The Art of War*, by a Chinese army General of ancient times, San Tzu, offers intriguing insights regarding metaphilosophy in general. San Tzu's views have influenced military thoughts of different armies of the world. Whether African, British or American, the views of San Tzu are integral. Not only has San Tzu's wisdom been influential in the shaping of military thoughts across the world, but they have also been critical to business strategy from the Harvard Business School to the business school of some backyard university in some corner of the world. In my view, the ideas contained in the book *The Art of War* appeal to global military wisdom with such an amazing familiarity. What is even intriguing is that the ideas by San Tzu cut across military generations and traditions. In San Tzu's ideas, you seem to have the military knowledge systems of everyone, from Shaka's fighting ideas in Southern Africa, to the blitzkrieg of the Germans in Europe. This, in my view, demonstrates that ideas have no boundaries. Just to think of it, the "fire force" - a fighting method developed by the Rhodesians by employing all arms (from the air force to the ground forces) on a single target - is in my view, comparable to the blitzkrieg developed during the First and Second World Wars. The blitzkrieg was underpinned on the notion of lightning speed when attacking (Habeck, 2003). These same concepts have been reformed into recent wars by America and her allies for instance in Iraq, Afghanistan, Libya and so on. The same strategies have now been rechristened in terms of impact - the "shock and awe" doctrine, in which the element of surprise, speed and concentration of arms as observed from previous strategies remains.

The Holy Bible also is a living example of what I would call 'global philosophy,' where human philosophies across the globe, race, gender and colour seem to converge. The above issues are explained by Vimbai Gukwe Chivaura, in his article in *The Patriot* (12-18 August) based on the views extracted from the book titled "*Principles of unity and oneness in life and politics …lessons from: The book of Going Forth by Day*" in which the author points out that:

> African ancestors saw it long ago that no task or project however noble can ever succeed without men and women whose conduct is upright and pleasing to God and man. So they developed a humane system of moral and spiritual instructions which has informed the now so-called major religions of the world such as Islam and Christianity

Chivaura, The Patriot 12 -18 August

It is against this brief background that the current study objects to the linear and simplistic approach to issues of theory in post colonial states, which advocates for a provincialisation of knowledge to narrow spaces, instead of the wider global space (Newman, 1996). After all there is something global about Zimbabwe's transition to digital broadcasting (Medeisis, 2009).

The idea of a 'purely African toolset' for analysis, fails to recognise the differences among countries in Africa (Bayart, 1993; Nzongola-Ntalaja and Lee M., 1998; Ake C. 2005). Such any idea, presupposes that Africa is homogenous, construed as a sub-Saharan cultural identity or purely geographic one (Berger, 2012). In my view, the different colonial administrations which obtained in the different parts of the continent and also the different forms of resistance they enlisted (ranging from armed war and peaceful protests in other parts) attest to the complexities which typify countries in Africa. Colonialism left behind unique legacies for different Africa (Brown 1998). Therefore, this demonstrates that there "can never be a single African philosophy or wisdom as there are a variety of experiences (local and international) which shape the worldview of the people in different parts of the continent" (Tomaselli, 2012). Therefore, the views of the nationalists are dismissed "as mere sentimentalism and lacking in practice (Appiah, 1992). Appiah warns against scholarship sacrificing the rigours of scientific thinking for simplistic notions of a 'purely African philosophy' saying at best, the idea for an 'African philosophy' is described as arising from the wish by some scholars to be identified with 'grand ideas'… ideas considered big and original (Appiah, 1992). Furthermore, this grand idea for an African philosophy leads to the concern about its feasibility and practicability" (Berger, 2012). Therefore, in their conception, Universalists believe 'philosophy' needs to be subjected to the accepted rigour of a discipline and therefore should be the same in both the Western and African senses (Wiredu, 1980; Hountondji, 1983; Appiah, 1992).

Not to be outdone by the Universalists, nationalists are of the opinion that "it is simply preposterous, irrational, and irritating to deny African philosophy a share in the current geographies of knowledge" (Dukor, 2005). Further, Universalists also believe that whilst colonialism in its formal sense had been dismantled, the colonial state has remained intact and that many of the problems of democracy in Africa are products of the old colonial state whose primary difference is the presence of black faces in leadership positions where previously there were whites (Jackson, 2009)

Not only do the nationalists call for an 'alternative toolset' for researching Africa, they advocate for a complete dismantling of the capitalist system (Frantz Fanon, 1963). In the views of Nathaniel Manheru (a newspaper columnist), alongside nationalists such as Amilcar Cabral, Walter Mignolo and Frantz Fanon;

the agenda for the search for an African philosophy is to rid the 'African mind' of any traces of the 'residual colonial influences,' (Manheru, 2015). Therefore, nationalists believe that colonialism has left a legacy of residual influences which have continued to inform the analytical mindset of scholars on the continent regarding research. Views such as the above have led to debate on 'neo-colonialism' and the re-embodiment of the cultural imperialism thesis, which but until recently had taken a back sit (Manheru, 2015). Some of the prominent scholars of the re-colonisation thesis who have received attention in this study are McChesney and Herman (1998) and Walter Mignolo (2007).

Apart from the fight for positioning between the nationalists and universalists regarding the metaphilosophical debate in Africa, nationalists strongly contend that different cultures have different ways of explaining reality, hence Africans must have a philosophy that is essentially different from other philosophies of the world (Coetzee, 2003). It is against the background of such strongly worded appeals from both the nationalist and universalists regarding the quest for a philosophy, that the metaphilosophical debate in Africa in my view, ceases to be just an ideological 'battlefield,' but one where researchers are easily caught up in 'reckless' and 'arrogant' exchange of views with in my view 'little or no practical wherewithal.' Further, it is against this background that the views of Teer-Tomaselli, for the adoption of lenses that seek benefit to Africa are critical (Teer-Tomaselli, 1999).

Although it is not primarily the objective of this study to delve into the nature of African philosophy, its constitutive ontology, existence and methodology, engaging the controversies concerning these issues help yield a perceptive process and procedure, through which researchers adopt theories and concepts for organising their ideas during research. It is for this reason that the issue of how researchers select theories for research is critical to this study.

2.10   Toward a Pragmatic Approach: The CCMS influence

It appears the nationalists' views regarding the philosophical debate in Africa, is increasingly under siege in a globalised environment (Appiah, 1992). In recent times the dominant view is that theories can never be peculiar to a people, experience, region or community in a world that is increasingly globalised. In the globalised environment, the influences of liberalism cannot be mistaken. Francis Fukuyama offers an incisive illumination of the liberal ideology, to the extent he is regarded an avowed disciple of the liberal doctrine and capitalist way of life. Notable works, in his writings being the book: *The End of History and the Last Man* in which he describes capitalism and liberalism as important in providing the 'resting points for progressive history' (Booth, 2007). In this context, therefore, it is expected that theories (whether in media

or any other field), should be developed within the scope of capitalism (Underhill, 2006). Within this context, capitalism is considered "the best ever idea from history, which to date, is still to find a comparable alternative" (Booth, 2007).

Whilst I acknowledge that the debate about philosophy in Africa is far from over, the study sought for a pragmatic and more conciliatory position regarding both the nationalists and universalists concerning the adoption of a theory by which to understand DBM in Zimbabwe. Given the global and national duality of DBM programme, only the pragmatic and conciliatory frameworks can facilitate the understanding required in the area due to reasons outlined later (Trend, 2007). However, drawing lessons from David Bell and Barbara Kennedy (2007) and Trend, (2007), pragmatism has to be combined with critical thought if views about the programme are to be enriched. Indeed digitisation, in Trend's opinion, requires integrative realms of thought to be understood (Trend, 2007). Quite notably, Hamid Mowlana observes that "the quest is for new ideologies and a new world order one whose agenda for the day, should be - what to table and what to think about and not necessarily about the position one must take about the issues confronting the world" (Mowlana, 1997:19). This view in my opinion is critical in terms of the shifts, regarding theory in the information and communications as observed later

Table 2.1 The Pragmatic Approach as part of the four worldview:

Postpositivisim	Constructivism
- Determination - Reductionism - Empirical observation and Measurement - Theory verification	- Understanding - Multiple participant meanings - Social and historical construction - Theory generation
Transformative	Pragmatism
- Political - Power and justice oriented - Collaborative - Change- oriented	- Consequences of actions - Problem centred - Pluralistic - Real-world practice oriented

Source: Creswell, 2007

An 'ideological Battlefield': Toward the CCMS Tradition

Although an 'ideological battlefield' in which scholars have operated on extreme ends, the metaphilosophical debate has seen the considerations of Keyan Tomaselli, one of the continent's prominent scholars compelling. What is compelling about Tomaselli's insights regarding the issues at hand

is that he takes a giant leap forward about the issue of metaphilosophy in Africa to which he boldly declares that "there can never be a single African Cultural Studies just as there was no one Cultural Studies internationally" (Tomaselli, 2012). In discussing how the current study arrived at the adoption of the theory used, the views of Keyan Tomaselli are thus critical. From the troubled regions of Somalia, to the turmoil economic fissures of the Greek economy, people want wisdom with practical wherewithal to engage with their daily puzzles.

According to Sethunya Tshepho Mosime, the 1990s are in the views of Keyan Tomaselli, a critical phase in African scholarship as scholars began to reflexively interrogate the nature of metaphilosophy in Africa (Mosime, 2007:57). Keyan Tomaselli observes that "theories and paradigms travel, and as they migrate they mutate and change, reconstitute initial emphases, and even forget their origins" (Tomaselli, 2012). Tomaselli quoting Zhuwarara *et. al.* (1997) says the way that the CCMS's influence travelled 'to' and spread 'within' Southern Africa is little different from its trans-Atlantic mutations, trajectories and emphasis it assumed in Australasia, Scandinavia and Asia (Tomaselli, 2012). When such theories do 'arrive,' they are often: 1) unproblematically applied in unreconstituted forms to different conditions at their destinations; 2) appropriated by politicians and cultural commissars for party-political ends; 3) problematised and indigenised to embrace local frames of reference; and 4) tamed and relocated into reader-response relations (Tomaselli, 2012). On the agenda were questions about "whether an African [C]ultural [S]tudy existed, and that if it did, was it a unified field of study?" (ibid.).

In my view the above issues have much deeper roots in the works of Amilcar Cabral, Kwame Nkrumah and Frantz Fanon, all whose works are located in the 1960s. Illuminating expose on these issues can also be drawn from the works of Kwesi Wiredu, as in 'Philosophy and Cultures;' Pauline Hountondji in 'African philosophy: Myth or reality; Kwame Appiah in 'My Father's House;' Nilene in 'African Pride' and Yosef Ben-Jochannan in 'Africa: Mother of Western Civilisation' among others. The historical nature of this chapter explains the anachronistic referencing of this study. Sometimes in scholarship, it is essential to delve into 'historical narratology' as informally argued by Ruth Teer-Tomaselli, in order to map the deeper meaning of a phenomenon. One cannot achieve the understanding of the digital world, before understanding analogue systems.

Although Keyan Tomasselli subscribes to the view that "every culture, each age (in context) supplies the raw materials of knowledge used and applied by the next generation to advance the content, framework and goal of knowledge in terms of philosophy, he observes a critical character of theory, that they changed

and reconstituted initial emphasis to suit contexts (Mosime, 2007). In this regard, he observes that theories literally travel from one environment to the other and as they finally arrive they forget their origins (my emphasis) (Tomaselli, 2012).

Without prejudging the debate on alternative lenses regarding philosophy in African, the most practical way around this issue, in my view, would be for Africa to celebrate her contributions to global knowledge through embracing other knowledge systems of the world to which Africa contributed through various platforms. Besides "Africa is considered the mother of civilisations" as observed during interviews. Second, by disassociating, herself from the existing geographies of knowledge Africa would be negating her contribution to world knowledge all in the hope of achieving a 'distinctly' African toolset in terms of philosophy. In my view, civilisations have voluntarily or involuntarily influenced each other as a result of the interaction of people through various platforms such as slavery, colonisation and emigration (forced or unforced). In my view, Africa stands to benefit from harnessing the repertoire of ideas and knowledge to leapfrog herself, to relatively better levels of development rather than reject ideas on the basis of source and perceived nature.

Although noble, the idea of a 'purely African philosophy' has the effect of negating Africa's contribution to global knowledge as stated earlier. The fixation with new theory projects Africa as ahistorical as it cannot be linked to current knowledge systems. In my view, the more African scholarship tries to drift clear of the so-called Western philosophy, the more the continent alienates itself from its contribution to global civilisation.

Pragmatism, in terms of research theory, entails a practical to issues. In my view, digital migration is framed within the precincts of capitalism, which in the absence of a comparably influential ideological framework to challenge it has remained dominant in politics and the global economy. Therefore, it is one thing to throw away the bath water together with the child than to take a moment and reflect on how Africa can still benefit under the current capitalist system. After all, most humans exhibit a capitalist urge. With or without the capitalist way of life, Africa must survive.

The colonial experience in Africa could be the reason for the anti-western discourses of the 1970s, whose influence has spilled into current debates regarding philosophy albeit with limited influence (Appiah, 1989). In my view the colonial history in Africa and other parts of the developing world set the countries apart from

the rest of the world. The experience with colonialism has shaped the worldview regarding the way Africans respond to values considered of Western in origin (Manheru, 2015).

Cultural Imperialism

Cultural imperialism is a product of western thinking. Interestingly, the theory's usefulness was felt in the formerly colonised countries where the theory was a potent tool toward criticising imperialism and its nefarious activities. In this regard, the theory of cultural imperialism is one of the key theories through which African issues could be understood. However, times have changed It is within this framework of critical thought that the New World Information Communication Order (NWICO) debate found impetus in the 1970s onwards. Far from being resolved, the concerns about philosophy in the media and communication sector in Africa still animate debate among scholars across the world. If anything, the arrival of digital media has further complicated the debate on philosophy in Africa (Obonyo, 2011). To date, debates on media theory are a little more complex and in my view, have assumed a 'somewhat intolerant' dimension, in which radical thinkers object to the use of existing knowledge forms as they are considered Western in orientation and therefore incapable of articulating fully the challenges facing Africa (Mafeje, 1992).

Information Society and the Developments in the Information and Communications Sector

In the views of Rick Malleus, the focus in terms of theory regarding the information and communications sector has been shaped by the anti-Western rhetoric as cultivated through the Sean MacBride report which culminated into the New World Information and Communications Order (NWICO) (Malleus, 2001:63-69). Briefly, the encounters of the NWICO debate saw small countries such as Zimbabwe under the aegis of the Non - Aligned Movement successfully lobbying for the reorganisation of the information order (Fourie, 2007). This resulted in the New World Information and Communications Order (NWICO). Pieter J. Fourie observes the discussions about NWICO had been spearheaded under the framework of the United Nations Educational, Scientific and Cultural Organisation (UNESCO) (Fourie, 2007:421). Fourie further observes the celebration by the small countries was however short-lived, as the United States of America and the UK withdrew from UNESCO (Fourie, 2007). Being the financial muscle for UNESCO, the withdrawal of the United States of America and Britain crippled the operations of UNESCO (ibid.). The financial sanctions on UNESCO by the world's two most powerful nations as highlighted above forced UNESCO to refocus its attention to less sensitive issues such as training and education (Fourie, 2007:427). This remains the agenda for UNESCO in its new focus (Fourie, 2007:427 - 428). The NWICO debates were more of an

ideological battleground between the United States of America on one hand and the former Union of Soviet Socialist Republic (ibid.). The United States of America felt that UNESCO, with Soviet and 'Third World backing,' was trying to wrest control of the flow of information (Fourie, 2007). The major critic to this proposal was that supporters of the idea wanted to upstage one kind of a deformity (that of Western dominance and bias) with another based on political bureaucracies (state control) ibid. The focus in the information and communications has since shifted from the concerns with the flow of information between the northern hemisphere and the southern hemisphere to the 'innocuous' present agenda on trade and open markets (Fourie, 2007). The pragmatic approach to the study sought such wisdom, such as could be of benefit to small African countries as Zimbabwe to overcome some of their weaknesses in the transformation of their information and communications sectors (Mowlana, 1997:14). Explained, the language and ideology of DBM has had a leaning toward the neoliberal agenda from which the programme, as explained in chapter 3, finds roots. There is therefore, consensus among researchers in the information and communications sector, that the *information society* theory of Manuel Castells, offer relevant insights regarding current developments in the information and communications sector. The key defining characteristic of the information society theory are shaped around the prevalence of information and communications technology.

Inductive Reasoning and the Adoption of the Information Society Theory for the Study

The *information society theory* can be defined as concerned about three issues namely new media and society, the nature and impact of information society and the new media and communication policy (Fourie, 2007:252). Generally, the information society is considered a networked society or better still, a virtual community where existence is considered in terms of virtually. Through these new forms of medium, … there shall be new sorts of community, linked by commonality of interests and affinity rather than by accidents of location (Miller and Allen, 1994). Furthermore, as spectrum capacity becomes virtually infinite, television transmission merges imperceptibly with world-wide network systems, and the distinctions between broadcasting, publishing, common-career operations and point-to-point communication slowly disappears (ibid.). The concepts of 'globalisation' and 'glocalisation' are critical to the understanding of the networked society as observed by George Ritzer. Whilst by any standards globalisation is a familiar concept that of glocalisation is comparatively new (Ritzer, 2004; Hamm and Smandych, 2005). The idea is to discuss how these concepts influence processes in Africa concerning DBM in the digital age. The reality is that globalisation is inexorable and irreversible: as a result, *the information society* is strengthening each day.

In order to avoid chaos in the information and communication industry of the magnitude that occurred when the Wall Street plunged into crisis, negatively affecting the economies of many countries, or of planes and trains running into each other, nations of the world have to co-operate with regards to the use of frequencies that are used to communicate (ITU, 2006). These objectives are achieved through the co-operation of nations of the world through the facilitation of ITU to come up with approved national and regional frequency plans (ITU, 2006). The National Frequency Allocation Plan indicates the extent of frequency resources that each country may require for various purposes at any given time (The Herald, 2 July, 2014). According to Postal and Telecommunications Regulatory Authority of Zimbabwe (POTRAZ), the National Frequency Plan provides guidance on how spectrum is used at national level in line with ITU guidelines (POTRAZ, 2014). This is important because the usage of radio frequency spectrum is regulated in accordance with provisions of the Postal and Telecommunications Act of a country together with its associated Statutory Instruments (ITU 2006). Within this context, the discourse of cultural imperialism has been reduced to academic polemics without practical anchorage.

Although seeing the invisible and predicting the future, to borrow from John Quiggin, could be such a daunting task, unless one possesses prophetic powers, or is a micromancer, ball-gazer or fortune-teller, academics who command a mastery of their field are expected to possess the same feat at least as a measure of wisdom earned out of the enduring years of meticulous reading (Quiggin 2007). The trajectory of media theory and its implications for the future concerning the broadcasting sector is the responsibility of this study. In my view, this involves getting as close as is possible to the research problem. It also involves an appreciation of the history of media theory at the global level. Later there is need to analyse how the views at the global level have found accommodation in the African context or how the African environment has influenced the epistemology of theory at the global level.

'Glocalisation: A Concept for the Next Generation Media

Glocalisation means the practice of conducting business according to both global and local considerations (Ritzer, 2004). After realising that globalisation is inexorable, policy makers in the communication and information sector in Africa have opted to come up with policies that emphasise the promotion of local content (Chirume, 2005). In Zimbabwe, this policy which stipulates that at least 75 percent of both radio and television programming be made up of local content, has created industries in both the programming and film industries (Chirume, 2005). Today, Zimbabwe has established a film school to develop skills in the

sector. Therefore, instead of mourning about the impact of cultural imperialism African countries can also engage favourable policies for the production of content.

Cultural Imperialism: A Brief Analysis

As highlighted by John Tomlinson, cultural imperialism is a generic concept that refers to a range of broadly similar phenomena (Tomlinson, 2005). Therefore, it is unlikely that any single definition could grasp every sense in which the term is used (Mattelart, 1979). From an African perspective, cultural imperialism has come to be associated with the way countries from the powerful North (including the USA) use their political and economic power to exalt and spread the values and habits of a foreign culture at the expense of a native culture (Tomlinson, 2005).

However, what is interesting in modern society is the blurring of the distinction between the so-called foreign and native culture as societies become more integrated. Tomlinson observes that the anti-cultural imperialism theorists assert that imperialism no longer exists (Tomlinson, 2005). This argument is based on the emergence of a new global economy that is dependent on the interstate system (Castells, 2004). This new global community is busily constructing alternative linkages and networks that provide space for new cultural environments (Webster, 2004). Debates such as these have prompted the current researcher to think seriously about engendering and carving a new niche within the whole labyrinth of ideas on media and cultural imperialism in the context of the emerging global media.

Electro-Magnetic Spectrum and the Cultural Imperialism Thesis

Theorising broadcasting in a globalised digital environment is increasingly difficult (Gripsrud 2010). The explosive speed at which technology is changing (rendering everything bought out-dated), combined with the underlining strengthening of global capitalism, has thrown scholarship in this sector into disarray (Valdivia, 2006). Even the grand theories of cultural imperialism, which until recently, animated debates in this area, now appear inadequate to provide the kind of scope necessary for the understanding of issues in the broadcasting sector (Downing 1996, Valdivia 2006). Whilst, indeed cultural imperialism remains the undoubted instrument for creating awareness about capitalism to date, its weaknesses in the modern age has been its failure to tackle the dynamics of broadcasting in an increasingly changing global environment. For instance, whilst cultural imperialism has been critical in creating awareness about how the privileged North has continued to dominate the South in terms of the flow of cultural products, its limitation has been

the lack of strategies to deal with the needs of a rapidly changing media landscape (Boyd-Barrett and Newbold, 1996).

Nowhere else, has the most severe jolts of the global changes been felt than in the broadcasting sector (Gripsrud, 2010). The appearance of 'new media' and 'new dilemmas' that theory has not yet been able to incorporate within existing frameworks of thinking about communication and society has added to the current confusion (Valdivia 2006). Furthermore, McQuail (2005) points out that theoretical paradigms in the area of broadcasting are fractured and disconnected as a result of competition between new and old intellectual traditions, encapsulated by the modernist-postmodernist divide.

It is against this background that broadcasting digital migration in the global environment is currently in search of a theory (Valdivia 2006). For the purposes of this study and also to mark a departure with cultural imperialism, the study adopts the information paradigm as the lens through which the concerns of the study will be explored (Castells, 2004). At least for now, Garnham (2004) says the *information society* theory is the most suitable lens through which the current epochal transformations in media in the global environment can be accounted for. Combined with certain aspects of globalisation, the information society paradigm in the views of Pieter Fourie, (2007), is futuristic in its approach.

The Information Society Theory: A Definitional Approach

In other words, it tries to predict the trajectory of future trends in media, based on the current patterns of the proliferation of information and communication technology and the growing influence of the liberal economy. The theory's strength is founded in its capacity to offer an understanding of the new media and the information society, describing the nature and impact of the information society and the new media and communication policy (Fourie, 2007). Globalisation is critical to this study in that it provides the framework within which the intersections between the national and global policy initiatives can be discussed (El-Ojeili and Hayden, 2006; Duncan, 2007; Teer-Tomaselli, 2009).

Charting a New Direction: The Information Society

Theoretical perspectives on media and society are diverse in several respects, emphasizing different causes and types of change and pointing to different paths into the future (McQuail, 2005). They represent alternative philosophical positions and opposed methodological preferences (McQuail, 2005). Newman

perceptively puts it by stating that knowledge represents and permeates the character of its epoch and the dominant positions of the era (Newman, 1996).

Practically, it is the view of the researcher that the 'ranting and ravings' by scholars like Robert McChesney and Thandika Mukandawire about globalisation as a smokescreen of neo-colonialism may not be helpful for the development of the continent if not accompanied by credible options which small nations like Zimbabwe can follow for their survival. In my view, the real agenda for African states should be the search for views in the market place of ideas which impact on the survival of small nations like Zimbabwe, alongside big powers in the global environment (Gaghardi, 2013). The broadcasting sectors in Africa have to contend with:

> Negotiating the imperatives of the market, of local content technology and democracy in a context of an infantile independent local productions industry… this often implies engaging the slow and painstaking and problem ridden process of encouraging a local film and television production industry. In the information age nothing escapes the global function of capital

Mosime, quoting Keyan Tomaselli, 2007:187

The above are some of the inescapable realities of the digital information and communications environment.

There is need for a theory which can handle issues about broadcasting in a changing environment (McQuail, 2005). More observed, "Nowhere else have the most severe jolts of the global changes been felt than broadcasting" (Gripsrud, 2010). As a result of the shortcomings of the cultural imperialism thesis highlighted above, this study has adopted the information paradigm of Castells as the lenses through which the transition to digital can be investigated (Castells, 2004).

At least for now, Nicholas Garnham says the *information Society* theory offers the most suitable lens through which the current epochal transformations in media in the global environment can be examined (Garnham, 2004; Du PLooy, 2006). The theory finds traction in the capacity to offer an understanding of the new media and the information society, describing the nature and impact of the information society and the new media and communication policy (Du PLooy, 2006; Fourie 2007). Globalisation is a critical concept to this study in that it provides the framework within which the intersections between the national and global policy initiatives in the transition to digital broadcasting in the digital age can be discussed (El-Ojeili and Hayden, 2006; Duncan, 2007; Teer-Tomaselli 2009). However, despite the noteworthy contribution of

Castells theory regarding the emergency of modern societies, it is important to observe that the theory has been criticised in some quarters as essentially a marketing tool used by the developed and industrialised countries for promoting a capitalist worldview. This issue was observed during interviews.

A critical view about this chapter is that there seems to be 'fear of the influences from the western based knowledge systems'. Such fear (real or imagined) appears to dominate the African responses, regarding issues of theory on the continent. As observed, the relations between the West and Africa have been shaped within the context of 'love and hate' and the depth and levels of such feelings can sometimes, be strong. However, the real concern with the new global information and communications environment regarding the new media landscape is adopting policy regimes that adapt change (Cuilenburg and McQuail, 2005; Raboy, 2003; Braman, 2006). This view is critical for countries like Zimbabwe that have been reluctant to liberalise media (Ndela, 2009). Quite notably, in the context of liberalisation and privatisation, which in the view of Teer-Tomaselli (2009) are the foundational basis of digitisation, the dilemmas that confront Africa are about negotiating space within the purview of global regimens, while also ensuring policy systems that adapt to the new media landscape. In this regard, one is concerned about how African countries can benefit from the emerging information society (Teer-Tomaselli, 2012). Referring to Botswana (Stork *et. al.*,) and Ghana (Olwal *et. al.*,) respectively, analysts have suggested that at the initial stages of the implementation of the migration programme, countries should be concerned about envisioning the entire programme to avert challenges and limit the risk that comes with new programmes (Stork *et. al..* 2006; Olwal *et. al.*, 2013). These observations seem pertinent to the Zimbabwean situation. This view is critical, especially as it identifies the parameters of focus regarding the current transition in the broadcasting sector.

Ibagere's view on 'spectrum management' (an entirely new area in African media scholarship), is that the transition from analogue to digital is a game changer in the politics of broadcasting in Africa (Ibagere, 2010). Ibagere's analysis, gives depth and new understanding on the issues of broadcasting in the global age (Ibagere, 2010). In this light, the character of broadcasting policy, which has always been viewed as domiciled within the nation-state, is now being assigned a new global perspective, not only in terms of functionality, but also in terms of the expected international policy and regulatory regimens *(ITU, ICT toolkit 2006).* In my view, the real agenda for African states should be the search for views in the market place of ideas which impact on the survival of small nations like Zimbabwe, alongside big powers in the global environment (see Gaghardi, 2013).

Regarding developments in broadcasting, there is need for a theory which can handle issues in the sector given the current changes (McQuail, 2005). Nowhere else have the most severe jolts of the global changes been felt than in the broadcasting sector (Gripsrud, 2010). It is against this background that broadcasting digital migration in the global environment is currently in search of a theory (McQuail, 2005). As a result of the shortcomings of the cultural imperialism thesis highlighted above, this study has adopted the information paradigm of Castells as the lenses through which the transition to digital can be investigated (Castells, 2004). At least for now, Garnham says the Information Society Theory offers the most suitable lens through which the current epochal transformations in media in the global environment can be examined (Garnham, 2004; Du PLooy, 2006).

Combined with certain aspects of globalisation, the information society paradigm, in the views of Fourie, is futuristic in its approach (Fourie, 2007). In other words, it tries to predict the trajectory of the media, especially in broadcasting where changes are occurring as a result of the proliferation of information and communication technology and the growing influence of the liberal economy (Chiumbu and Mazango, 2000). The theory finds its strength in the capacity to offer an understanding of the new media and the information society, describing the nature and impact of the information society and the new media and communication policy (Du PLooy, 2006; Fourie 2007). Globalisation is a critical concept to this study in that it provides the framework within which the intersections between the national and global policy initiatives in the transition to digital broadcasting in the digital age can be discussed (El-Ojeili and Hayden, 2006; Duncan, 2007; Teer-Tomaselli 2009).

2.11   Summary

The present chapter was about the study's analytical framework. The analytical function of a theory in research relates to the 'meaning' and 'understanding' of an issue whilst its methodological function is linked to the process of data collection. Observed in the chapter was that theories illuminate the meaning and understanding of life and the complex world in which people.

2.12   Conclusion

This chapter discussed issues about theory as they relate to the analytical function. Considered also were the peculiar issues about the metaphilosophical debate in Africa and how these relate to DBM. Chapter 3 also pivoted on some of the philosophical positions behind digital broadcasting migration.

CHAPTER 3

PHILOSOPHICAL APPROACH TO DIGITAL BROADCASTING MIGRATION

3.0   Setting the Stage

In the views of Hyunsun Yoon the Netherlands is the first country in the world to migrate to digital broadcasting in the year 2006 (Yoon 2013:1). Quite notably, other countries such as the United States of America, Britain and Japan among others were at different stages of the implementation of the digital programme. Coincidentally, the year 2006, is the same year in which world leaders ratified the United Nations conventions, on digital broadcasting migration (DBM) in the Geneva, in Switzerland. About hundred and ninety three countries ratified the protocols on digital migration (ITU report, 2011). The ratification of the protocols on digital broadcasting migration compelled states to move to digital platforms. This meant that analogue broadcasting would now be phased out. In the case of Africa, Meredith Beal identifies Mauritius as the first country to venture into digital broadcasting (Beal, 2013:1). Unfortunately, for the proverbial 'early bird,' Mauritius is also the only country today in the Southern African Development Community (SADC), sitting with the now obsolete Digital Broadcasting Video Terrestrial 1 technologies (DBVT 1), whilst the rest of the countries in the region, have migrated to the higher DBVT 2 technology. The Mauritian situation could be a clear case of the dumping of old equipment by developed nations who were now offloading some of the equipment which they had replaced during their digitisation. The Mauritian switchover occurred six years, after the Netherlands in Europe.

3.1   Introduction

The previous chapter explained the lenses through which the study in terms of theory could be understood. The present chapter illuminates the genealogy of digital broadcasting migration (DBM). The chapter examines some of the imperatives of the transition to digital. Mapping the physical and philosophical boundaries of the study, chapter 3 most importantly, presents the scope and rationale of the study. To be included also in the current chapter is the researcher's biography as a way of explaining my personal ontological preferences for the consideration of the issues of the study.

Revisiting the Theoretical issues organising the Study

In order for the study to remain focused, there is need to revisit the issues upon which the study revolved. These (as identified in chapter 1) are *technology, funding, regulation, ideology* and *content.* Therefore, the evaluation of literature for the study emphasised these issues.

3.2   The Scope and Rationale of Study

A rationale of the study is critical in outlining the physical and theoretical boundaries of the research. Otherwise, without a rationale of study indicating the breadth and scope of the research, the study would have been difficult. Therefore, to a certain extent, the rationale of the study in this research was critical in describing what the study was about and also what it was not. Although, it appears somewhat less significant, describing what a study is not may allay the doubts and confusion relating to the boundaries of a study. These boundaries may be both theoretical and physical.

In 2007, Martin Cave observed that, it had been almost a decade since David Levy had published what in his opinion, could be considered probably the first comprehensive treatment of digital broadcasting (Cave, 2007). This observation in the case of the study suggests the existence of a gap about digital broadcasting migration. Therefore, the current study sprung from the desire to plug out the lacuna in knowledge regarding DBM through the case of Zimbabwe.

The study is about DBM and does not therefore focus narrowly on digital terrestrial television (DTT) as has become the tradition with most studies in the area (Galperin, 2004). Although dealt with in chapter 4, the 'fixation' with terrestrial television at the expense of 'cable' and 'satellite' technologies (within the discourses of DBM) has in the view of Jerome Adda and Marco Ottaviani created an illusion that DBM is about DTT only (Adda and Ottaviani, 2005:167). The net effect of such illusionary analysis has been the obliteration of the discussions of other delivery platforms such as cable and satellite. Even the much hyped broadband Digital Subscriber Line (DSL) in the case of Europe and a few other countries from other continents has been ignored. The digital subscriber line delivery platform, in the view of Adda and Ottaviani, "allows for high bandwidth data transmission on a conventional residential telephone line" (Adda and Ottaviani, 2005:167). In the case of Zimbabwe, the emphasis on DTT in DBM studies is explained during interviews as offering intriguing ironies: it is however intriguing that

> In my view the African broadcasting space became digital, a long time ago through satellite. This fact is conveniently unacknowledged. Historically, digitisation is not a new phenomenon as those who are advocating for digital terrestrial television want the world to believe. No! It is this fixation with DTT, which has created an impenetrable misleading lie that to be digital, is to go terrestrial yet there are other alternatives which may offer cheaper modes of broadcasting than terrestrial. …options, even perhaps, with better technical advantages than terrestrial.

Views such as the above indicate a gap in terms of digital broadcasting migration. Although, the study does not pretend to cover the entire fulcrum of issues regarding DBM, sentiments such as those above compelled me to seek for a holistic debate around DBM as could be possibly mustered. The linkages between DBM and other sectors in the information and communications sector were highlighted in a manner that provoked future debates. Therefore, to borrow from Hernan Galperin the focus in terms of the changes in broadcasting industry is about digital broadcasting migration and not digital terrestrial television (Galperin, 2004). It documents developments in DBM in Zimbabwe. For reasons outlined earlier, the transition to digital is heralded as an important innovation in the information and communication industry, globally (Galperin, 2004). In this regard, the transition to digital is part of a larger process of change in the way information is produced, aggregated, and distributed in contemporary societies (Galperin, 2004:4). Further Herman Galperin points out that:

> The changes represent fundamental innovations in the economics of communications industry that has created new competitive advantages, eroded others, altered the balance of power between different market actors. It also involves new ways of information infrastructure for economic growth, for cultural development, and for political participation.

Hernan Galperin, 2004:4

Indeed, although the focus on DTT in previous studies has illuminated some of the issues on DBM, the focus on digital terrestrial television, has somewhat 'narrowed' the debates in the area, to only a portion of DBM (Gralla, 2007; Goleniewski, 2007). In the practical sense, Paul Golding observes that (although the current digital framework focuses on television) radio, the mobile phone, telecommunications and the internet are among some of the silent sectors which have benefited from digital broadcasting migration (Golding, 2008). In fact as observed during the interviews to the study, radio is considered a natural beneficiary of digital terrestrial television. Most importantly the interviewee observes that the benefit to radio occurs without additional sunk costs.

As gleaned from literature, the rollout of DBM has proceeded apace with different strategies and at different tempos in different countries and regions. However, analytical literature to capture these developments has remained surprisingly sparse (Cave and Nakamura, 2006). The interest in broadcast networking has perhaps been overshadowed by the much higher level of general interest in more directly interactive networking modalities such as internet or mobile phone (ibid.). In the case of this study, television was discussed as part of an unfolding larger debate in the discourses of DBM, and the emerging information society (Seel and Grant, 1997; Cave and Nakamura, 2006). Therefore, in the views of Paul Golding, the

entire fulcrum of the discussions about digital broadcasting include among others, radio, mobile phone, telecommunication and the internet (Golding, 2008:13). Francoise Rancy and associates alongside Arturas Medeisis observe that the interesting issue about DBM is the linkages with spectrum management (Medeisis, 2009; Lozano *et. al.*, 2013). Although issues of electromagnetic spectrum have been with society since time immemorial, spectrum management is just emerging as a field of study with its own epistemological approach *(ITU ICT toolkit report, 2013).* In Africa, there is still need to appreciate the entire spectrum of issues involved in the management of spectrum. Therefore, it is within this perspective that Arturas Medeisis has observed that investigating the emerging issues of electromagnetic spectrum management, and how these issues have influenced DBM and vice-versa, has become critical for research in the information and communications sector in the digital age (Medeisis, 2009).

As earlier indicated, issues of DTT or simply digital television (DT), have received overwhelming attention in research - *Galperin, 2004, New Television, Old Politics; Brown and Picard, 2005, Digital Terrestrial Television in Europe; Adda and Ottaviani, 2005, Digital TV; Candel, 2007, The Migration towards DTT: challenges for public policy; CQpress, 2009, Transition to digital TV; Rancy et. al., 2011, Transition to Digital TV and Digital Dividend; Yoon H. 2013, Lessons from Digital Switchover in South Korea).* In my view, DTT has received overwhelming research attention.

However, rather than be trapped in what Rod Allen termed the 'magical fascination' with television, this study insisted on a wider perspective to DBM as could possibly mustered. This involved brief explanations of the linkages of broadcasting with telecommunications, mobile, internet and radio (Cave and Nakamura, 2006). The above approach signalled the study's departure from familiar approaches in the past. The idea was to capture the labyrinth of DBM entirely. As observed by Glenn Bowen (2005), a broader approach has its weaknesses in that it may lose depth due to lack of focus. In order to remedy this, I adopted the case study approach for the research. It is hoped that this broader approach to DBM, will give the researcher the opportunity for a picture of the issues involved in Zimbabwe's digital migration as could possibly approximate the reality about the programme.

Broadcasting and its Features

According to a report of the Broadcasting Authority Zimbabwe (BAZ), the most basic definition of broadcasting is that it relates to a radio - communication service in which the transmissions are intended for direct reception by the general public *(BAZ report, 2003).* The most acclaimed definition of the concept is

that it is an industry and practice integral to the promotion of expression and access to information (ITU report, 2006). A broadcasting service may include sound transmissions, television transmissions or other types of transmissions (Seel and Grant, 1997). A broadcasting service can be provided through cable, phone and internet among emerging delivery methods (Golding, 2008).

A distinctive feature of radio and television has been their high degree of regulation, control or licensing by public authority - initially out of technical necessity, later from a mixture of democratic choice, state self-interest, economic convenience and sheer institutional custom as observed by James Williams (1976). A second and related feature of both radio and television media has been their centre-periphery pattern of distribution and the association of national television with political life and the power centres of society, as they became established for both popular and political reasons (Seel and Grant, 1997). Despite the closeness to power, radio and television have hardly anywhere acquired, as of right, the same freedom that the press enjoys, to express views and act with political independence (Miller and Allen, 1995).

3.3   The Imperatives of DBM: A Philosophical Approach

The imperatives to digital broadcasting migration are critical toward the understanding of the programme. Hernan Galperin, a Professor at Annenberg School for communication, University of California, observes that "the transition to digital television is the outcome of a long process of both technological innovation and industrial restructuring which had began in the mid - 1960s, when broadcasters were experimenting with improving the picture and sound quality" Galperin, 2004:21). Furthermore, Galperin observes that the roots of this phenomenon could be traced to the political and economic dynamics of the 1970s in the United States of America (USA) and Western Europe (2004:21). From an economic viewpoint, the ravaging effects of the *Second World War* and the plunge of oil prices after the war negatively impacted the electronic industries of America and Western Europe thus catapulted the transition to the forefront of the communications policy agenda of these countries (ibid.). The 'knock' on the electronic industries of these countries, had adversely affected broadcasting.

As a result, a strategy to revive the sector would be required, something akin to the Marshal Plan soon after the First World War. The Marshal plan was a plan put in place by the United States of America and European countries to help salvage the war impoverished economies of Europe. The plan to shore the electronic industries of these countries would not necessarily be as grand in scale as the strategies leading to the creation of the Bretton Woods institutions of the World Bank (WB) and the Infrastructure and

Mobilisation Fund (IMF). These institutions were put in place soon after the war to mobilise resources to salvage the economies of Europe.

The desire for a credible plan to rejuvenate the electronic industries and thus the broadcasting sectors of the United States of America and Western European countries was further precipitated by the potential for growth that the electronic industry in the emerging markets of Japan, India and China during the same period had shown (Galperin, 2004). Indeed, whilst the picture of the electronic industry was bad in the USA and Western European countries during the period, in Japan, India and China the industry was booming. These nations had overnight become giants based on investments in information and communications (Yoon, 2013:3). In a monograph discussing the transparency revolution – sensory communication, computing – the conclusion is that effective control of space by one state would lead to planet-wide hegemony (Deudney, 1983; Mowlana, 1997). It is from views such as the above that Hamid Mowlana observes that "the United States' efforts in the information and communications sector has shifted towards the militarisation of yet another natural feature of the planet lying beyond the effective sovereignty of the nation state – the electromagnetic spectrum (Mowlana, 1997:13). In the same context, the digital revolution also traces its roots to the neoliberal drive of Margaret Thatcher and Ronald Regan in which the two leaders emphasised the opening up of economies across the world (Foroohar, 2005). Therefore, one can thus conclude that the digital revolution in the information and communications sector drew its political and economic precincts from the liberal ideology. The 'free market' ideologically hinges on the opening up of a country's market both in terms of politics and economics (Smith, 2006). Today, billions if not trillions of Set Top Boxes (STBs), would be required across the world. The demand for STBs is even greater in small African countries such as Zimbabwe, where most of the television sets in use are old and are thus not readily equipped with digital components as is the case with latest televisions. As a result, Jane Duncan notes that an external convertor, which is a small independent gadget, known as a Set Top Box would be required for the old television sets to work after the switch-over (Duncan, 2012). It is in this regard that digital broadcasting is often described as a tool in search of a market and indeed a market far exceeding the supply for digital products worldwide has been created at least for the foreseeable future (Cuilenburg, 2003; Hamel, 2009). In my view herein lay the opportunity for Africa to adapt change in the views of Marc Raboy, (2003). It is in this context that industries to produce some of the digital components such as STBs through strategic partnerships with companies from the developed countries could be set up in Africa as observed during interviews. But the question is: Will Africa seize the opportunity to provide some of the implements required for the digital programme through strategic partnerships? It is against this view that

the transition to digital, later to assume an international outlook, would in the views of Herman Galperin, help the electronic companies in America and Western Europe with a guaranteed market (Galperin, 2004:21). It is therefore, not by coincidence that most of the countries in Region 1, to which African countries belong, have adopted the European standards for digital technology. This can be perceived as part of this grand planning by the industrialised nations of the north (ibid.).

Also to be observed is that in digitisation, lay another potential to fend off competition from Japanese and other Asian electronic markets (ibid.). Therefore, the most common and most acclaimed reason for the switch over in literature is the issue of dealing with spectrum scarcity (Cuilenburg, 2003). Also as noted, the ever growing volumes of information in communications have led to the global resolve to expand communication channels as observed earlier. Given the critical role of the information and communications sector to modern economies, the proposition for the search for additional spectrum capacity utilisation can no longer be viewed as an American or European issue, but a global issue to which most countries have demonstrated interest (Hamel, 2009).

The near-miraculous rise of the Asian Tigers and countries such as China and India based on heavy investments in the information and communications sector, demonstrate to small African countries the strategic role the sector can play in development. The liberal nature of the ideological underpinnings of digitisation as highlighted in the preamble of the present chapter is critical to the understanding of the study's approach as explained in chapter 2.

The imperatives to digital broadcasting migration vary from country to country but globally there exists common points relating to the programme. Whilst, digitisation has been 'politicised' in certain quarters as the search for a market for the electronic and broadcasting industries of the developed countries, the views of pragmatists such as C. K. Prahalad that small nations can also take advantage of the same market are critical (Prahalad, 2006). Digital broadcasting migration is concerned the adoption of digital systems in the transmission of broadcasting. Digital broadcasting migration can be defined as a process in which broadcasting services offered on analogue technology are transferred to digital based networks over a specific period (ITU report, 2006). Peter B. Seel and August E. Grant observe that the transition to digital is dubbed as "a defining force of the time in general and of the evolution of broadcasting in particular (Seel and Grant, 1997:26).

As pointed out by Hyunsun Yoon the most acclaimed reason for the transition to digital, is the desire to resolve the scarcity of radio frequency spectrum (Yoon, 2013). Indeed, whilst in the case of developed countries, wavelengths[9] for broadcasting had become 'critically scarce' leading to the pressure type solution of multiple diverse private outlets in the sector, impossible; in the case of most African countries such as Zimbabwe, scope for additional television channels and radios existed within the existing analogue pipe (Mapanzure, 2000:1). However, despite the above view, the growth of the mobile sector and the demand for community radio and regional television has led to the demand for greater spectrum utilisation in Africa as well (IMPI report, 2014). It is against this observation therefore, that the philosophical and thus historical roots of the DBM have become pertinent.

3.4   Axiology: The Researcher's Biographical Note

A brief engagement with my values (as a researcher) and their impact in terms of the consideration of the issues of the study had to be explained. Axiological preferences relating to what a researcher views as important offer some understanding regarding the researcher's choices. These values developed through a researcher's personal encounters in life and the nature of education one is exposed to. The brief research life for my first degree, *Post-Graduate Diploma in Ccommunication and Media Studies, Master of Arts in Communication and Media Studies* and *the Master of Science degree in Development Studies* is that these were all conducted using the qualitative research methods. The repeated usage of the qualitative approach has created an affinity for the approach. This affinity is despite the researcher having completed a course in advanced quantitative research during the masters' degrees.

A biographical note helps the researcher to declare the values that shape their worldview (Marshall and Rossman, 1999). Sometimes as researchers, we are not aware of our dispositions in research until we declare who we are through a process of reflexivity. Often traced back to the work of the Brazilian critical pedagogue Paulo Freire, the concept of self reflexive dialogue between the researcher and researched in the effort to create meaning of a meaningless environment is critical to research (Sauko, 2003). The Freirean philosophy or method originates from adult literacy teaching. Freire argued that instead of teaching literacy from textbooks, littered with symbols and ideologies derived from middle-class culture, the educators should discover the words and ideas that derive from the students' life context (Sauko, 2003). This would not only enable them to read mechanically but to 'name' their world ('ghetto,' 'oppression') as a

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[9] Is another term for radio frequency spectrum

first step towards changing it (Freire, 1970). Translated into methodological terms, this education refers to a mode of inquiry in which the scholar critically reflects on their notions of 'proper' research and allows respondents to challenge certain notions about the world in a dialogic fashion between the researcher and the researched. Self-reflexivity in research has two functions. The first is to relate an experience regarding the processes and procedures involved in the research and the second is to critically investigate the discourses that constitute the research experience.

The opinions above were critical to my situation as I had to quickly learn the appropriate language of digitisation having started off without any requisite language for electronics. John Henry Newman therefore observes that language is an embodiment of the progress of thought and events of history, style and changes as argued by (Newman, 1996:187) I found digitisation leaning towards electrical engineering in terms of language. Such language was definitely problematic as I lacked the background to the engineering side of communications. In the case of Zimbabwean universities, issues of electrical engineering were usually offered separately to the courses in media and communication studies as reflected in the regulation of these universities.

I venture to say the arrangement of courses in most Universities in Africa, general reflect the British tradition toward education. Within such tradition, my general observations are that issues of media and communication studies on the one hand, and courses in computers electronic engineering and telecommunications on the other, are usually offered as separate entities. However, in the case of Universities in the United States of America, media and commutations studies were usually offered in combination with a range of other courses in electrical engineering such as telecommunications convergence and computers among others (see regulations of the Ohio State University on communications studies).

The institutional legacy of the university to which students conducted their studies not to mention its environment, were treated as critical to the way one would in future conduct their research. In the Socratic views, any university no matter how small, cultivates and perpetuates certain worldviews (Newman, 1996). In this context, Harvard University in the United States of America is known for espousing liberal values in her curriculum. The liberal nature of this great American university is in line with the founding principles of that country's liberal democratic principles. This is also the case with Yale University and Massachusetts Institute of Technology (MIT), both of which are American universities responsible for the education of leaders and other critical government employees. There is also something unique about Oxford University

in the United Kingdom. Oxford University is renowned for scholarship with an impact on policy, both local and foreign. Therefore, university training is the great ordinary means to a great but ordinary end (Newman, 1996). It aims at raising the intellectual tone of society, cultivating the public mind and purifying certain tastes. Universities are supposed to supply true principles to popular enthusiasm, fix aims to popular aspiration and give enlargement and sobriety to the ideas of the age (ibid.). This takes us to a brief analysis of the institution where I conducted my studies, the University of KwaZulu-Natal and to be more specific the CCMS and its research tradition in the school of humanities at the university. Briefly, UKZN, formally Natal University is one of the old South African Universities at the forefront of higher education transformation, embracing all shades of the South African society. CCMS draws students from across the world, bringing a global imprint to matters of research. It is in Africa, a melting pot of different traditions where research influences on media issues from different parts of the world converge.

Furthermore, the University's Centre for Culture and Communication was founded at the height of apartheid, embracing the growing tide of views and opinions against apartheid. As espoused in its mission, CCMS has remained the voice of conscience on media and cultural issues in the country and the region. The centre's liberal approach to issues of society can thus never be mistaken. The tradition had an impact in the way I view society. As I entered CCMS, I was strongly oriented in the 'old school' Marxist lenses on media studies. I had thus been overtaken by several waves of reformation to the ideas of Marx in what could be termed neo-Marxist scholarship concerning developments in media. I needed to adjust my approach to embrace some of the latest views concerning the emerging media landscape.

It is in this context that the exposure to international scholars such as Marc Raboy and Sandra Braman among others by my supervisor, that the quest for more pragmatic approaches to issues of the study were ignited. The integration of Africa into the information society as a result of advances in technology has ignited interest in learning about how the continent can benefit more from such technology (McQuail, 2005). As observed by Angharad N. Valdivia (2006) the task ahead was not that of finding ways of controlling the new media but of giving active thought to the new developments and finding appropriate forms of accountability for the new forms of media, and also identifying appropriate standards for diverse uses and applications (McQuail, 2005).

Although scorned in at scholarship as recently as the 1980s, the concept of convergence has become an acclaimed process in current discourses about new media.

Convergence has been embraced in current debates about new media as a natural phenomenon. In this regard it is important to observe that every literature has a character of its own, each according to its epoch and peculiar circumstances (Downing, 1996; Newman, 1996; Hart, 2009). Therefore, literature on DBM has its unique nuances and a variety of ways in which it manifests and perpetuates convergence and the liberal thought. Further it is against this backdrop that literature on digital broadcasting, or simply new media, demands unique approaches (McQuail, 2005). Gerda Du PLooy says this falls within the purview of the search for new directions in terms of theory in media studies, befitting of the emerging media landscape of the digital age (Du PLooy, 2006). Therefore, the body of knowledge on 'new media,' commonly referred to as 'digital media,' carries its own peculiarities in terms of methods, methodologies and theory (Saukko, 2003; Valdivia, 2006; Du PLooy, 2006; McQuail, 2005).

It is against this background that this study has generated its own language and vocabulary around the methodology and methods employed in study. Regarding DBM there appears to be consensus around the call for new theory or what is referred to as 'new directions' in terms of the methods and methodologies that can capture the nuances of the media of the digital age (Du PLooy, 2006). A literature review on digital migration captures the nuances of the media discourses of the digital age (McQuail, 2005).

The literature review in this research ensured that the study would not simply duplicate the findings of other researchers in DBM studies (Hart 2007; Tichapondwa, 2013). Even in cases where such repetition would be unavoidable, a literature study remains critical in identifying whether the issues raised in previous studies in different environments have relevance to other cases, especially the one under consideration (Hart, 2007). It is also through the review of literature that *the temporal* and *geographical* gaps to this study were identified. In this regard, temporal gap refers to a situation where similar studies about a phenomenon were carried out years in the past and are now dated (Tichapondwa, 2013).

The geographical gap relates to a situation where similar studies about a phenomenon may have been carried out in other places other than the site of current research (Tichapondwa, 2013). Indeed, Zimbabwe stands to learn from the experiences of other countries regarding issues of digital migration studies. An overall appreciation of literature on DBM helps locate this study within the broader ecology of media studies in the global context as highlighted earlier (Tichapondwa, 2013). The geographical and temporal gaps to the study can be understood effectively through the case study approach (Baxter and Jack, 2008; Leedy and Omrod, 2010).

3.5 The Case Study Approach and its Dynamics

Three levels, (the international, regional and local Zimbabwean levels) had to be identified to ensure a thorough in the treatment of available literature analysis. The consideration of international and regional voices on broadcasting migration is critical in situating the study within a broader global context. In the views of Modesto Tichapondwa, the consideration of the voices of researchers at the *international* and *regional* levels brings depth, scope and understanding for a case study (Tichapondwa, 2013). Arturas Medeisis notes that case studies provide a structured way of looking at events (Medeisis, 2009). A sharpened understanding is the outcome of a case study (ibid.).

Modesto Tichapondwa observes that the starting point of analysis for a case study is the global environment (Tichapondwa, 2013). After all every phenomenon has its global and immediate context. It is from the global environment that researchers yield *the temporal* and *geographical gaps* of a study (Tichapondwa, 2013). Therefore, when engaging a case study, it is imperative to first highlight on the developments in literature at the global level before one shifts attention onto the area of immediate focus (Machengete, 2010; Tichapondwa, 2013). Every study issue in research has a broad and immediate area of focus (Machengete, 2010). This can be expressed in terms of the geographical boundaries or the scope of the field of study (Machengete, 2010). The global voices in this study represent the macro environment, whilst, the area of immediate focus relates to the micro-analysis of a study (Machengete, 2010; Tichapondwa 2013).

Without prior knowledge of what has occurred in broadcasting at the international level, Drummond and Paterson say that it would be practically difficult to understand the trajectory of the development of theory and methods in broadcasting at the national level (Drummond and Paterson 1985). Therefore, the familiarisation with literature at the macro and micro levels of a study is critical in ensuring that all angles of a phenomenon are considered in analysis (Tichapondwa, 2013). The need to delve into history in order to locate the bearings of a study is critical in establishing the trajectory of analysis in broadcasting. This endeavour accounted for the 'somewhat anachronistic' references quoted by the research. Anachronism is 'unavoidable' for a case study; and furthermore, given that the analytic endeavour for this research is partly to map the trajectory of broadcasting in Zimbabwe (Medeisis, 2009).

The international global approach to issues of broadcasting in this study is an acknowledgment that in as much as broadcasting is a national issue, it also falls within the purview of international agencies such as the International Telecommunications Union (ITU) (Post and Telecommunications Regulatory Authority

(POTRAZ), 2014). Therefore, analysing broadcasting from a global perspective assisted in delineating the *macro, meso* and *micro* environmental issues informing broadcasting in the global age (Tichapondwa, 2013). The approach also helped in accounting for the major issues driving discourses in broadcasting digital migration in a holistic manner (Hart 2007; Medeisis, 2009).

3.6   The International and the Regional Voices on Media in Zimbabwe

At the macro global and regional levels, a rich body of knowledge exists on various issues related to DBM. Of interest are the works of scholars such as Seel and Grant, 1997; Thompson, 1997; Graham 1998; Webster 2004; Barker, 1999; Beynon, 2000; Duncan, 2000, 2007, 2012; Cogburn and Nyaki, 2001; Young, 2003; Raboy, 2003; Cuilenburg and McQuail, 2005; Metcalf *et. al.*, 2003; Braman, 2003, 2004, 2009, 2010; Galperin, 2004; Castells, 2004; Brown and Picard, 2005; Cave and Nakamura 2006; Stork *et. al.*, 2006; Bell and Kennedy, 2007; Fourie, 2007; Tomaselli and Teer-Tomaselli, 2008; Teer-Tomaselli, 2009; Ndela, 2009; Freedman, 2008; Chakravartty, 2008; Golding, 2008; Ibagere, (2010); Weber, 2010; Berger, 2012; Madikiza 2011; Olwal *et. al.*, 2013. The voices of some of these scholars and others were considered under the different subheadings below.

3.7   Media Policy, Regulation and the Changing Media Landscape

Policy and regulation are the first and most probably important issues about the emerging media landscape for the simple reason that existing laws have been made obsolescent (Duncan, 2000). In Zimbabwe the question is about who should collect license fees as surely the law that only recognised ZBC have been overtaken by events as new players have been licensed to operate alongside the public broadcaster. As a result people are now defying paying listener's license fees. Others have even questioned the law on felling to state the gadget through which broadcast can be received as even through the simplest of phones one can receive radio signals. On the issue of media policy and law are prominent names such as Andrew Graham, Marc Raboy and Sandra Braman among others. The regulatory environment of broadcasting in the global age is critical as small countries such as Zimbabwe are expected to adopt policy regimes that adapt change in line with the new dispensation (Graham 1998; Raboy, 2003; Braman, 2010). These countries find themselves required to implement global strategic objectives that seek to resolve the problems of the scarcity of radio spectrum in the information and communications sector while facing internal political, economic and ideological constraints which sometimes militate against their international obligations (ITU ICT toolkit, 2006).

In her article: *Defining information: An approach for Policy Makers,* Braman investigates the philosophical issues that influence policy makers in the choice of certain policy positions in the information and communications sector (Braman, 1989). Among these issues are the ways policy makers perceive 'information' and ultimately interpret it (Braman, 1989). For instance, the concern with policy makers in the information and communications sector is whether 'information' can be shared by everyone in society or whether it is a constitutive force of society to be shared only among those who are privileged to have 'the need to know' (Braman, 1989). Therefore, the issues Braman engage can be viewed as the foundational basis in understanding media policy and also the reasons why countries adopt certain policy positions in the information and communications sector. Indeed in the case of most African countries, the choice has been that of reluctance to liberalise the airwaves (Chari *et. al.*, 2003). This partly explains why Africa's integration into the global system in the information and communication sector in line with international regimens as directed by ITU has lagged behind.

As implied in the voices of most local scholars, the information and communications sector in Zimbabwe is regarded as a powerful weapon that cannot be shared with those of opposing views (Moyo and Chuma, 2010). This view is prevalent especially among Zimbabwean scholars who write on media law and policy in the country (Chiumbu and Mazango, 2000). The question on the way a people perceive and treat information as posited by Braman, is no doubt central to debates on policy issues in the communication and media industries globally (Braman, 1989).

Braman's view on information as a resource to be shared dovetails with the international global agenda of promoting universal access to information by international bodies such as ITU (Castells, 2004). In the increasingly seamless global communication environment where radio-waves respect no 'boundaries', media policy and regulation have proceeded by way of international consensus on the use of this vital resource (Raboy, 2003; ITU *ICT toolkit 2006).* In this regard, the use of electromagnet signals vital for broadcasting, telephone and cellular has to be well coordinated by rules agreed upon by all nations of the world (POTRAZ, 2013). Therefore, within this scope, national and regional plans cannot be at variance with the plans submitted and endorsed by ITU *(ITU ICT toolkit 2006).* This entails that in as much as broadcasting policy is a national activity; it is equally influenced by events at the regional and global levels (ITU ICT toolkit 2006).

The regulatory challenges to governments of the new media for countries both big and small are so immense (Duncan, 2000). The changes in the broadcasting sector have resulted in fundamental changes in

the architecture of the information and communication industry. In the views of Galperin, the changes have created new competitive advantages, eroded others and altered the balance of power between different stakeholders seized with broadcasting (Galperin, 2004). In the views of Golding, 'it is a new complex media environment'. For instance, Golding points out that matters of licensing which in the olden days were straightforward now need to be approached in a different way as the media is increasingly converged (Golding 2008). In this light, the possibility of regulators having to accommodate multi-service delivery platforms within a single licence is very real, and regulators are being challenged to respond to these developments or be rendered obsolete (Duncan 2000).

As a result, in Zimbabwe for instance, the Broadcasting Authority of Zimbabwe (BAZ), which is responsible for issuing out licences for broadcasting, has had to enter into memorandum of understanding with POTRAZ which regulates the postal and telecommunication industry in the country *(BAZ Report, 2003)*. The two entities who at face value appear to operate different functions have been forced to collaborate in the discharge of their functions as the information and communications industry becomes more and more infused into each other as a result of convergence (Galperin, 2004). As convergence takes root, the idea is to find ways by which to adapt to the change.

It should be observed that digitisation draws its ideological precincts from globalisation (Rickleger, 2011). Globalisation is more than a buzzword, but an organising thought of human interaction, a new paradigm in international affairs with huge implications on operations within nation states (Chirume, 2010). This view is critical to the consideration of broadcasting within the context of international regimens as set through the ITU (ITU ICT toolkit, 2006). Underpinning the discourses of globalisation are the principles of free enterprise, liberalisation, and privatisation of state operations, which remain very much in the spirit of the writing of the 19th century philosopher and economist, Adam Smith (2006), in his treatise *on Wealth of Nation*s. In turn, it is important to observe that liberalism and privatisation are the foundational basis of digitisation (Teer-Tomaselli, 2008). Therefore, within this context the dilemmas that confront Africa in the information and communications sector are about negotiating space with the dictates of the liberal ideology while ensuring the minimal effects of some of the negative impacts of the liberal ideology (Duncan, 2000; Gono, 2005; Teer-Tomaselli, 2008). In this regard, the concern is about how African countries can maximise their benefits by being part of the emerging information society whilst minimising the perceived aberrations of the new system (Huni, *The Herald* 29 June 2014*)*.

Referring to Botswana (Stork *et. al.*, 2006) and Ghana (Olwal *et. al.*, 2013), commentators have suggested that at the initial stages of the implementation of the migration programme, these countries should be concerned about envisioning the entire programme to avert challenges and limit risk that comes with new developments. These observations seem pertinent to the Zimbabwean situation. This view is critical especially as it helps to identify the parameters of focus regarding the current transition in the broadcasting sector (Berger, 2012).

The writings of Teer-Tomaselli therefore, have assisted in setting the tempo for analysis in the area of broadcasting at the regional level. By exploring the contradictions and dilemmas facing broadcasting in Africa, especially in the light of the changes brought about by globalisation, Teer-Tomaselli (2009; 2014) delineated the trajectory of research in Africa's broadcasting sector, regarding the global environment. Jane Duncan, another South African scholar, is also one of the writers in this area whose footprints are significant in the understanding of broadcasting in the global environment (Duncan, 2000). Together with other such scholars as Guy Berger (2010) and Thomas Olwal *et. al.*, (2013), Jane Duncan articulates the need for creating awareness about digital transition and its benefits, challenges and impact on society (Duncan, 2012). In their view, this is critical if the 'bigger picture' of digitisation on broadcasting is to be achieved (ibid.).

3.8   Summary and Conclusion of Chapter

Chapter 3 evaluated literature on some of the aspects of digital broadcasting migration. Most importantly the present chapter traced the philosophical roots of DBM back to the turbulent history of the 1970s in America and Western Europe, to date. The chapter clarified some of the key technical issues involved in the digital transition. The next chapter evaluates literature, focusing on spectrum management and some of the technical issues about broadcasting.

CHAPTER 4

IMPERATIVES OF DIGITAL BROADCASTING MIGRATION

4.1   Introduction

The previous chapter engaged the imperatives of digital broadcasting migration. It explored the delivery and propagation methods of signals for broadcasting. Using the same style and discursive mode employed in chapter 3, the present chapter illuminates 'spectrum management,' emphasising its role in the allocation and use of radio frequencies in the digital economy. Against this background, the general trends to spectrum management are highlighted. The present chapter delves into the discussion of some of the basic technical issues involved in broadcasting. The chapter highlights the important elements of the broadcast chain

4.2   Spectrum Management

Ibagere's view on 'spectrum management' (an entirely new area in African media scholarship), is that the transition from analogue to digital is a game changer in the politics of broadcasting in Africa (Ibagere, 2010). It is a game changer in that it yields 500 channels (about ten times more than what was available during analogue) for both satellite and cable (Brown and Picard, 2005). This change means that there is a lot of scope in the flow of data and information in the global age. Ibagere gives depth and new understanding on the issues of broadcasting in the global age (Ibagere, 2010). In this light, the character of broadcasting policy, which has always been viewed as domiciled within the nation-state, is now being assigned a new global perspective not only in terms of functionality but also in terms of the expected international policy and regulatory regimens as stipulated by UN entities such as ITU *(ITU, ICT toolkit 2006).* As highlighted in chapter 1, spectrum management relates to the administration of the electro-magnetic spectrum or bandwidths through which signals of communication (sound, image, and text) are transmitted (Hwei, 2003; Mclean, 2007; Ibagere, 2010).

Digitisation refers to the global trend of moving from analogue to digital transmission of information (Madikiza, 2013). If information is digitised, it can easily be stored and transmitted in any digital format, which could include computer networks, digital telephone lines, cellular networks, cable television, satellite communication or terrestrial radio signals (Seel and Grant 1997; Duncan 2000; Golding 2008). This means convergence is blurring the boundaries between previously distinct media, thus posing a regulative challenge (Duncan, 2000; Golding, 2008). Services that, for instance, were traditionally distinguishable from

one another and provided by vastly different entities, and that required distinct telecommunications and broadcasting technologies such as voice, data and broadcasting distribution, are now becoming indistinguishable (Duncan 2000; Golding, 2008).

Increasing convergence of broadcasting and telecommunications, fuelled by the digital revolution, has led to an explosion of new services, and potential for even more as new technologies are increasing the ways in which information can be delivered (Duncan, 2000). Therefore, these developments have brought about new challenges and opportunities which demand a rethink of the information and communications sector (Chiumbu and Mazango, 2000).

In effect, consumer demands that needed to be satisfied by a radio receiver, television and a computer can now all be met from the same delivery platform - the cellular phone (Seel and Grant 1997; Duncan 2000; Golding 2008). Others even believe that the potential to use the internet for broadcasting has barely been exploited despite the mushrooming of underground broadcasting on internet (Golding, 2008). Internet broadcasting is evident in countries like Zimbabwe, where the response to liberalise broadcasting or what has been dubbed the 'airwaves' in general has been slow (Mapanzure 2000). Therefore, these developments have raised questions about the effectiveness of traditional nationally-based regulatory regimes (Chiumbu and Mazango, 2000).

Satellite broadcasting coupled with the expansion of cable outlets have made it possible to broadcast on a trans-national basis (Duncan, 2000). Direct-to-home services can now be up-linked from the least regulated countries (Duncan, 2000; Hwei, 2003). In turn, these developments have led to a fundamental rethink of media policies, laws and ethics to suit the new landscape (Chiumbu and Mazango, 2000). Many countries around the world today are revisiting media policies and laws to try and make them suit the restructuring that has been taking place in the sector in line with global and international regimens (Raboy, 2003). It is from this framework that this thesis approaches DBM in Zimbabwe. The issue of spectrum management will fully be discussed later in the chapter as it is critical to explain broadcasting another central issue of the study.

4.3   The Broadcasting Chain

The understanding of the broadcasting chain in my view is critical to issues of spectrum management for the simple reason that broadcasting uses radio frequencies to operate as discussed earlier. Essentially, there are three requirements that complete a broadcasting chain (Seel and Grant, 1997). These are the

source, the propagation medium and the receiver (ibid.). The source is normally associated with a studio, which contains such components as microphones, video cameras, audio and video players and editing facilities (BAZ report, 2003). The propagation medium for both distribution and delivery can either be cable

Types of Broadcasting

The most dynamic area of broadcasting is not the programming, the stars, corporate manoeuvring, or the ratings battles, but about the capacity to deliver the work of art to the consumer (Seel and Grant, 1997:1). "What ultimately counts is that a work of art is made available, via electromagnetic waves, for reception by the public" Gumbo, 1996:11). In the views of Snoddy there are different types of broadcasting as observed by (Snoddy, 1999). In this regard, Snoddy (1999), this may be done in a number of different ways of transmission such as television and radio. In the views of Emilda Mapanzure, the two types of broadcasting highlighted above are alternatively called mass communication as opposed to the person to person communication one would experience through the telephone, telexes, data transmission and other facsimile systems (Mapanzure, 2000:5-6).

Means of Broadcasting

Broadcasting technically, covers many activities including participation by the receiver (Seel and Grant, 1997). What ultimately counts is whether the work of art has been made available via electromagnetic waves, for reception by the public (Allen, 1992). Essentially, Golding (2008) identifies four ways in which broadcasting can be achieved:

1. Terrestrial or over the air (wireless); be it by terrestrial transmitters (including transmitters mounted on ships)   or via satellite.

2. By satellite transmission i.e. through use of frequencies allocated to satellite broadcasting.

3. Via cable wire, and optical fibre

4. And through telephone networks (including mobile networks).

Perceptively, covered below is an explanation of each of the four ways in which broadcasting is offered:

a)   Terrestrial Broadcasting

Terrestrial signals for both radio and television can easily be accessed by an aerial (Seel and Grant, 1997). Consumers can receive digital signals in markets where signals are broadcast (Brown and Picard, 2005). Therefore, they do not require a Set Top Box (STB) to convert the signals back into analogue unless they have an integrated digital television (DTV) receiver in the case of TV broadcast (Brown and Picard, 2005).

Digital terrestrial television (DTTV) offers up to 40 channels, about five to eight times greater than analogue terrestrial (Brown and Picard, 2005). However, this output in terms of channels is far less than that which can be achieved through satellite or cable. The greatest advantage of terrestrial over satellite and cable technologies is of 'portability' (Seel and Grant, 1997).

Furthermore, once established, terrestrial technology does not require additional expense in terms of reception dishes or cables. What would be required for reception is simply an ordinary aerial and a Set Top Box (STB). Therefore this makes terrestrial the most preferred technology over satellite and cable in broadcasting (Brown and Picard, 2005)

b)   Satellite Broadcasting

Satellite broadcasting, especially television, traces ancestry back to the 1960s (Seel and Grant, 1997).   In 1961, Relay satellite began transmitting television signals in the United States of America (USA) and also some parts of Europe (Mapanzure 2000).

A year later *Syncom* of the USA, established itself as the first geosynchronous satellite capable of transmitting signals to earth continuously (Brown and Picard, 2005). Satellite broadcasting has to do with up linking a radio or television signal to the satellite in orbit. The satellite redirects the same signal to earth where it is received by identifying technologies of the satellite in orbit (Hwei, 2003).

The first geosynchronous communication satellite, *Syncom* was launched on 26 July 1963 (Seel and Grant, 1997). In the same year, Intelsat 1 was launched into a synchronous orbit on April 6, 1963. Intelsat 1 (nicknamed "Early Bird"), is the world's first commercial communications satellite (Seel and Grant, 1997).The Soviet Union (USSR) also launched a national network of satellite television called *Orbita* (Seel and Grant, 1997)*.* In 1972, Canada launched *Anik 1,* a geostationary satellite. In 1974, Direct Broadcast

Satellite (DBS), was launched in the USA. In the same year, the then USSR launched its first geostationary satellite *Ekran 1* (Seel and Grant, 1997). This satellite carried direct-to-home television (Seel and Grant, 1997). Today more satellites for communication have continued to be launched into space (ITU 2006).

c)   Cable broadcasting

Cable networks have bi-directional transmission - hence a return path for sophisticated interactive services - but require long term investment and substantial sunk costs for digital conversion (Brown and Picard, 2005; Golding 2008). Even analogue cable can be unprofitable in areas with low population density (Hwei, 2003). Cable has rolled out digital broadcasting incrementally, with easier DTV upgrade in the newest analogue networks (Seel and Grant, 1997).

Digital cable, like satellite, can also yield 500 channels, about 10 times more than analogue (Brown and Picard, 2005). The greatest advantage of this technology is that it brings to the fore the broadband services integrating the telephone, internet and lately mobile phone (Golding, 2008). This relationship is what in modern parlance has been dubbed the 'triple play' (Brown and Picard, 2005; Golding, 2008).

d) Telephone Broadcasting

Increasingly, the possibility of involving the telephones and mobile phones in broadcasting are some of the topical issues of the digital age and the convergence (Golding, 2008). Technically, the transmission of broadcast is now possible using broadband digital subscriber line **(DSL)** technology, which allows high bandwidth data transmission on a conventional residential telephone line (Adda and Ottaviani, 2005). Observed however, is that the current penetration of this platform is negligible. However the future of this technology is promising (ibid.).

4.4   Major Players in Satellite Broadcasting Provision in Africa

The South African-based M*ulti-Choice's DStv* is the main digital satellite broadcasting provider especially within Sub-Saharan Africa (Haddow, 1999; Duncan, 2000). Another player of consequence is *My TV Africa;* a subsidiary of Dubai-based Strong Technologies (Mapanzure, 2000).

France's *Canal Horizons* and *Vivendi* are the major broadcast providers for the French-speaking countries of Africa (Mapanzure, 2000). The *Free2view* is also another popular satellite provider in Africa. In 2009, China launched the *Star DTV* for providing television broadcasting signals in Africa (Haddow, 1999).

Observations are that satellite television is far more successful in Africa than cable and terrestrial because of the high penetration levels of its signals (Brown and Picard, 2005). Satellite signals can easily breach obstacles such as mountains and high rising buildings as compared to terrestrial frequencies which move in straight horizontal lines above earth surface (Seel and Grant, 1997).

As a result, terrestrial frequencies can easily be affected by undulating terrain and even high rising infrastructure (Hwei, 2003). Furthermore, the infrastructure and maintenance of cable is comparatively expensive (Brown and Picard, 2005). Brown and Picard are of the view that African countries only started investing in cable communications technologies recently (Brown and Picard, 2005). In the views of Brown and Picard, satellite television in the digital format has the potential of creating 500 extra channels, 10 times more than analogue satellite (Brown and Picard, 2005). On the issue of costs, Brown and Picard lend their support for digital satellite as the way to go for relatively economically weaker nations such as Zimbabwe (Brown and Picard, 2005).

For operators, digital satellite has the technical advantage that cable technologies cannot offer (Brown and Picard, 2005). Satellite services are immediately available anywhere in the satellite's 'footprints', including even foreign lands (Brown and Picard, 2005). Therefore, in comparison to cable and terrestrial technologies the sunk costs for satellite are relatively small (Seel and Grant, 1997). The disadvantage for satellite is that it does not permit two-way communications, relying on telecoms line with a modem to provide interactivity (Tusa, 1993; Brown and Picard, 2005). Below are the Distribution Processes of Digital Satellite, Cable and Terrestrial TV adapted from (Brown and Picard, 2005)

Fig 4.1 depicts the distribution network for satellite TV
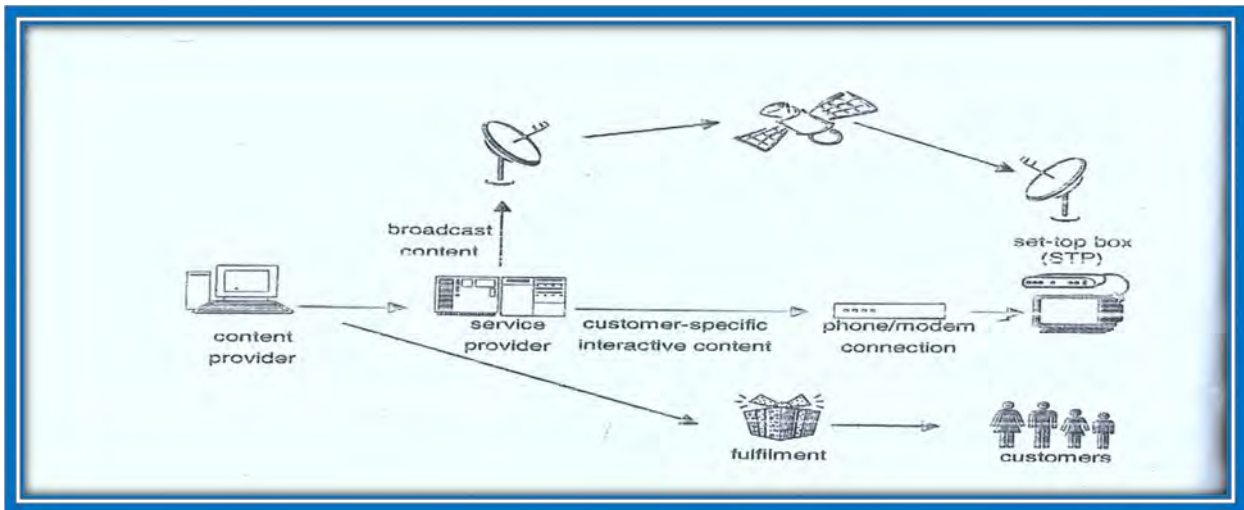
Fig 4.2 below depicts the distribution Process for cable TV:

Figure 1.2: Digital Cable Television
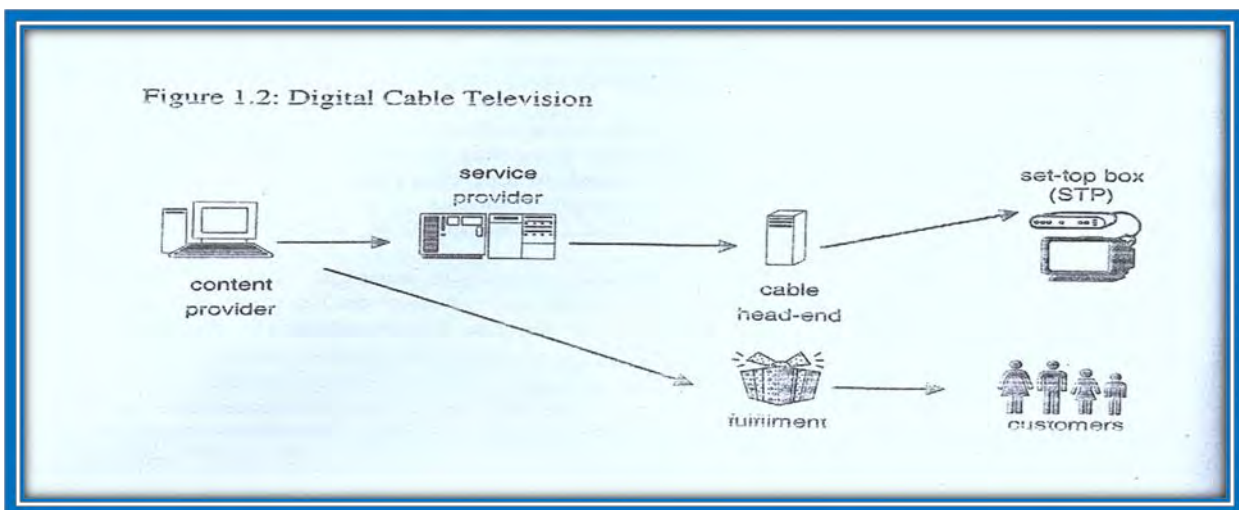
Fig 4.3 below depicts the distribution Process for Terrestrial TV:
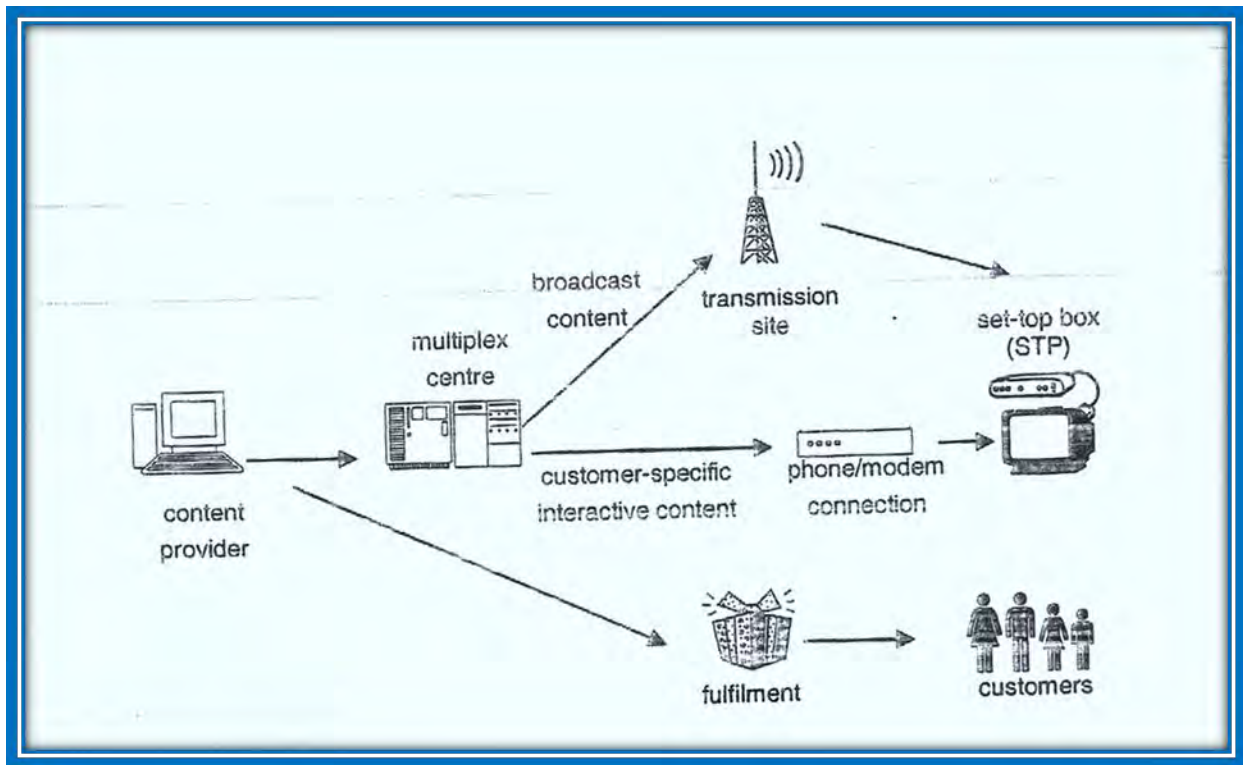
Source Brow and Picard, 2005

4.6   Propagation of Radio Waves

In the views of Peter Seel and August Grant, another critical issue about broadcasting is the concept of propagation (Seel and Grant, 1997). There are a number of mechanisms through which radio waves may travel from a transmitting station to a receiving antenna at home or at the office (ibid.). In the views of Snoody, the more important of these ways are designated by the terms *ground waves, sky waves and space or troposphere waves* (Snoddy, 1999)

In brief, Snoody observes that ground waves are sometimes called surface waves. They can exist when the transmitting and receiving antennas are close to the surface of the earth. The sky waves represent energy that reaches the receiving antenna as a result of a bending of the wave path introduced by the ionization in the upper atmosphere. This ionized region, termed the ionosphere, which begins about 80km above the earth's surface, accounts for practically all very long-distance radio communication (ibid.).

The space waves represent energy that travel from the transmitting to the receiving antenna in the earth's troposphere, for example the portion of the earth's atmosphere in the first 10 kilometres adjacent to the

earth's surface (Snoddy, 1999). The space waves commonly consist of at least two components (ibid.). One of these is a ray that travels directly from transmitter to receiver, while the other is a ray that reaches the receiver as a result of reflection from the surface of the earth (ibid.). Space wave energy may also reach the receiver as a result of reflection or refraction produced by variations in the electrical characteristic of the troposphere, and by diffraction around the curvature of the earth, hills among others (ibid.).

Represented below are examples of the analogue and the digital signals:

The Analogue Signal

Value
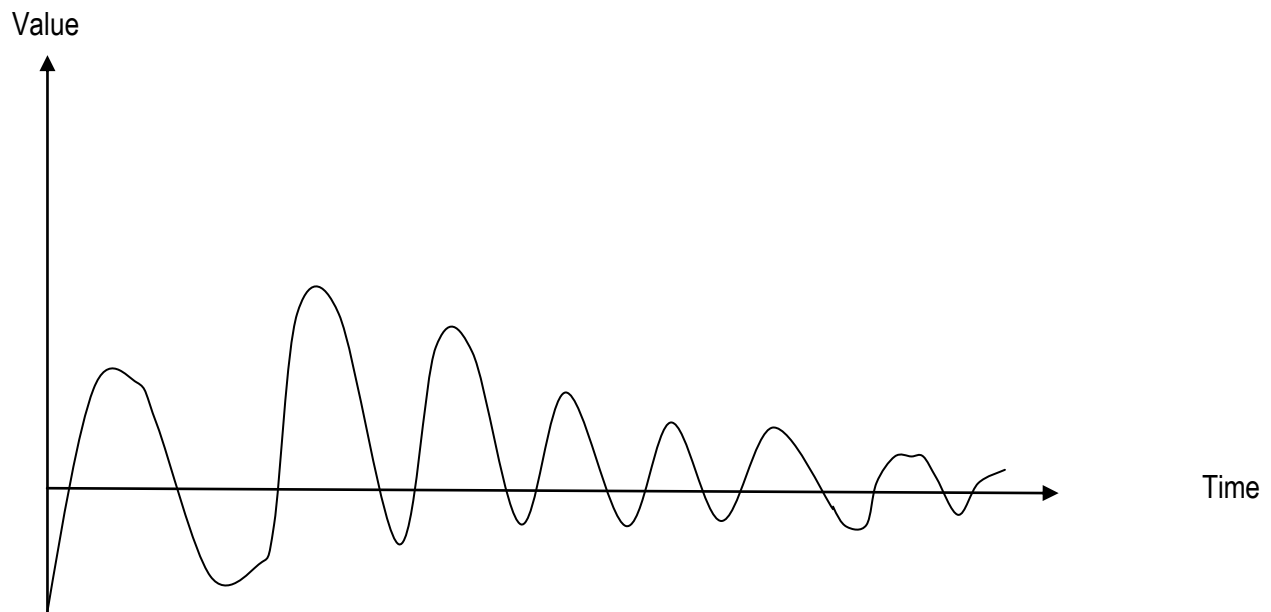
The further the analogue signal travels away from the point of transmission the more the quality of the signal is compromised.

The Digital Signal
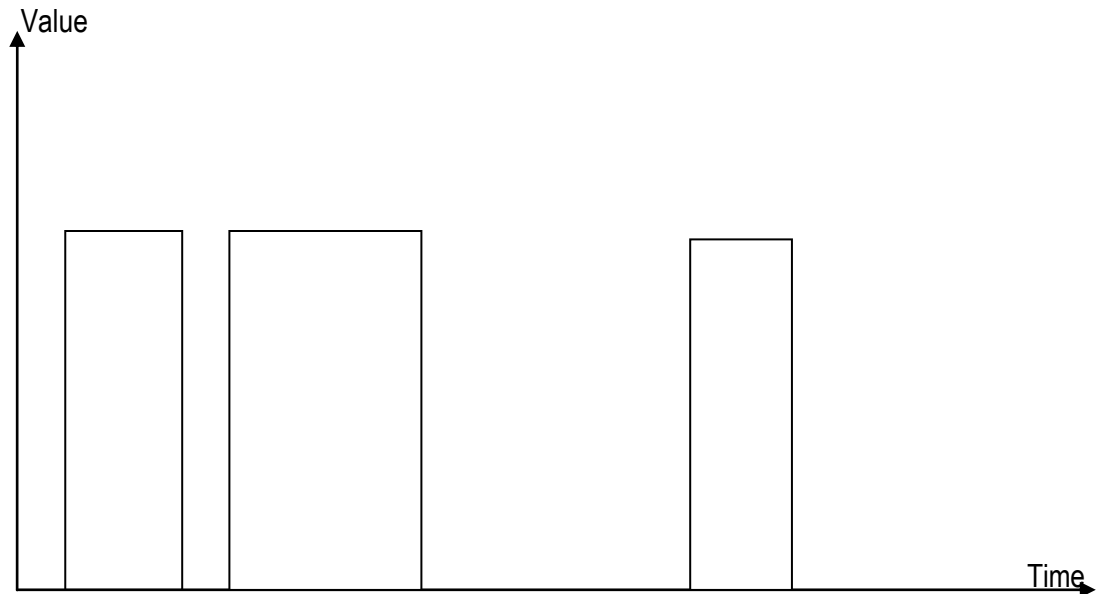
Digital Data – representation variable takes on discrete A (finite and countable number of) values in a given interval, for example, text, digitised images and many others.

Source: adapted from Fall 2010

There exists several frequency bands allocated for 'radio broadcasting' (Brown and Picard, 2005). These are identified as the Low Frequency band (LF), the Medium Frequency Band (MF), the High Frequency Band (HF), the Very High Frequency Band (VHF), the Ultra High Frequency band (UHF) and, the Extra High Frequency Band (EHF) (ibid.). As observed by Francois Rancy and associates, the (EHF) is not commonly used for broadcasting (Rancy *et al.,* 2011). The above bands are characterised by different propagation modes (Seel and Grant, 1997). The receiver to radio frequencies could be a radio (audio) receiver, television, a computer or any other gadget capable of receiving the broadcasting signal (Seel and Grant, 1997).

Principally, there are two types of transmitter locations (Rancy *et al.,* 2011). These are terrestrial based transmitters and satellite based transmitters (Seel and Grant, 1997). Terrestrial transmitters are transmitters that are located on the surface of the earth (ground) while satellite transmitters are located on an object in space (Seel and Grant, 1997; ITU ICT toolkit 2006). At least two types of modulation are generally used in the provision of broadcasting services (Rancy, 2011). The two are Amplitude Modulation (AM) and Frequency Modulation (FM) (Ibid.). With Amplitude Modulation, the amplitude characteristics of

the carrier are modified by the source signal (Hwei, 2003). At the receiver, a reverse process known as demodulation occurs to reproduce the signal from the source (ibid.). The two types of modulation are associated with analogue broadcasting systems (ibid.). However, with developments in digital broadcasting systems, digital modulation techniques have also emerged (ibid.). The digital broadcasting systems include Quadrature Phase Shift Keying (QPSK) and Minimum Shift Keying (MSK) for digital sound broadcasting, and m-VSB (Vestigial sideband) and m-QAM (quadrature amplitude modulation) for digital television broadcasting (Beal, 2013:3).

- **Amplitude Modulation (AM)**

Amplitude Modulation has subdivisions that are mainly to do with frequency band operation: Long Wave (LW), Medium Wave (MW), and Short Wave (SW) (Hwei, 2003). Long Wave was never introduced to Zimbabwe (Mapanzure 2000). The main method used to propagate airwaves in Zimbabwe before independence was MW. The main limitation of MW is its restricted distance coverage (Hwei, 2003). It is also highly susceptible to noise (Seel and Grant, 1997). Medium Wave requires an extensive network of transmitting sites, if a good coverage is to be obtained (Rancy *et al.,* 2011).

Another subdivision of amplitude modulation is Short Wave. Short Wave is used to propagate radio waves (Hwei, 2003). Although SW is an old technology in the history of broadcasting, it has the capacity to cover wider distances (Seel and Grant, 1997). It has been the major means by which international radio has been established (ibid.). Short Wave was used for propaganda purposes during the Second World War (Brown and Picard, 2005). As observed the technical concern with SW technology is the compromised quality of its output (Huwei, 2003).

- **Frequency Modulation (FM)**

The frequency modulation was introduced to Zimbabwe in the early 1970s to remedy the shortcomings encountered through SW regarding the quality of output of that technology (Mapanzure, 2000). Today frequency modulation is the central form of broadcasting technology in Zimbabwe (ibid.). In the short to medium terms, frequency modulation requires huge capital outlays to establish the network (Brown and Picard, 2005). Technically, frequency modulation is easily obstructed by high rising buildings, mountains and such like other physical impediments along its path (Rancy *et al.,* 2011).

4.7   Technology and the Lure of Digitalisation in Broadcasting

Galperin, quoting the late Ithiel de Sola Pool observes:

> Each new advance in the technology of communications disturbs a status quo. The improvements associated with digital broadcasting migration have challenged some of the basic parameters upon which the analogue broadcasting regime rested. Digital TV originally emerged as a solution to the problem of bandwidth conservation in the transmission of High Definition Television (HDTV). By translating HDTV signals into binary language of computers, engineers managed to deliver HDTV over narrower frequency channels. Yet, it soon became clear that the same principles could be used to transmit any kind of video signals (not necessarily HDTV) through different delivery platforms such as internet and telephone among others. At its most basic, digital TV consists of sampling and encoding video signals as a stream of zeros and ones and transmitting this data stream through a transport platform such as terrestrial, satellite, cable and telephone network to a receiving device, for example, digital TV where the original video signal is reassembled. This data manipulation allows compression of the digitised information signal to a point where it can be transmitted more efficiently using less bandwidth. One of the advantages of digital is the capacity to squeeze more channels within existing pipes.

Herman Galperin, 2004:8

The 20th century has seen an explosion of technological developments which have resulted in a changed media environment (BAZ report, 2003). Worldwide communication channels, commonly referred to as the media, are changing (Seel and Grant 1997). There are many technological changes which have brought about new forms of communication such as satellite and cable television, cellular telephone, the internet and interactive multimedia among others (Golding 2008). These changes have implications on the transmission, news sourcing and news quality (ibid.). According to the MEC report, Zimbabwe is still relying on analogue-based technology when much of the world has gone digital (ibid.).

Simply defined, broadcasting relates to a radio - communication service in which the transmissions are intended for direct reception by the general public (BAZ report, 2003). The most acclaimed definition of broadcasting is that it is an industry and practice integral to the promotion of expression and access to information (ITU report, 2006). A broadcasting service may include sound transmissions, television transmissions or other types of transmissions (BAZ report, 2003). Although the BAZ definition of broadcasting is limited to radio communication, a broadcasting service can also be provided through cable, phone and the internet (Golding, 2008). Radio and television grew out of pre-existing technologies - telephone, telegraph, moving and still photography, and sound recording (Seel and Grant, 1997). Despite

obvious differences in content and use, radio and television share similarities regarding their history (Seel and Grant, 1997). However, radio appears to have been a technology looking for a use, rather than a response to a demand for a new kind of service or content, and much the same is true of television (Seel and Grant, 1997).

According to Denis McQuail (2005), both radio and television came to borrow from existing media, and most of the popular content forms for the two are derivative from film, music, stories, news and sport (McQuail, 2005). A distinctive feature of radio and television has been their high degree of regulation, control or licensing by public authority - initially out of technical necessity, later from a mixture of democratic choice, state self-interest, economic convenience and sheer institutional custom (Williams, 1976). A second and related feature of radio and television media has been their centre-periphery pattern of distribution and the association of national television with political life and the power centres of society, as it became established as both popular and politically important (Seel and Grant, 1997). Television has been continuously evolving, and it would be risky to try to summarise its features in terms of communicative purposes and effects (ibid.). Initially, the main genre innovation of television stemmed from its capacity to transmit many pictures and sound live and thus act as a 'window on the world' in real time (ibid.).

4.8   Broadcasting and New Technologies: The Next Generation

Although traditionally broadcasting has been dominantly viewed through terrestrial, satellite and cable as distinct technologies, their convergence as interlinked technologies as a result of the internet has seen great transformation of the entire communication and information industry (Golding, 2008). As a result, this transformation has seen new ways and means of broadcasting emerging as well (Gates 1999).

New technologies in broadcasting have seen a shift towards digital mobile phone broadcasting (Hwei, 2003; Golding, 2008). A new generation of broadcasting that blends entertainment of radio and television with the interactive world of the World Wide Web is emerging (Golding, 2008). Broadcasting, especially cable television, offers much more than the passive box it used to be (Brown and Picard 2005). It is anticipated that television will become one of the biggest sources of electronic commerce (Mapanzure, 2000). As observed, television will become one of the main interfaces of a home's local network, controlling everything from lighting and heating to the security system (Gates 1999).

Digital broadcasting has brought a lot of advantages over analogue transmission and consequently, newer methods of handling and processing signals for transmission and also programmes production techniques

(Seel and Grant, 1997; Snoddy, 1999). In particular, the greatest breakthrough relates to the availability of increased bandwidth or spectrum (Seel and Grant, 1997). A key feature of this technology is its ability to compress signals into manageable bits that leaves more space for other information that needs to be propagated (McLean, 2007). Before digitisation there was a one channel one frequency relationship whereas in the digital era there are many channels derived from a frequency (Seel and Grant, 1997). Furthermore, even the face of broadcasting is changing (Seel and Grant, 1997, Hwei, 2003; McLean, 2007, Golding, 2008).

The average viewer of television has hundreds of channels to choose from, and one can access television through tablets, smart - phones, consoles, and basically any device that is connected to the internet (Miller, 2013). As a basis for comparison, where a single analogue program can be broadcast on one transmission channel of 6 MHz to 8 MHz spectrum bandwidth, the same transmission channel could carry a multiplex of 2 to 12 digital equivalent (Seel and Grant, 1997). In addition, most Digital TV standards allow the implementation of single frequency networks (SFN), thereby permitting the reuse of the same spectrum over much larger areas and further increasing spectrum efficiency compared to analogue networks (ibid.). Digital television broadcasting has been in service for over a decade and corresponding technologies have now fully matured. Their performance is such that maintaining analogue networks in place will soon become impossible to justify in economic terms for broadcasters. The interest of' the providers and the interest of the viewers is therefore to go digital and staying analogue can no longer be considered as an option (Rancy et al. 2011). As a matter of fact, the transition to digital TV has already started or even been finalised in many countries (bid.). Obviously, given the very important gains in spectrum efficiency which may result from this transition, there has been growing interest in the last few years on how these gains might be distributed (ibid.). At this juncture, the concept of digital dividend has emerged, which may be defined as the amount of spectrum made available by the transition of analogue terrestrial television broadcasting to digital.

Digital dividend may be used by broadcasting services (for instance, provision of more programmes, high definition, 3D or mobile television). It may also be used by other services, such as the mobile service, in a frequency band which could be shared with broadcasting (for example, short range devices, such as wireless microphones used in theatres or during public events). It may also be used in a distinct, harmonised frequency allocation to enable ubiquitous service provision, universally compatible equipment and international roaming (for example. International Mobile Telecommunications, IMT).

In the views of MEC therefore, there are concrete issues associated with the use of digital technology in Africa (MEC, 2002). Among some of these issues is the fact that although Africa consumes technology, it does not have the capacity to produce much of it. Therefore, the continent relies for most of its technology on imports from Europe, the Americas, Japan, and China. Practically, Africa has to come up with policies on technology. The MEC report states that technology imports require strategizing and planning (MEC, 2002). The report further observes that Zimbabwe had in the past adopted technology on a project by project basis leading to scandalous mismatching of gadgets. This project by project approach has been made even worse by corruption, where government officials would deliberately order unsuitable equipment and receive kick-backs from the suppliers, only for the nation to be stuck with expensive but useless orders (MEC report, 2002).

4.9   Terrestrial Television, Spectrum Planning and the Digital Switchover

Although the focus of the study is about DBM in general, the study also highlights issues about spectrum management. Observed is that television broadcasting is one of the most politically and socially sensitive applications in radio-communications (Rancy, *et. al.* 2011). Television uses a public state resource (frequency spectrum) for a purpose which relates to freedom of information and cultural diversity (Rancy, *et. al.* 2011). As a result the usage of frequency spectrum, were closely monitored by the state and as the demand for liberal broadcasting environments grew in response to the policy impact of liberalisation independent broadcasting regulators were also set up. Liberalisation brought about by the Structural Adjustment Prgrammes and the democratic wave of the 1990s, ushered in an interesting 21st century in terms of the information and communications sector in countries such as Zimbabwe (Chirume, 2005). The development of satellite technology and the bourgeoning internet led to an upsurge in the flow of information, resulting in strain on the channels of communication especially the analogue system whose inelasticity posed challenges to communication (Womersley, 2003).

The conversion to digital transmission marks the first fundamental change in television broadcasting since colour was added to the NTSC standard more than 40 years ago (Seel and Grant, 1997). As a scarce but vital resource to the economic, social and cultural aspects of our lives, radio frequencies demand prudent management measures for the communications sector to operate efficiently (ITU, 2013). Furthermore, spectrum planning and management is critical in ensuring that a balance is struck between political, commercial, cultural, national and local interests (Rancy, *et. al.* 2011).

The desire for additional spectrum in the information society is one known and indeed most acclaimed reason behind the epochal global transition (Hamel, 2009). Public policy in the field of spectrum allocation also exercises a powerful influence on broadcasting (Brown and Picard, 2005). Traditionally, governments used their power to assign spectrum as an auxiliary instrument for controlling the number and identity of broadcasters and other users of spectrum in their communities for overtly ideological and commercial reasons(ITU report, 2006). It is within the above context that spectrum management is viewed as a complex process with the varied functions in terms of the use of spectrum. It involves, putting in place the legal instruments and structures to monitor the use of spectrum at national and the global levels (Medeisis, 2009). When putting together a spectrum policy, there are several variables which should be considered as observed by the ITU, (2013). These include political issues, both national and international, the effect of spectrum use on society, economic impacts and the technical considerations (ITU, 2013).

The ITU observes that the political issues to spectrum management include access to global and national spectrum resources as all spectrum bands in use are known and have particular use (ITU, 2013). The political issues also involve sovereignty, culture and the 'preservation' of national identity which has been raised as one of the weak links to the digital drive in Africa (IMPI report, 2014). Lately also are issues of cut-throat crimes which are executed through ICTs as observed through the emerging discipline of 'economic intelligence'. Essentially, economic intelligence is about the wellbeing of national economies (Potter, 1998; Perkins, 2006)

Globally, radio frequency spectrum is freely available to whoever wants to use it, but as one uses an available portion of the spectrum, it is no longer available for other services without mutual interference (ITU, 2013). As a result, as users demand access, the scarce resource will be fully used. The demand for access to spectrum resource will inevitably increase as society moves through the 'information age', creating a need for ever more 'information bandwidth' (ITU, 2013). As observed earlier, this has led to the search for the ways and means by which additional spectrum can be farmed from available pipes. In this regard, control to the access of spectrum is linked also to the power to control much of the means of conveying information. From an economic viewpoint, effective spectrum management has been linked to the growth of the economy as it avails new opportunities for the expansion of a country's economy. After all, as observed by Duncan, additional spectrum space can be sold on the stock market for use in critical sectors of the country's economy (Duncan, 2012).

Terrestrial broadcasting uses significant parts of the frequency spectrum, mainly in the UHF band (470-862 MHz) and in the VHF band (173-230 MHz) (Rancy et. al. 2011). For many decades, this spectrum has been used throughout the world to deliver analogue television signals to homes, these signal; being broadcast by large networks of primary transmitters ('high power-high tower') and associated secondary transmitters towards roof-top, yagi antennas, and sometimes indoor antennas (Seel and Grant, 1997). As earlier observed, given the amount of spectrum available, this way of distributing television was limited to a few analogue programs (ibid.). Since the 1980s, it has been increasingly challenged by cable and satellite television, and more recently by ADSL and interact television (ibid.). All these alternative means deliver a much larger number of programs and as a consequence, the share of terrestrial television broadcasting has generally decreased (Rancy et. al., 2011).

Therefore, the transition of terrestrial television broadcasting from analogue to digital brings to the viewers a higher number of programs, better quality and new services such as high definition TV (HDTV). These issues are further discussed in chapter 6. DTTV therefore, represents a positive evolution for broadcasting (Seel and Grant, 1997). Additionally, it presents the advantage of necessitating a smaller amount of frequency spectrum (Cave, 2007).

Furthermore, the efficient use of spectrum has resulted in significant and rapid growth of national economies in the case of India and China (Prahalad, 2006). It also results in the globalisation of services and the integration of a country's economy to the economies of other countries (ibid.). As observed earlier, historically governments and later on broadcasting regulators, have been closely involved in planning the spectrum allocated to television broadcasting. In making frequency assignments, they authorised, individually, the frequencies and associated characteristics to be used by each broadcasting station, for example, where and how each television programme would be received by the public in every part of the country. This approach was meant to ensure that an appropriate balance was struck between political, commercial, cultural, national and local interests. Quite notably, Onias Gumbo observes that there were also technical reasons for adopting such a centralised approach for managing spectrum allocated to broadcasting (Gumbo, 1996:8) some of the reasons as noted by Gumbo "include the large potential for interference of high power-high tower analogue transmitters. The analogue transmission on a specific frequency band, placed technical constraints on the use of other frequencies occupying other bands" (gumbo, 1996:8). As a result, of the above frequency planning for broadcasting has always been considered a multi-dimensional puzzle requiring a large amount of centralised effort in terms of management, if spectrum was to be used efficiently (ibid.). These difficulties are compounded in border

areas, where spectrum has to be shared between two or more countries and becomes even scarcer (Medeisis, 2009). In these areas, there is a need to ensure equitable, interference-free access to spectrum between the countries involved and to satisfy the wish of local populations to receive the television programs of the neighbouring countries (ibid.). By the domino effect of interference, the choice of frequencies in border areas also has an impact on other areas far from the borders (Rancy *et. al.* 2011). High power transmitters and antennas are tailor made for the particular set of frequencies which they use. Any change of frequency for any of the programs in one transmitting site is therefore costly and potentially disruptive on all programs transmitted from this particular site (ibid.). It has also implications on associated receiving installations in buildings, which need to be modified (ibid.).

For these reasons, a case-by-case cross-border coordination between neighbouring countries as new frequency requirements emerge cannot be used as a general solution to frequency planning of terrestrial broadcasting services (ITU, 2011). A well-established practice, in particular in Europe, Africa, Middle East countries, which form Region I of the ITU, has therefore been to conclude regional agreements ensuring equitable access to spectrum between the countries of the region by registering transmission rights on specific frequencies in specific locations or areas (ITU report, 2006). In signing these agreements, the administrations involved in the management of spectrum commit themselves to protect the use of these frequencies in other countries by not using frequencies other than those for which they have registered transmission rights, unless otherwise agreed through a procedure managed by the ITU (ibid.). The above is one major function of the *International Telecommunication Union (ITU)* and hence the Geneva 2006 (GE-06) agreements which culminated in the current migration framework.

The ITU Regional Radio communications Conference held in Geneva in 2006 (RRC-06) adopted the GE-06 agreement, which contains a plan (GE-06 Plan) and associated procedures for the implementation and the modification of this plan regarding the use of spectrum (ITU report, 2006) The GE-06 Plan achieved a situation of equitable access between 119 countries (118 from Region 1 of the ITU, and the Islamic Republic of Iran) in the VHF and UHF frequency bands (ibid). Each country party to the Agreement received a set of entries in the GE-06 Plan, which defines a right to use certain frequencies with certain characteristics within certain specified areas (called allotment areas) (Medeisis, 2009). In technical language, Rancy and associates observe that for reasons of continuity with previous agreements concluded in 1961 and 1989, the UHF frequency band has been divided into 50 channels of 8 MHz bandwidth, numbered from 21 to 69, and the VHF band has been divided into 8 channels of 7 MHz bandwidth, numbered from 5 to 12 (Rancy et. al., 2011). Typically, each country received rights of use on 7

channels for television in each allotment area in the UHF band and 1 channel in the VHF band (ibid.). To prevent interference, these channels differ from one allotment area to another. Using the latest digital technologies, this allows to broadcast, free of interference, about 80 standard definition television programs over the entire territory of each country contracting to the Agreement (ibid.).

It is worth noting that, at the time of RRC-06, many countries had established military mobile networks in channels 12 and 61 to 69. Several eastern European and central Asian countries also had established aeronautical radio-navigation systems in channels 42 to 69 (Rancy et. al., 2011). The constraints arising from the existence of these networks were taken into account to balance the amount of resources given to each country so as to establish equitable access (ibid.).The GE-06 Agreement contains a procedure which allows each country to implement any of its entries in the Plan in the form of transmitter stations located in the corresponding allotment area, in the corresponding channel, provided that a certain envelope of interference is not exceeded. This leaves a large flexibility to each country to select transmit sites and their characteristics (ibid.). This flexibility is obtained at the cost of a lesser spectrum efficiency compared with a situation where all the transmit sites would have been decided upfront (ibid.). The GE-06 Agreement also contains a procedure which allows each country to modify the GE-06 Plan to obtain more rights, for example by extending allotment areas or interference envelopes, or by using channels in addition to those agreed at RRC-06 (Cave, 2007). This procedure requires the agreement of all neighbours within a relatively conservative distance, which is designed to permit administrations to negotiate such additional resources in a mutually satisfactory way, i.e. maintaining overall equitable access (ibid.). Finally, the GE-06 Agreement specifies that analogue television transmissions in UHF and VHF bands will no longer be recognized after 17 June 2015, (with exceptions for several countries until 2020 in the VHF band only) (ibid.).

 In contrast, the management of spectrum allocated to the mobile service does not require such detailed involvement by regulators or governments as a mobile cellular network typically involves tens of thousands of base stations and its frequency plan is readjusted routinely as new stations are introduced, without impact on users (ibid.). In border areas, the relatively small power radiated by the base stations for mobile phone makes cross-border interference a local issue, generally dealt with by the regular frequency coordination meetings between neighbouring countries, without the need for multi-lateral a priori planning (ibid.). Consequently, mobile operators are generally authorised to operate nation-wide within a given frequency band that is not shared with any other operator and to use that part of the spectrum under some general conditions without involvement of the regulator or government (ibid.).

4.10   The Zimbabwe National Frequency Plan

Access to broadcast spectrum is a prerequisite for the delivery of radio, television, telecommunications, mobile phone and microwave among other critical services (Hallet and Hintz 2010). As a result, the availability of suitable frequencies is often restricted because of wider demand for such resources as stated earlier in chapter 1. Therefore, to ensure balance in the effective use of spectrum among several competing service providers, there is need to manage spectrum effectively (Medeisis, 2009). As highlighted in Chapter 1, spectrum management relates to the measures and policies put in place for the allocation of electro-magnetic spectrum or bandwidths for effective communication ((sound, image, photo, PDF files) Ibagere, 2010). In the USA context, Powell observes that spectrum management and policies are functions that go beyond the oversight of the Federation Communications Commission (FCC) and its initiatives in the broadband, competition rules, and media regulation to involve state departments such as homeland security (Powell, 2002).

Spectrum management is a function that strives to maximise the benefits offered by spectrum-based services (Powell, 2002). In this regard, spectrum has to be managed due to the many uses it performs in society (Medeisis, 2009). Spectrum management is relatively a new field in small countries such as Zimbabwe. The wave of mobile phones in Africa saw the serious establishment of telecommunications units such as Potraz (Ibagere, 2010). When it comes to the administration of radio frequencies in broadcasting in Zimbabwe, a special memorandum of understanding exists between Potraz and BAZ (BAZ report, 2003). However, radio frequencies in various sectors are ordinarily a domain of Potraz. Such sectors, in which Potraz allocates frequencies, include the military, aviation, medical, police and other sectors.

Negotiating the Digital Dividend with Neighbouring Countries

WRC-07 established an international framework which allows each country to decide, whether to continue its use of the upper UHF band by television broadcasting or military applications, or to use for mobile services. The only condition to implement this national decision is that neighbouring countries agree, which requires international negotiations. International and domestic pressures to make spectrum available to the mobile service as permitted by WRC-07 can be expected to grow in coming years, if anything as a result of the remarkable growth of mobile data services and its positive impact on economic and social development, in particular in developing countries. This evolution can be expected to facilitate the above negotiations, especially where it is also formalized at regional level, as exampled in the previous Section.

GE-06 Agreement established the international framework applicable to 119 countries for the use of the UHF band by television broadcasting. Although this agreement in not applicable to all countries, many elements of the discussions currently in progress between countries contracting to this agreement may be of use for other countries. The GE-06 Agreement contains a procedure to modify the GE-06 Plan. For a modification to be recorded in the Plan, this procedure, which is routinely applied, requires the agreement of all affected countries. This agreement may be obtained by bilateral and multilateral discussions. Renegotiating the GE-06 Plan therefore does not require renegotiating the GE-06 Agreement. In Europe, the corresponding negotiations started in 2008, with multilateral discussions held within two groups: eight countries around Belgium (WEDDIP group, for Western European Digital Dividend Implementation Platform), created in May 2009, and 9 countries around Germany (NEDDIF group, for North-Eastern Digital Dividend Implementation Forum), created in October 2010. At the end of this process, the GE-06 Plan will be modified using the above procedure, hence the target frequency plan will be the GE-06 Plan. The objective of these negotiations is to restore equitable access among broadcasting transmissions (typically 7 channels per geographical area) in a band limited to 470-790 MHz, and to distribute equitably any additional capacities among countries. Obviously, this process will require a more intensive use of the spectrum used by broadcasting. Such a change requires acceptance of more technical constraints to either accept more interference in certain areas and/or to limit the interference produced in those areas. Technical solutions involve reducing transmit power, shaping and tilting transmit antennas to reduce power in certain directions, increasing the use of SFNs to consume less spectrum' and creating new transmitting sites to offset interference.

The Discourses of Spectrum Management in Zimbabwe

A comprehensive national frequency plan for Zimbabwe exists (POTRAZ, 2014). The first such ever plan for the country was launched in 2014 by the Potraz (POTRAZ, 2014). The creation of Potraz came about as a result of the commercialisation of *NET - ONE* in 2000. The moves to commercialise public entities such as *NET - ONE and* ZBC among others, were in line with the neoliberal ideology underpinning the SAPs programmes (Chirume, 2005). As observed the neoliberal ideology was promoted in the USA by Ronald Reagan and in Britain by Margret Thatcher in the 1980s (Adam, 2006). Neoliberalism saw the waning of the public service model and thus advocated for the commercialisation of public entities as a half way measure towards privatisation (Ake, 2005). It is within this context, that some public silverware such as ZBC and NET - ONE among others were commercialised. In southern Africa the moves to liberalise the information and communications sector were promoted by organisations such as the Media Institute of Southern Africa

(MISA), which engendered the spirit of a free press and pressurised states within the region to deregulate and liberalise the airwaves (Chirume 2005).

Observed is that liberalisation was multipronged as it sought change in the way lives in Africa were conducted (Chirume 2005). At the business level, the idea was to roll back the state and replace it with the invisible hand of market forces (Adam, 2006). At the legal level, the idea was to advocate deregulation to ensure the opening up of markets for easy penetration by the big media of the industrialised North (Chirume 2005). At the political level, sought to rid Africa of the vestiges of communism, one party state and dictatorship and most importantly realign the region to capitalism (Ake, 2005) the reason for the realignment had been prompted by the reality that most of the liberation wars in the region had been prosecuted on the values of socialism and communism (Ake, 2005). Therefore it stands to reason that there was a misalignment between the values within most of the region's leadership and the global influences of liberalism.

Turning to the country's spectrum plan although, it would have been ideal to attach the plan as an appendix but since the plan is too long this could not be done. However suffice it to say that the Zimbabwe national frequency plan is divided into the spectrum range (9 kHz-3000GHz) and a number of frequency bands. The plan specifies the general purposes and conditions under which the bands may be used to support a wide range of business, personal, industrial, scientific, medical research and cultural activities for both public and private (POTRAZ, 2014). The Zimbabwe National Frequency Plan, provides the allotment procedures for available frequencies with permissible levels of interference among radio communication services, among stations within each service. This ensures the efficient utilisation of the radio frequency spectrum (POTRAZ, 2014). As observed and from an institutional framework, the management of spectrum and its usage is a complicated matter as it falls under different institutions whose interests and mandate may not necessarily be the same.

Fig. 4.4:   institutional structure for spectrum management:

Institutional structure for SM

(Status 2008)

Government of Zimbabwe

Ministry of Information and Publicity

Ministry of Information and Communication Technologies

Broadcasting Authority of Zimbabwe (BAZ)

MoU

Postal and Telecommunications Regulatory Authority (POTRAZ)

Broadcasting users: Broadcasting Corporation of Zimbabwe

Non-civil users of radio spectrum

Civil users of radio spectrum

Authorised dealers of equipment

16

Source Medeisis, 2009

Whilst spectrum management is an important issue, Zimbabwe is faced with challenges to ensure that the efficient issue of this vital resource in communication is met. As observed by Medeisis, Zimbabwe currently lacks the human, financial and technical capacity to ensure the effective management of spectrum. This results in unnecessary interference in the transmission of signals in different sectors. The SABC channels for a long time became the defacto 'national channels' for Zimbabwe until they were withdrawn in December 2013. Cross-border frequencies in the mobile sector are rampant.

The Spectrum Environment and the Global Allocation Patterns

From the statics provided by the ITU, it can be deduced that growth in terms of new license stands at 7% annually (ITU, 2013). Also since the 1970s, it is critical to observe that the industry has seen the issuance of 1.3 million licences (Ibid). Of all the allocations, major new allocations have occurred in

- radio local network (LAN)

- personal communications services (PCS)

- digital radio broadcasting (DRB)

- wireless local access

- high definition television

Although highlighted earlier, radio spectrum is increasingly critical in radio and television, microwave and satellite, mobile radio, taxi, courier, trucking, cellular, paging, safety and security services, aviation, arc welders, plastic sealers, gluing machines, energy, pipeline control, health, heart monitors, cordless telephones and garage door openers (ITU, 2013).

Fig 4.5: the organogramme for POTRAZ:
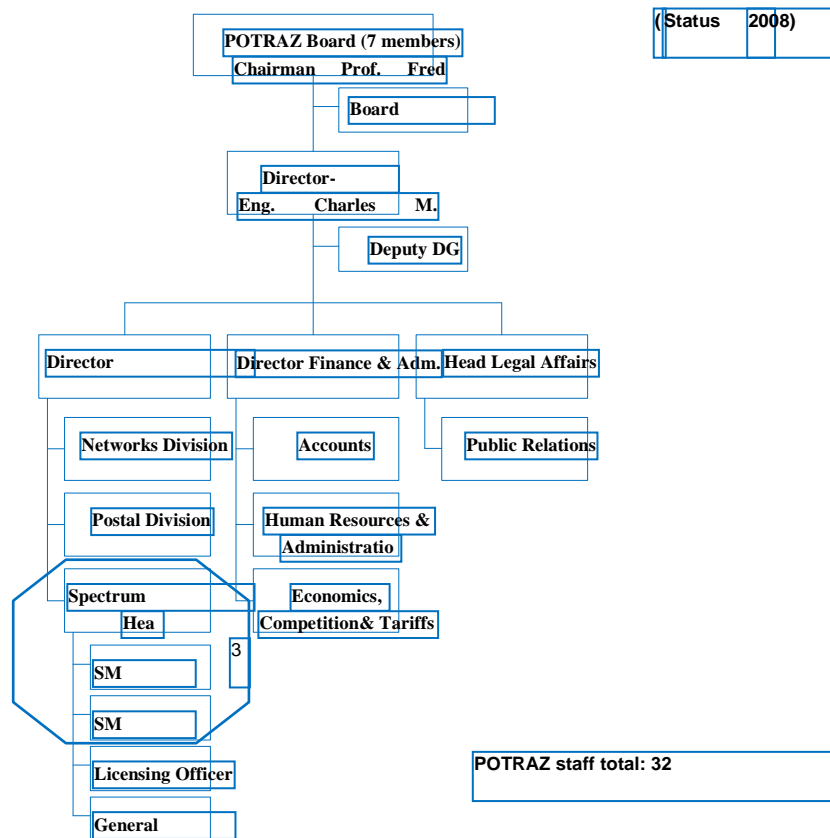
Source Medeisis, 2009

4.11   Chapter Summary and Conclusion

Chapter 3 evaluated literature on the aspects of DBM. Most importantly the present chapter traced the philosophical roots of DBM back to the turbulent history of the 70s to date. It clarified the key technical issues involved in the transition. Furthermore, the present chapter outlined and discussed the history of

broadcasting from a global perspective as a precursor to the investigation of broadcasting at the national level in Chapter 4. The chapter also explored spectrum management focusing on some of the trends regarding the phenomenon. This chapter reviewed literature on DBM. The next chapter evaluates literature, focusing on the history of broadcasting in Zimbabwe since inception in 1933.

CHAPTER 5

PRECEDENT STUDIES: THE HISTORY OF BROADCASTING IN ZIMBABWE

5.0   Setting the stage

The previous chapter outlined and discussed some of the technical issues involved in the study. Chapter 4 also traced the history of broadcasting from a global perspective. It is clear that the United Kingdom (UK) and United States of America (USA) have a rich history of broadcasting spanning varying layers of epistemological positions (Krasnow and Longley, 1978). Notably, it is from the two spots (Britain and the United States of America), that the world derives the public, the private and the commercial broadcasting systems respectively.

As the liberal democratic dispensation of the 1990s began to flourish, the public broadcasting systems, largely state controlled, began to experience fissures across Africa as people began to demand for the opening up of the broadcasting sector (MISA report, 2005). Both colonial and post-colonial broadcasting in Africa has been viewed as a strategic centre to be controlled by the state, what in economics could be described as 'public goods.' However, with the wave of liberal democracy taking root in Africa there has been wholesale attack on the public broadcasting system in Africa for two reasons (Ndela, 2007). The first is the need to engender plurality in terms of the voices contributing to democracy by increasing the number of broadcasting channels from the one channel operated by the state (Metcalf, *et. al.*, 2003). The second is the need to roll back the influence of the state in the sector, in line with the values of liberal democracy which demands free broadcasting which could not be interfered with by the state where commercial and privately-owned broadcasting stations are allowed to compete for space with the entrenched public systems (Ndela, 2009).   As a result monopolies in the sector can no longer be permitted (Ndela, 2009). Monopolies do not auger well with liberal politics and even business. Quite notably, with abundant spectrum harnessed through digitisation, the broadcasting sector has entered a phase of 'uncontrollable change' (Seel and Grant 1997). Also considered in chapter 4 are some of the technical issues related to DBM.

5.1   Introduction

The present chapter is concerned with the history of broadcasting in Zimbabwe. In my view, however, a perceptive engagement with broadcasting in Zimbabwe can be achieved especially when contextualised within the drapery of the knowledge of the country's entire information and communications sector.

Although this would be exceedingly ambitious given the limited time to complete the study, an overview of the sector is attempted. Such an overview is only a precursor to the discussion of the history of broadcasting which is the chief reason behind the chapter. Since the research is mainly about the developments in the broadcasting sector in Zimbabwe, a brief history of the sector from humble beginnings in the 1930s is given below. A general discussion on broadcasting and its linkages with the information and communications industry in Zimbabwe is provided in the present chapter.

Broadcasting in the Zimbabwe traced its humble beginnings to other sectors of the information and communications industry, such as telecommunications, aviation and railways (BAZ report, 2003). More often than not, the linkages with broadcasting with other sectors are taken for granted (Yeung and Hui, 2003). Therefore, in outlining and discussing the above issues, this study attempted an entire perturbation of DBM in Zimbabwe. Evaluated also in chapter 4 were the 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 study 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 (Nyahwedegwe, 2014). Despite being a late comer to broadcasting in the Southern African region, Namibia has since migrated to the digital platform (*The Herald* 9 July 2015).

The United States of America and British Broadcasting Experience

The legacy of the United State of America and the British to the broadcasting world of the world is critical as observed earlier. 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 (McQuail, 2005). The global international trajectory of broadcasting is critical to the understanding of the information communication environment in Africa since as observed

> The kind of information and communications sectors which emerged in many parts of Africa were in most cases determined by the colonising powers of individual countries. 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 broadcasting services in the colonies.

The USA, British Connection to Broadcasting

The public broadcast system traces roots to the British broadcasting system while those of the commercial and private radio are linked to the United States of America broadcasting tradition (Jane, 1983; Miller and Allen, 1995). In the case of the United States of America broadcasting is textured by a rich tapestry of capitalism upon which American values are anchored. Although globally, commercial and private broadcasting have become the focus of attention at the moment due to the new dynamics within broadcasting, the public broadcasting system up until now had been the dominant model in Africa (Ndlela, 2007). Some believe that public broadcasting in the African context is here to stay as it is deliberately protected by those who wield political power. (ibid.).

In the views of Sethunya Tshepho Mosime, the British were systematic in their introduction of broadcasting to their colonies in that a standing commission was put in place to oversee the implementation of broadcasting in Africa (Mosime, 2007:41-5). 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 (Mosime, 2007:41-5). 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 (Miller and Allen, 1995). The British Government had anticipated the rapid development of radio broadcasting as far back as 1900 (MacDonald and Barrie 1994). 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 (MacDonald and Barrie, 1994). This gave the British state powers to regulate and control broadcasting (BAZ report, 2003). Wireless operators were required to be licensed (ibid.). The Post Office had the authority over the issuing of broadcasting licenses (MacDonald and Barrie 1994). 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 (ibid.). Increased demand for radio programmes led to the British authorities to grant the Marconi Company permission to provide regular broadcasts (Miller and Allen, 1995). Marconi's first broadcast was on 14 February 1922 (MacDonald and Barrie, 1994). 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 (Mapanzure, 2000). The first general manager of the BBC, John Reith, advocated broadcasting as a public service with immense educational value (Reith 1924).

It is interesting to note that the British model of public broadcasting has had greater influence in Africa compared to alternative models (Mapanzure, 2000). The American model in broadcasting is commercially-driven as a result of the liberal ideology permeating the country's political and economic spheres (ibid.). From a political viewpoint, it would be interesting to find out why the privatisation of broadcasting has been faced with some challenges in Africa (Ndlela, 2007). Could the resistance to commercialisation and ultimately privatisation of broadcasting in Africa be linked to the nature of democracy on the continent? If so, what is the nature of democracy in Africa? These questions in the views of Nkhozi Ndlela have dominated debate on broadcasting in most African countries (Ndlela, 2007).

5.2   Information and Communications Sector in Zimbabwe: An Overview

Except for anecdotes and memos found in archives, material on the history of the information and the communications sector in Zimbabwe is difficult (Frederiske, 1990). Furthermore, the information and communication sector in Zimbabwe is so fluid so much that newspapers may pop-up overnight, only to disappear the following day. The internet continues to force changes on the sector daily presenting many opportunities and challenges. The lacuna in literature alluded to above is even worse regarding broadcasting in the country (Mudzengi *et. al.*, 2003). Generally, the paucity in literature in terms of the information and communications industry in Zimbabwe could be linked to the lack of scholarship in the area (Chirume, 2005). Although not unique to Zimbabwe, the paucity of literature on the information and communications sector in the country deserves attention in this research. Since it is imperative to discuss the overview of the information and communications sector in Zimbabwe, the issues about the lack of literature in the sector will be revisited. Comparatively young when compared to South Africa, Zimbabwe's information communications sector boasted of relatively vibrant and diversified media in terms of the size of the country, economy and nature of politics (IMPI report, 2014).

5.2.1 The Information and Communications Sector in Zimbabwe: A Sector by Sector Approach

Table 5.1: A highlight of the information and communications sector in Zimbabwe:

Type of Media House	No. Registered	No. Operating
National media services publishing newspapers and magazines	85	49
Local office of foreign media services	6	6
Advertising agencies	4	2
Production houses and media services	1	1
Media services in film and videos	6	3
Total	**102**	**61**

Source: IMPI report, 2014:50

The Newspaper Industry

In my view, a general understanding of the media sector in Zimbabwe helps in mapping developments in the broadcasting. Furthermore this approach is consistent with the broad approach of the study. At the time of this study Zimbabwe had six daily newspapers. These are *The Herald, the Chronicle, NewsDay, the Daily News, the H-Metro* and the *B-Metro*. There were also five weekly newspapers viz: *The Financial Gazette, the Zimbabwe Independent, the Standard* and *the Sunday Mail.* Of the weeklies, *The Financial Gazette* focuses on business and commercial issues. It was the only business and financial paper in the country although *The Herald* also has a daily section, *The Herald Business*, devoted to business issues. The ownership of the print media in Zimbabwe is skewed in favour of Zimbabwe Newspapers (ZIMPAPERS), which is a company controlled by the government as explained later. ZIMPAPERS has two social-scandal chasing tabloids, *H-Metro* in Harare and *B-Metro* in Bulawayo. ZIMPAPERS also publishes five weeklies: *The Sunday Mail* in Harare, *The Sunday News* in Bulawayo and *The Manica Post* in the eastern border city of Mutare. Two of the weekly newspaper *Kwayedza* and *Umthunywa* are published in vernacular Shona and Ndebele respectively. In addition, ZIMPAPERS has also launched an online publication *BH24* which focuses on business news.

Apart from the ZIMPAPERS, another publication company worthy of note in Zimbabwe is The Associated Newspapers of Zimbabwe (ANZ) that publishes the *Daily News* and *The Daily News on Sunday*. ANZ also has within its stable the *Weekend Post*. The shareholders of the ANZ are Meditation Investments (Pvt) Ltd,

Africa Media Investments, Diamond Insurance Company of Zimbabwe, Southern Life Association, ZB Life Assurance, NDM Investments (Pvt) Ltd, Batanai Capital Finance (Pvt) Ltd, Dr. Ali Mohamed and Judith Todd.

At the time of the study, the third company in the newspaper industry in Zimbabwe is Alpha Media Holdings (AMH) which owns two daily newspapers: *NewsDay* in Harare and *Southern Eye* in Bulawayo. The stable also has two weekly newspapers: *The Zimbabwe Independent* and *The Standard.* AMH is owned by Trevor Ncube through Vusumuzi Investments with 61% of the shareholding and 39% held by Media Development Investment Fund.

Another company in the newspaper industry in Zimbabwe is Modus Publications which owns *The Financial Gazette*. Over and above the companies highlighted above, there are also community newspapers in almost all provinces of Zimbabwe (IMPI report, 2014). The ownership of newspapers in Zimbabwe discourages foreign investment in the sector as AIPPA stipulates a 60:40 % ownership in favour of.

Magazines

Although relatively impressive for a small country such as Zimbabwe, the magazine industry in the country has scope for growth. The magazine industry is far from established when compared to South Africa. Not much exists in this sector except for the *Zim Travel*. The rest of the magazines are highly specialised and highly targeted in terms of readership. *ZimTravel* covers tourism. It falls under the ZIMPAPERS stable. There are a number of other specialised magazines such as *The Post* for the police, *The Air Force* for the Air Force of Zimbabwe, *The ZNA Magazine* for the Zimbabwe National Army. Specialised magazines for mining and telecommunications are also published under the auspices of the Ministry of Mines and POTRAZ respectively.

The Telecommunications, Courier Services and Mobile Phone Sector

In my view, this sector is the least researched subdivision of the information and communications sector yet it enables the other platforms in the sector such as broadcasting to function. Without telecommunications broadcasting would be difficult. Regarding the mobile sector, Zimbabwe has one fixed and three mobile phone companies. These are: TelOne, Econet Wireless, Telecel and Net - One. TelOne supplies the country's only fixed phone services. Both TelOne and Net - One are government-controlled while Econet and Telecel are privately-owned (Rutsito, *The Herald*, 2014).

Since the inception of mobile phones in the 1990s, there was demand for increased mobile services in Zimbabwe as pressure for the services was mounting by the day. In my view, the mobile phone in Zimbabwe has de facto 'replaced' the fixed phone and the earliest and popular form of communication, the 'letter' as the 'primary' source of communication (*The Herald*, 2014). Indeed, given the technical limitations of landlines that require heavy initial capital outlays in terms, of infrastructure, the mobile phone sector has proved dependable and favourable in Africa.

With the country's huge Diaspora component in South Africa, England, America and Australia among other countries, the mobile phone in Zimbabwe has become the central technology for communications between Zimbabweans abroad and those at home (*The Herald, 2014*). The mobile phone in Zimbabwe has also become the main medium through which those abroad have moved money to their relatives at home. Against this back-cloth, it is hoped that with more spectrum availed by DBM, the mobile sector in Zimbabwe is likely to expand further. The Media Ethics Commission report, one of the most authoritative sources of information on media in Zimbabwe, asserts that the country's media traces roots to the country's history of colonisation (MEC report, 2002).Therefore, the information and communications sector in Africa can be understood against the backdrop of the history of Northern intervention in African Affairs (MEC report, 2002). The tenuous history of Zimbabwe's broadcasting sector will be presented a little later.

New Media in Zimbabwe

Although a nation of 14 million people, Zimbabwe boasts of a vibrant internet-based media which in modern parlance is referred to as 'new media' (IMPI report, 2014). An interesting problemitisation of 'new media' by Chun and Keenan is their assessment of new media where they assert that the concept 'new' in the so-called 'new media' is problematic as to be new is to be peculiar to the world that has become picture" (Chun and Keenan, 2006:1 quoting Martin Heidegger). Furthermore, Chun and Keenan, (2006) quoting Michel Foucault, observe that "emergence is always produced through a particular stage of forces" (Chun and Keenan, 2006:1)

The Film Industry

There is no recognisable film industry in Zimbabwe (IMPI report, 2014). This situation is as a result of the capital intensive implications of the costs of production of a film (Vambe, 2001). For instance, a simple 90-minute film requires US$50,000 to produce (Vambe, 2001). This translates to over ZAR500,000 at the current exchange rate.

Defined, a film can be viewed as technology, social force or economic institution in its own right (Vambe, 2001). The desire by African film makers of the digital age is to use film to create consciousness of freedom among Africans (Ukadike, 1994). Paradoxically, this objective is borne of the continent's experiences with colonialism (Mackenzie, 1984; Ukadike, 1994). During colonialism, the film had been used strategically to control people. Therefore, in the iconography of the film industry in Africa in general and Zimbabwe in particular, the emergence of African films in the fifties was a derivative response to colonial film models of what was termed 'African film aesthetics' (Vambe, 2001).

In the 1980s the Zimbabwean government poured in millions of dollars into the production of the Hollywood-based "King Solomon's Mines" as an attempt to create a film industry for the country. This experimentation was a monumental flop and a huge drain on the fiscus as Zimbabwe did not realise much from the production. Since then, the film industry in Zimbabwe has been dominated by donors whose productions are not consistent and are criticised for being shallow in terms of themes (Vambe, 2001). Over the years, the creative industry was to be sustained through donor funding, until donors pulled out of the country at the height of the country's 'fast track land reform' programme. Since then there has been a void in the country's film industry. There is need for the creation of a film commission or national film body responsible for the sector in terms of training, funding and distribution among other things. Such a body also will be charged with the function of advising government on the issues highlighted above (IMPI report, 2014).

Zimbabwe's film sector is not as developed as that of South Africa. However, having launched a film school in 2011, the base for critical skills in the sector in Zimbabwe is developing. In terms, of courier services Zimbabwe has one local postal agency, the Zimbabwe Postal Services, ZIMPOST. There are two major international courier services namely, DHL and FEDEX. Although they are many players in the internet services sector Zimbabwe has two major internet providers. These are the Government Telecommunications Authority (GTA) and the Zimbabwe Online (ZOL). GTA is government-owned and provides internet services for government. ZOL is privately owned. Cable technology is being provided by *NET - ONE* and LIQUID, a privately owned company. With substantial investment having been made in this sector since the drive to digitise took an upward turn, there is now potential for cable television in Zimbabwe leading to a convergence of technologies where everything is possible (TRANSMEDIA, 2014).

5.3 Broadcasting: A General View

> From the beginning, controversy about broadcasting has been dominated by a strong and almost universally held belief in its immense potentialities as a means of influencing, or possibly even controlling or directing public opinion. This belief rests on a single manifest truth that broadcasting makes it possible for one man to address an audience of millions

Gumbo 1996:1

In the above views broadcasting is an effective tool for manufacturing consent. 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 (Seel and Grant, 1997; Golding, 2008).

> Broadcasting is a mirror of the way we live. By this I mean that forces at work in politics and society are bound to be reflected not just in the output – the programmes - but in the structure and the aspirations of broadcasting organisations in a country

In this study, the impact of the developments in broadcasting technology on the entire information and communications sector has been referred to as the broader approach. As argued in the rationale of the study, if this broader approach to DBM is to be understood fully, there is need to depart from the focus on television as the only component affected by DBM (Cave and Nakamura, 2006). This understanding is lacking. In other countries, attention on DBM has emphasised the benefits on the other sectors of the economy apart from television (Berger, 2012). As a result, in South Africa, the shift in DBM studies is now on the programme's impact on growing the economy and the financial prospects thereof (Cogburn and Nyaki, 2001). It is under such a broader context that the importance of the digital switchover in broadcasting can be fully appreciated and even yield deeper understanding (Medeisis, 2009).

Toward the Definition of Broadcasting

Until as recent as the 1990s, broadcasting had been mainly a matter of transferring sound or video streams through the airwaves or in some developed countries, through cable as well (Seel and Grant, 1997). As a concept, broadcasting involves the electronic transmission of radio and television signals designed for public consumption (BAZ report, 2003).

However, due to the technological changes that have occurred in the sector, broadcasting is no longer a matter of mass consumption (Golding, 2008). It is increasingly becoming more and more personalised (Golding, 2008). Generally, in the past, broadcast systems delivered a wide range of educational,

informational and entertainment programming to viewers and listeners (BAZ, 2003; see also Seel and Grant, 1997). In the digital age, individuals have more control in terms of consumption of media products (Carr, 2008).

The History of Broadcasting in Zimbabwe

In order to have an understanding of broadcasting in Zimbabwe, it is imperative to examine the environment within which the sector has developed in the country. It is also rewarding to bear in mind that developments in the sector at the global level, cascaded to the national level through the regulative framework provided by the ITU (Medeisis, 2009).

The history of broadcasting in Zimbabwe reflects an apparent information gap in the sector. The lacuna of information is not only in terms of the broadcasting sector but other sectors of the country as well (Chirume, 2005). There is generally lack of literature on the history in the country. Bemoaning this 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 (*The Herald*, 2009). Concerning broadcasting, observations are that until 2003, when BAZ conducted a national survey on the state of broadcasting in Zimbabwe, there was virtually nothing one could refer to in terms of documented accounts. The trajectory of broadcasting in Zimbabwe in the context of global developments is something that this study investigated. The roles of ITU within whose purview issues of broadcasting fall, was also discussed.

From humble beginnings to digital: The trajectory of broadcasting in Zimbabwe

As is the case with the history of broadcasting in the in United States of America and elsewhere, broadcasting in Zimbabwe also started at amateur level, although for the case of Zimbabwe this occurred much later than in the United States of America (BAZ report, 2003). In this respect, it would appear that developments in broadcasting are cyclical. Exactly 8 years after the inception of broadcasting in Zimbabwe in 1941, professional broadcasting followed (Mlambo, 2002).

In 1933, the Imperial Airways of Southern Rhodesia installed a radio transmitter in Belvedere, in the then Salisbury, now Harare, near the country's Meteorological offices (BAZ report, 2003). 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 would occasionally fly into the country linking England, South Africa and Zimbabwe

(Mlambo, 2002). Having realised the potential to broadcast using this same transmitter, three engineers employed by the Post Office stationed to announce the weather updates at the meteorological offices, sought permission to broadcast during leisure time, which was promptly granted (Mlambo, 2002; BAZ report, 2003). Such were the humble beginnings of broadcasting in the country. The story of a transmitter established for providing weather updates for the aviation industry became the basis for broadcasting in the country. The linkage between aviation and broadcasting in Zimbabwe is critical as it demonstrates the broadness of broadcasting in terms of linkages with other sectors. In this regard, the linkages of broadcasting to aviation and telecommunications, is something that should excite researchers as it has not been explored in detail at least from an African perspective.

As this background reveals, broadcasting in Zimbabwe was started for whiling up time by adventurous engineers. It was from this that the three engineers from the meteorological department realised the potential to broadcast using the same transmitter from aviation during leisure time. 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 1933 experiment had provided the country with a radio service that the people could relate to in terms of issues pertaining to their immediate lives.

During the early years of broadcasting, emphasis was on signal strength than quality of programme content (BAZ report, 2003). Within a space of four years following the inception of broadcasting 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 (Mlambo, 2002). In Harare, the first broadcasting studios were built at the post office along Manica Road in 1940, and upon their commissioning, a full time professional broadcaster was employed (BAZ report, 2003). 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 (ibid.). In 1941, an additional radio station was established in Northern Rhodesia, now Zambia (ibid.). This radio station became the focal point for broadcasting to the entire Federation covering Southern Rhodesia, Northern Rhodesia and Nyasaland, today Malawi (Mlambo, 2002).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 (BAZ report, 2003). Section 27, of the Rhodesia Broadcasting Act, conferred upon the RBC the sole right to broadcast in the country (ibid.). 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 (BAZ report, 2003). 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 (ibid.). Later as broadcasting expanded in the country, Montrose Studios in Bulawayo were commissioned to air out programmes from Bulawayo (Mapanzure, 2000).

5.4   Broadcasting in Zimbabwe: The Demand for New Directions

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 how to proceed with the restructuring of broadcasting in the country (Chari *et. al.*, 2003). The BBC recommended the establishment of four radio stations, one national television station and a second television channel (Chari *et. al*., 2003). Regarding television, only one television was established whilst for radio at least four radio stations were created as depicted in **table 5.2** below:

Table 5.2: Zimbabwe Radio Stations

Name of Station	Language(s) in which broadcasting was done
Radio One	English
Radio Two	Shona and Ndebele
Radio Three	Mainly English and also Shona and Ndebele
Radio Four	Mainly educational station, broadcasting in Shona, Ndebele and other mi nority languages in Zimbabwe such as Tonga

Source: developed for study

The new Zimbabwean government was also encouraged to provide transmitter stations in those areas neglected by the colonial regime (BAZ report, 2003). Today, 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 (ibid.). Since, 1980, Zimbabwe established at least twenty-four repeater sites for terrestrial frequencies (ibid.). These transmitters cater for both radio and television services (ibid.). Today even these transmitters were far inadequate (*The Herald*,

2015). 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 (BAZ, 2003). These sites were located in Harare, Bulawayo, Gweru, Rutenga, Kadoma, Mutorashanga, Chivhu and Masvingo (ibid.). Furthermore, there are other sites that are providing one to three radio services out of the six radios stations the country now has (ibid.). 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 licenced recently use digital signals for their broadcasts (Mukotekwa, 2014). As a result this has presented a challenge for TRANSMEDIA, the signal carrier which also 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 (BAZ, 2003). Other sites may have problems relating to poor signal feed from the source (BAZ, 2003).There are also some sites that are not providing any radio service at all (BAZ, 2003). These are Plumtree, Mudzi, St. Albert's Mission, Kariba, Victoria Falls and Beitbridge (BAZ, 2003). Four of these sites are actually not equipped to provide the service and these are Plumtree, Mudzi, Kariba and St. Albert's (BAZ, 2003).

Broadcasting The1990s to Date: The Impact of Economic Structural Adjustment Programme (ESAP)

This period in the history of the media in Zimbabwe is quite eventful as observed earlier. 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 broadcasting in Zimbabwe was run, at least in principle (Gumbo, 1996). ESAP had far reaching implications on broadcasting in terms of technology, regulatory framework, customer tastes, expectations, funding, institutional capacity and the nature and extent of competition than hitherto contemplated (ibid.). On regulation, liberalisation saw the desire for broadcasting among independent operators growing (ibid.). Even opposition political parties and the civil society in Zimbabwe also joined the battle for opening up the airwaves as it was popularly known (MISA, 2013). 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 (Chirume, 2005).

On the technological front, liberalisation resulted in Zimbabwe, like many African countries, seeing new satellite technologies becoming available to broadcasters through PanAmSat and Intelsat (Gumbo, 1996). 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 revolutionised the industry (Gumbo, 1996).

Through hindsight, however, despite the pressure to open up media and broadcasting in Zimbabwe, the media in the country has remained pretty the same as before the country's independence (MISA, 2005). 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 (Gumbo, 1996). Gumbo actually hopes that Zimbabwe will eventually act in a manner consistent with global trends (ibid.). 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 (Nyahwedegwe, 2014). 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 (ibid.). 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 (ibid.).

The *Voice of Zimbabwe*, which broadcasts from Gweru in Midlands, commenced operation in 2007 (Nyahwedegwe, 2014). 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 (ibid.). 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" (ibid). 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 polarised media grows (MEC, 2002). 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 (MISA report, 2013). 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 (ibid.).

Star FM is the first private radio to rock the airwaves in Zimbabwe (Mukotekwa, 2014). 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 (ibid.). This development signifies a milestone within the tenuous history of broadcasting in Zimbabwe since 1933 (ibid.). 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 (ibid.).*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 digitise the signal career system for it to remain relevant to the current broadcasting dispensation (BAZ report, 2003).

Table 5.3: Represents the current configuration of the radio industry in Zimbabwe:

Name of Station	Ownership	Language of Broadcast
Spot FM	Government controlled (ZBC)	English
Radio Zimbabwe	Government controlled (ZBC)	Shona and Ndebele
Power FM	Government controlled (ZBC)	English, Shona and Ndebele
National FM	Government controlled (ZBC)	Local languages especially minority languages
***Zi* FM**	Privately owned (Mighty Movies)	English, Shona and Ndebele
Star FM	Privately owned by ZIMPAPERS	English, Shona and Ndebele

Source: Developed for the study

The services for these radios are mainly provided in the Frequency Modulation (FM) broadcasting (BAZ, 2003). 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 (ibid.). There are other radio broadcasting services that reach some parts of the country from outside Zimbabwe in the FM, Low Wave, Medium Wave, Short Wave and satellite bands (BAZ, 2003). 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 (BAZ, 2003). 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 (BAZ, 2003). 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 (Potraz,2014).

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 (BAZ, 2003).

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.

Data Casting

A broadband data casting service is provided by the signal carrier, Transmedia, in Harare and Bulawayo (Transmedia, 2013). This service provides international access or other data communication services, making use of broadcasting services bands (ibid.).

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 broadcasting stations around the world (Chirume, 2005). 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 (Chirume, 2005). Jackson had 'invaded' the Zimbabwean airwaves as he had started broadcasting as Capitol Radio without authority from the state (MISA, 2001). 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 (Chirume, 2005). 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 (Chari *et. al.*, 2003). This would lead to chaos in the sector (BAZ, 2003). Government had to resort to the Presidential Powers (Temporary Measures Act, chapter 10:20), in order to contain this legal quandary, (Ongeso, 2002 quoted in Chirume 2005).

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 (Mazango, 1990). 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.).

The Technological Findings on Broadcasting in Zimbabwe: BAZ Report

The survey observed that broadcasting of both radio and television was erratic and in some cases it did not even reach the other parts of the country owing to several reasons. These are the technical limitations of terrestrial frequencies as highlighted before, inadequate repeater boosters, malfunctioning boosters and lack of adequate power for the repeater stations, among other things.

The capacity coverage for television at its peak is about a 60 kilometre radius around the country's big cities such as Harare and Bulawayo (Mudzengi *et. al.*, 2003). This has seen the majority of Zimbabweans without television. For radio, the coverage is about 60 percent of the country (ibid.). This leaves 40 percent of the nation without radio services. As a result, most Zimbabweans used to rely on the South African free to air SABC channels before they were switched off in December 2013.

5.5　Chapter Summary and Conclusion

The chapter presented a general outline of the structure of the media. Since the research is about developments in the broadcasting sector in the country, the chapter evaluated precedent studies regarding the history of broadcasting in Zimbabwe. The chapter marked a departure from previous chapters examining the global view to broadcasting. However, it should be observed that it is from the above quality regarding DBM that broadcasting at national level derive linkages with the global environment. The chapter marked the end of literature review. The following chapter presents the study's methodology through which the views used to complete the study were achieved.

CHAPTER 6

NEGOTIATING GATEKEEPING POWER AND THE RESEARCH PRACTICE: METHODOLOGIES AND METHODS OF RESEARCHING ZIMBABWE'S TRANSITION TO DIGITAL BROADCASTING

6.0   Preamble

Referring to the state of the 'universe of knowledge' Sir Karl Popper once remarked:

> Our ignorance is sobering and boundless. Indeed, it is precisely the staggering progress of the natural sciences, which constantly opens our eyes anew to our ignorance, even in the field of natural sciences themselves. This gives a new twist to the Socratic idea of ignorance. With each step forward, with each problem which we solve, we not only discover new and unresolved problems, but we also discover that where we believed that we were standing on firm and safe ground, all things are, in truth, insecure and in a state of flux.

Popper (1902-1994)

Fig 6.1: The universe of knowledge in society:
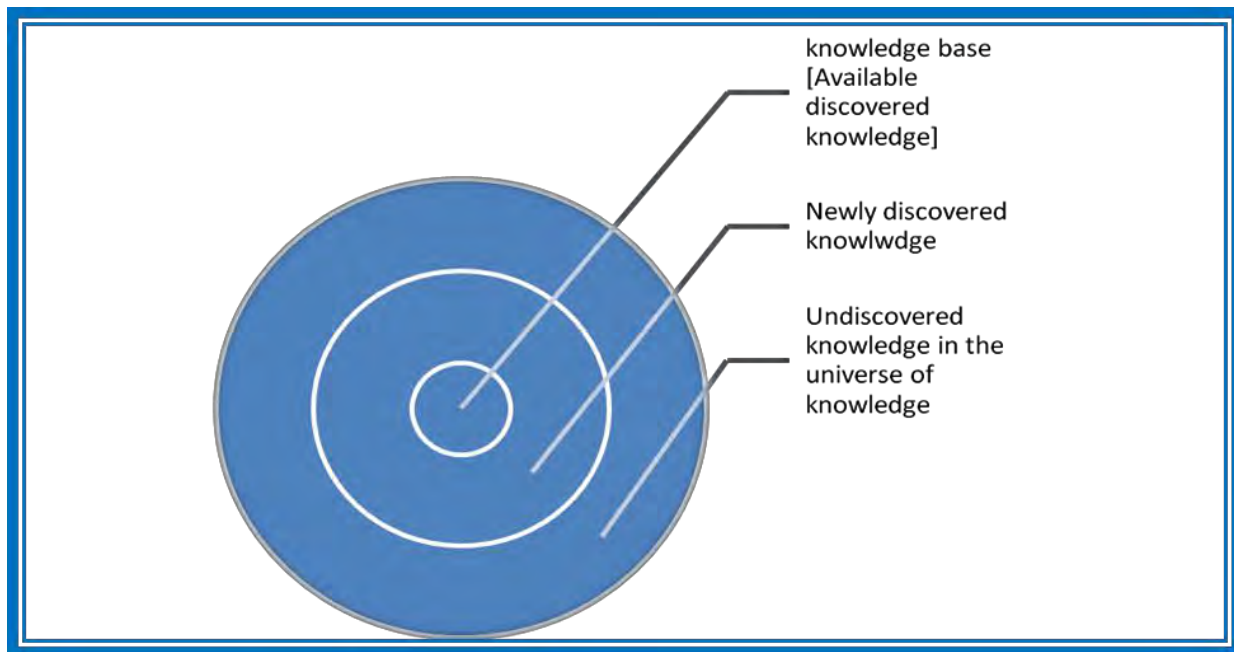
Source: Research Methods module: SHCM453 (ZOU, 2014)

A perceptive and detailed model of the state of the universe of knowledge will be presented later. It is from the universe of knowledge that researchers draw gaps about what needs to be known regarding society (Chirimuuta *et. al*., 2014).

6.1   Introduction

Underlying the quest for knowledge is at least one philosophical problem in which all thinking 'men' and 'women' are interested which is the problem of understanding the world in which humans live; and thus ourselves who are part of that world (Miller, 2013; Bordens and Abott, 2008). Quoting from Aristotle Anassis, Gift Kalisto Machengete noted that a researcher has advantage over others as the secret to success in life is the possession of knowledge, which others do not have (Machengete, 2014:2). This possession of knowledge which others do not have, is what makes intelligence and related fields such as politics, economics and marketing flourish. In other words, knowledge allows one, an urge over others. This is otherwise known in the views of Potter, (1998) as 'competitive advantage' in marketing; and in the case of politics, Quiggin, (2007) observes that strategists depend on timely intelligence to succeed.

The above principle about knowledge and its importance to life is first set out in the Bible, in which God observes that my people perish because of lack of knowledge (Hosea 4 verse 6). The above views serves to underscore the fact that knowledge is a key ingredient of life. Therefore, in the light of the above explanations and also given its epistemic function in terms of knowledge creation, research should play a pivotal role in our lives. Chapter 2 explored the lenses through which issues to the study were to be understood. In the same breath, Chapters 3, 4 and 5 reviewed literature, emphasising the different aspects of the digital broadcasting migration. Notably, among the issues covered in literature were the imperatives of DBM and an overview of the media in Zimbabwe, broadcasting history of the country and the strategic issues of spectrum management.

From a methodological viewpoint, the refinement of this study was a continuous process from the conception of the ideas that gave birth to the study, right through the painstaking and demanding process of putting together the data from fieldwork to the submission of the study. Essentially, this meant that the research design, the study's approach and values in terms of the philosophical research assumptions, such as ontology, epistemology and methodology were constantly reviewed, in line with the changes to the strategies used for data collection, analysis and interpretation of the findings of the research. Technically, the research's theoretical and physical parameters as outlined in the rationale of the study in Chapter 3 are referred to as the 'delimitation' of study (Blaxter *et. al.*, 2006). Also the gaps which were identified in Chapters 2, 3, 4and 5 regarding the study's aims and objectives as set out at the beginning of the study, are critical to the considerations of the methodology of the study.

6.2   Research Taxonomy Design Research Design

Taxonomy and design are key concepts in research (Ulrich 2011; Chirume, 2012). In research, taxonomy simply relates to form or type of a research (Mouton, 2009; Ulrich, 2011). Therefore, research can take any form that is case study, literature review, hermeneutics, descriptive and ethnography among others (Cavana *et. al.,* 2000). Each, research taxonomy has characteristics which are peculiar to its form (Cresswell, 2009). Notably, another concept that is linked to taxonomy in terms of purpose is research 'design' Erasmus Chirume, (2008).

Research design denotes "a plan of data collection and analysis procedure in order to answer a research question or questions" (Marshall and Rossman, 1999; Creswell, 2007; Chirume, 2008). Therefore, in my view a research design can be interpreted as a proverbial 'map' that represents a researcher's thought process in the acquisition of data, analysis and interpretation. A research design therefore specifies the selection of respondents, the data gathering techniques to be used and data analysis to be conducted (Creswell 2007). In other words, a research design provides a 'structure,' which links the philosophical foundations of a study to the methodological assumption of a research and methods (Mouton, 2009). Therefore, a research design is a systematic arrangement that lays out the plan and procedures that span the steps from broad assumptions to detailed methods of data collection and analysis and interpretation (Tichapondwa, 2013).

The qualitative and quantitative research approaches are viewed as 'antagonistic', or to borrow from Creswell, 'polar opposites,' which are 'rigid' in the way they are used in research. However, the new traditions about research methods emphasise the use of 'mixed methods' to ensure rigour, reliability and trustworthiness of the results of a study (Creswell, 2009). Therefore, in other research environments, quantitative and qualitative research designs accommodate each other.

The major function of a research design is to anticipate appropriate research decisions considered during the course of a research. By adopting an effective research design a researcher can be guaranteed of the reliability of a study. Any research study should, according to Hart, provide a methodological rationalisation of its purpose, or at least an approach, which indicates how data will be collected and analysed (Hart, 2007). In the view by Ulrich, this demonstrates the understanding by the researcher of the method of study in line with the preferred research taxonomy (Ulrich, 2011). Essentially, there are three research designs or approaches. These are qualitative, quantitative and mixed methods.

The preference of research taxonomy is usually influenced by the potential usefulness of the design to draw answers to the questions paused by the researcher. It is sometimes difficult for a researcher to come up with an entire design for a qualitative study (Rubin and Rubin, 1995). Partly, this is as a result of the flexibility of the qualitative research paradigm. In line with the above, a study on digital migration in the broadcasting sector may adopt a loose approach in terms of the operationalisation of the data collection tools. Rubin and Rubin thus observe that when using qualitative methods, researchers should keep on target in terms of the research objectives, whilst hanging loose in terms of the possibilities of the collection and analysis tools available to them (ibid).

Partly this implies that whilst the focus of the study may remain the same, the design of the research may change as the research progresses (Rubin and Rubin, 1995). This is typical of qualitative studies which have the potential of even generating an entirely new topic as the study progresses (Leedy and Ormrod, 2010). For the purposes of this study, the researcher has selected the case study approach. In addition, the researcher also used the heuristic approach in relation to document analysis. This aspect will be explored in more detail later in this chapter. It should be observed that document analysis played a significant role in the collection of information for the formative stages of the research such as the background and literature sections.

6.3   The Study's Philosophical Research Assumptions

Ontology

Studies in broadcasting have almost always favoured the qualitative research approach (Drummond and Paterson, 1985). Partly, the reason for this could be that broadcasting is part of society's delicate and complex engagements as gleaned from literature and also observed during interviews conducted. It is against this background that the engagement with broadcasting in a changing global telecommunications environment is viewed as requiring complete immersion on the part of the researcher (Denzin and Lincoln 2003). Immersing oneself in data is alternatively described as 'deep-drilling' (Fourie, 2007). The analogy of 'deep drilling' simply relates to the deeper dissecting of issues in research (ibid.). In the scientific world, reality is achieved through many ways (Leedy and Ormrod, 2010). Martin Terre Blanch and Kevin Durhem observe that "the way reality is achieved vary on a continuum, ranging from 'objectivity' that exists independently of human conception such as in positivist approaches, to the notion of 'multiple subjective realities' that are socially constructed such as in qualitative approaches" (Blanche and Durhem, 2006:332).

Practically, the adoption of the appropriate and most efficient method(s) for a study is undergirded by the researcher's firm knowledge of 'seeing reality' to borrow from Quiggin. Philosophically, this is referred to as ontology (Fourie, 2007). In this case, the search for insight into issues of Zimbabwe's transition to digital transmission in this complex global environment, lends itself to the qualitative research methodology. Without pre-empting the issues discussed in Chapter 5, the major reason for the adoption of the qualitative methodology over the quantitative is that digital migration is a 'real story' occurring in 'a real world'. Therefore, DBM is not an issue of statistical abstractions. However, this does not imply that there are no aspects of the digital switchover which can be viewed through the quantitative lenses (DU PLooy, 2006). If anything there are many aspects of DBM which can be viewed through quantitative lenses such as the verification of the penetration of ICTs in a particular environment.

Ascertaining the number of Set Top Boxes required by a country is quantitative. Although, knowledge of DBM has aspects which can be considered quantitatively as highlighted above, the deeper understanding and meaning of a phenomenon can be obtained through qualitative approaches (Leedy and Ormrod, 2010). Investigating the nature of DBM in Zimbabwe and its constitutive ontology required methodologies and methods, "adept to interpreting and describing the nuances of the programme" (Berger, 2012).

Epistemological & Doxological Assumptions

Epistemology relates to what is known whilst doxology relates to 'what is believed' to be true (Tichapondwa, 2013). The practical considerations of the study are to generate knowledge and understanding about DBM in Zimbabwe. Achieving knowledge about the intricate nature of DBM relates to the question about '*how*' knowledge concerning this programme can be generated (Leedy and Ormrod, 2010). It further relates to the demonstration by the researcher that their research has generated knowledge about a phenomenon through known scientific procedures.

The current study highlights scientific procedures that demonstrated that indeed knowledge about DBM was engaged. The consideration of whether knowledge has been generated is achieved through established scientific parameters of research (Denzin, 2000; Leedy and Ormrod, 2010). These parameters relate to 'epistemology' or in simple terms 'the theory of knowledge' (Mouton 2009; Denzin, 2000; Fourie, 2007). Therefore, discussing the questions about Zimbabwe's migration to digital within the context of the global environment can effectively be dealt with, within the phenomenological exploratory research paradigm (Mouton 2009). The purpose of the phenomenological approach is to identify and illuminate

phenomena through the collation of views regarding an issue (Willig, 2001). It is furthermore about how an issue is perceived by interviewees (Lester, 2014). The phenomenological paradigm was used to generate knowledge through putting together speculative insights about DBM in Zimbabwe.

Praxeology

Praxeology in research is about the practice of theory such as how it should be structured and presented, precedents that should be cited to establish a theory's relevance and originality, how a theory should be used and other common expectations within particular intellectual community, that is the theory's primary audience (Craig and Muller, 2007). More perceptively praxeology relates to patterns of discourses about phenomenon whose nuances are tailored to emphasise particular traditions or ways of thinking (ibid.).

Axiology

Axiology simply relates to values of a researcher (Collis and Hussey 2003). In this regard, as a qualitative researcher, my values about research are that of immersion into the issues being investigated. However, positivists believe that science and the process of research is value-free (Leedy and Ormrod, 2010). They believe that researchers should be detached from what they are researching and regard the phenomena, which are the focus of their research, as objects (Fourie, 2007). These assumptions are commonly found in research studies in the natural sciences, but they are less convincing in the social sciences (Collis and Hussey, 2003). In the social sciences, usually the concern is with the activities and behaviour of people in real settings (ibid.).

On the other hand, phenomenologists consider that researchers have values, even if they may not be made explicit (Leedy and Ormrod, 2010). These values help to determine what are recognised as facts and the interpretations which are drawn from them. In this regard, phenomenologists believe that the researcher is involved with that which is being researched (ibid.). Values play a large role in determining the position that the researcher takes in terms of methodology (ibid). Ultimately, the values of a researcher are central in the way data for a research is gathered and processed (Creswell, 2009). In this regard, the gathering and processing of data could either be objective or subjective (ibid.).

Methodology

The consideration of ontology, epistemology, doxological, praxeology and axiology above makes the task of identifying the methodology for this study relatively easy, as the said parameters influence each other (Fourie, 2007). In other words, the ontology of a study defines its epistemology, and also determines its methodology and vice-versa (Leedy and Ormrod, 2010). In any case, broadcasting has been rarely studied in isolation of its socio-cultural and political context (Drummond and Paterson, 1986). This approach has given broadcasting studies the much-needed 'holistic accounts' for greater understanding (ibid.). The qualitative research paradigm has been effective in illuminating complex interactions in society (Leedy and Ormrod, 2010). However, identifying one's methodology in research is just the beginning (Bordens and Abott, 2008). The real challenge is in identifying a paradigm from a range of paradigms within the qualitative framework (Leedy and Ormrod, 2010). The exploratory qualitative research paradigm has to been found to be the most suitable in studying complex issues of society in which the concern is about establishing the perspectives and speculating into the likely, rather than the known regarding an issue (ibid.).

The Selection Plan and instrumentation for Data Collection for the Study

The selection plan and instrumentation for data collection presents some of the most fundamental considerations relating to the study's respondents whose views are critical in answering the research questions. Observed also were the ethical considerations borne during data collection.

6.4   Sampling Plan for the Study

Identification of the Population in Context

The population interest in this study comprises media analysts, critics and government officials. On one hand, media analysts comprise academics and intellectuals who specialise in the analysis of the mass media *(MEC report, 2002).* An additional row to account for media critics and analysts not affiliated to government and quasi-government departments and universities identified for the study. A comprehensive discussion of these issues is proffered in chapter 6. Media analysts deal with wide areas of media analysis, including policy, infrastructure, technology, investment, regulation and law *(*ibid.*).* On the other hand, media critics are identified as those who evaluate the contents and programmes of the media (ibid.)*.* Globally, issues related to television, its policies and operations have always been the domain of bureaucrats in

government and perhaps a few in the society with the kind of 'mental software' capable of technical issues (Chiumbu and Mazango, 2000). The study therefore adopted a purposive selection plan. Purposive selection of interviewees, like the name implies, is based on the potential for the interviewee to make significant contribution toward the concerns of the study (Marshall and Rossman 1999). Furthermore such contributions should be verifiable (DU PLooy, 2006). The selected interviewees in a purposive sample, should have undoubted knowledge about the issues being researched (Leedy and Ormrod, 2010). It is against the above considerations that the sample structure for the study was adopted. A total of 21 interviews were conducted with officials drawn from a targeted sample of 26 interviewees as represented below.

Table 6:1   Targeted Sample

Government (2 Ministries: 2 respondents each)	4
University of Zimbabwe (UZ)	2
National University of Science & Technology	2
Midlands State University	2
Zimbabwe Open University	2
Zimbabwe Broadcasting Holdings	2
Zimbabwe Newspapers	2
POTRAZ	2
TRANSMEDIA	1
Broadcasting Authority of Zimbabwe	1
Mobile-cellular representatives	**3**
Media Critics and Analyst	**3**
Total	**26**

Source: table developed for the study

Quite notably, it is important to observe that of the targeted 26 interviewees, 21 interviews were conducted. The total number of people interviewed for the study fell within the range of what could be considered meaningful and reasonable for a qualitative study. However, the shortfall of 5 interviewees against the targeted number needs to be explained. Originally, it had been my objective to obtain the views of more than one person from each of the organisations and institutions sampled for the study. In any case, at least

5 to 25 interviewees are required study in order for reasonably meaningful patterns of a phenomenon to be generated for a qualitative study (Leedy and Ormrod, 2010).

However, as observed, some of the organisations targeted for the study later fielded a single person for the interviews, instead of two or more. In my view this arrangement did not in any way compromise the quality of data, neither did it interfere with the sampling criteria since those who were fielded for the interviews carried with them the collective views of the organisations and the institutions which fielded them. In this way, it should be appreciated that purposive sampling in this study operated at two levels. The assumption is that those fielded for the interviews by the organisation and institutions selected for the study, brought on board the collective positions of the organisations they represented. As market places for ideas, universities would have fielded more interviewees were it not for the cap imposed by my sample. However, since I used purposive sampling I had to be careful from the beginning of the study to target the best possible representatives from the targeted sample. While it was originally the intention of the researcher to carry out personal interviews with every interviewee drawn from the sample, an official insisted on submitting their views in written form. In cases where an interviewee opted for a written submission, it was still important to verify issues with the originator of the document before such information could be used for the study. Where possible, even those engaged in face to face interviews were also encouraged to submit written submissions if they could. I felt that a combination of verbal and written submissions minimised distortions. Whenever time allowed, transcripts were send back to the interviewees for cross-checking and verification of facts in case some error might have occurred during the processing of data.

Instrumentation

Whilst interviews were the major method through which data for the completion of the study was gathered, observation and desk research were also some of the methods employed by the study

6.5   Interviews

Interviews were the core tools by which the study gathered data. Interviews generated direct quotes about an issue. However, it is important to observe that the credibility of data obtained through interviews was as credible and as deep enough as the knowledge of the interviewee concerned (Blanche and Durhem, 2006). However, the criteria for selection for a purposive sample, is one's wisdom about the area under consideration (Bordens and Abott, 2008). The possibility for verification in the case of the need for clarification was observed as one of the strengths of an interview Blanche and Durhem, 2006).

Verification is a key ethical issue in studies that employ the interview method, as no one wants their views mis-represented (Bordens and Abott, 2008). As a result I had to spend more time in Zimbabwe which was the focus of my study. Therefore, in general, when interviews are properly administered, they can yield credible data of great ethical consideration (ibid.). Verification ensures that researchers refrain from tampering with the interviewees' opinions. Apart from viva, interviews can be used by the researcher to demonstrate to the university authorities that one was indeed in the field gathering data as it is difficult to fake an interview. Participants to this study were drawn from selected Zimbabwean universities, government officials, political parties and quasi-government institutions in the broadcasting sector and the private sector. Among the selected universities were the University of Zimbabwe (UZ), Midlands State University (MSU), National University of Science and Technology (NUST) and Zimbabwe Open University (ZOU). This selection is based on the fact that these universities offer programmes in media and communications. Interviews with government officials drawn from the ministries and departments responsible for information and communication were conducted in order to obtain the government of Zimbabwe views regarding DBM. More interviews were also conducted with officials from the selected quasi-government departments such as Transmedia and POTRAZ.

6.6   Peculiar Ethical Considerations for the interview method

In the modern age, ethical considerations are a critical component of scholarship (Leedy and Ormrod, 2010). Although ethical issues affected every stage and aspect of the study, unique ethical considerations for interviews were made since interviews were the primary source of information for the study. In research, interviewees delve into participants' secrets, rituals and frustrations regarding phenomena, to borrow from Fetterman (1998) in their discussion of the use of ethnography. Against this backdrop ethics are used to protect and preserve the integrity of participants. Helena Wulff, (2000) observes that there are 'layers of acceptance, zones of access' by which she meant physical panoptical tools found on sites of fieldwork, such as security research permits, and most interestingly the more intangible openings and dead ends permitted by subjects of research. Engaging government officials, even academics, carried with it some sensitivity (Mosime, 2007). It was plain axiomatic that one simply, had to earn the trust of these officials. In my view, there is a thin line between 'spying' and 'interviewing' as only the purpose separates them. Spying is a covert way of collecting information usually employed by secret intelligence organisation whilst interviews were an open source of information usually for open purposes (Quiggin, 2007). Although liberal with opinions, academics also felt constrained by the mission of the universities and the intangible ideological leanings of the departments they belonged (Newman, 1996). In my view people were scared to

be set at coalition with the purposes of their organisations which left me wondering as to the credibility of the information which they gave me under the shadows of the ideological leanings of the organisations and institutions they were drawn.

The Official Secrecy Act of 1973 (OSA), and the Access to Information and Protection of Privacy Act 2002 (AIPPA) provided the legal environment within which interviews in Zimbabwe could be conducted. Apart from setting out the general legal framework for the conduct of interviews both the OSA and AIPPA set out the specific legal environment necessary for the conduct of interviews. Organisations such as POTRAZ further laid their procedures and protocols regarding the manner in which their officials could be engaged in interviews. This involved the submission of the schedule of questions for clearance before the actual interview could be conducted. Apart from the 'vetting' of questions for clearance at the organisational level, I learnt that the submitted questions would enable the head of an organisation or institution to study the questions and match them with possible answers. In some cases this also gave the head of institutions time to circulate the questions among staff members for their input before the actual interview.

6.7   Observation

Observation is one of the most 'natural' tools for the collection of data which is at the researcher's disposal. As the adage goes, 'seeing is believing,' it is the basis of observation strength in research. Data that has been collected through observation is highly likely credible, trustworthy and rigorous as this method of data collection pays attention to detail (Elliott and Jankel-Elliott, 2003). In other words, before a researcher thinks about the interview, the questionnaire or any other such complex instruments, observation is readily available. Observation provides a detailed, non – judgmental and concrete description of observed events, objects and phenomenon (Johnston, 2011). Observations of events about, and of the process of a phenomenon can in the views of Johnston be used as a source of data to 'triangulate' and the case where the methods are more than three to 'angulate' with information obtained through cognitive components such as interviews (ibid.).

6.8   Secondary Sources in the Understanding of DBM

The use of secondary sources in research is critical in establishing how similar issues related to the study have been dealt with by other researchers. This helps avoid duplication of effort. It helped in locating the niche for the study in the community of scholarship. In simple terms, secondary sources are critical in

identifying the gaps in knowledge (Chirume, 2012). Data drawn from books, magazines, policy statements and any such artefacts, feeds into the textual analysis of the research (Polkinghorne 2005).

6.9　　The Procedure for the Analysis of Findings

The study is simply a critical narration of the story of DBM in Zimbabwe. Critical narratology as loosely coined by Ruth-Teer Tomaselli in personal conversations with Mosime and as explained elsewhere is a key facet of this study due to its descriptive nature (Mosime 2007). In a narrative such as the current study, the presentation of the research findings and analysis defy any form of predetermination. The story behind the study evolved naturally from the related aspects of the study just like an ordinary story is built.

Reporting of findings, analysis and interpretation implied the re-engagement with the study's aims and objectives of the study. Analysing data through the thematic phenomenological qualitative studies is about producing themes regarding an issue (Bowen, 2005). Phenomenological qualitative analysis is about producing 'meaningful units' that reflect the issue under spotlight (Leedy and Ormrod, 2010). Against this background, this study sought to produce meaningful explanations on Zimbabwe's transition to digital transmission. Complex processes such as the above fall under the inductive analytic reasoning (Maxwell, 1997, Carter and Miles 2007).

Unlike the positivist approach, this research is not about confirming or refuting a hypothesis, but about generating patterns on the processes and procedures of digital migration in Zimbabwe. The thematic phenomenological data analysis' moment in qualitative research uncovers the nature of data regarding an issue (Bowen, 2005). The process begins with 'seeing' the data closely or in detail and examining it in broad or general terms (Bowen, 2005).

In the case of the study, an interesting issue is the manner in which the views and opinions of the 'elite' interviewee were used as the basis for organising data into themes and patterns of discourses for a study. The 'elite interviewee' relates to "interviewees drawn from positions of authority from the organisations they represented" (Gillham, 2000). "These were people with considerable personal power, knowledge to information that others did not have and expertise regarding an issue" (ibid.). In terms of the perspectives of an issue, the 'elite interviewee' generates different and incisive insights about an issue (ibid.). They are the veterans regarding the phenomenon. "This is a very varied group of a research population characterised by the possession of great knowledge about an area, the topic and its setting" (ibid.).

The elite interviewee exhibited the characteristics that authority gives people – in particular that they will not submit to being tamely interviewed, where you direct a series of questions on them (Gillham, 2000). They preferred to answer questions using their order instead of following the order of an interview schedule as set by the interviewer. In terms of data analysis, the views of an 'elite interviewee' are critical in the sense that they are uniquely informative, as well as facilitating research activities around an issue (ibid.). Most perceptively, such views were used to organise data during analysis and interpretation.

Although essentially a qualitative study, observed is that the reporting of the findings to the study also took a quantitative dimension. Therefore, both qualitative and quantitative approaches were considered critical in terms of the analysis and interpretation of the research findings to the study.

6.10   Negotiating Gatekeeping Power and the Research Practice: Methodologies and Methods of Researching Zimbabwe's Transition to Digital Broadcasting

The collection of information for a research study is a systematic process which involves both strategic and tactical thinking (Popper 1902-1994). Therefore the present chapter is concerned about the mapping of strategies and techniques used for data collection in pursuit of answers to the research questions as outlined in Chapter 1. Notably, the chapter presented and evaluated the research design and the accompanying strategies and techniques used to collect data to complete the study. The present chapter outlined the justification for the research design and techniques used for the study (Blaxter *et. al.,* 2006). It is within this context that I learnt that every decision regarding the study's strategy in terms of data collection, (no matter how small be), needed justification (Bowen, 2005).

Also central to the concerns of Chapter 5 were the ethical issues related to the study. In my view, the current chapter can be considered a 'proverbial engine' or 'heart' of the study. As stated, the present chapter highlights the processes and procedures of how the information required in answering the questions raised by the study were obtained (Denzin and Lincoln 2003; Bordens and Abott 2008; Chirume, 2008). More precisely, the current Chapter is about the methods and methodology of the study, to borrow from Mosime (2007).

Practically, the chapter is about the 'trials and tribulations' I went through, during the study. Referring to the ways she obtained data to complete her Doctoral studies, Teer-Tomaselli points to an approach, rather than a method (Teer-Tomaselli, 1992). In my view, the differences among method, methodology and approach to research are critical, especially given that these concepts have often been used subjectively in

research (Gray, 2003). Methodology can be regarded as a proverbial 'road map' used to navigate unfamiliar terrain by researchers as they explore a phenomenon (Newman, 1996; Padgett, 2004). In this context, research is about finding new insights about issues of life (Bordens and Abott, 2008). Notably, Hill, as quoted in Marshall and Rossman (1999), defines methodology as "relating to procedural rules that guide a researcher in the active exploration of selected dimensions of a phenomenon". Furthermore, from a philosophical viewpoint, the concept of methodology relates to the "theory of research and its practice" (Blanche and Durhem, 2006). As a result, methodology is one of the critical research assumptions which I needed to familiarise with before I could even think about the study's design and even plan and strategise for data collection. The other assumptions discussed in this study are epistemology, ontology, axiology, doxology and praxeology. The articulation of the research problem and sub problems; formulating hypothesis and sub-hypotheses where necessary; choosing appropriate research methods; designing methods and designing data collection procedure or outlining data collection stages suited for researching DBM were some of the major concerns for the present Chapter (Chirimuuta C, *et. al.,* 2014).

Methods, as outlined by Ann Gray, (2002:8) relate to the tools by which researchers acquire data for their studies. In research, methods include interviews, focus group discussions, observation and questionnaires among others (Dubberley, 2010). In the views of Creswell, an approach is "a plan or procedure for research that spans the steps from broad assumptions to detailed methods of data collection, analysis, and interpretation" (Creswell, 2009). A research approach involves a step by step way of answering the questions raised by the study (Blaxter *et. al.,* 2006).

Quite notably, there appears to be a common thread among the above concepts. However, philosophy is about picking the most salient and subtle issues regarding concepts. In research, there are essentially, two broad methodologies. These methodologies are often regarded as approaches (Creswell, 2009). These are the quantitative and qualitative research methodologies as discussed later (Struwig and Stead, 2013). The quantitative and qualitative research methodologies employ diverse methods for data collection, analysis and interpretation (Struwig and Stead, 2013).

As a result these methodologies also are based on different research designs which as explained, can be used in combination with data collection, analysis and interpretation (Creswell, 2009). Apart from engaging the tools of data collection, the present chapter also partly outlined the data analysis and interpretation procedure (Bordens and Abott, 2008). In this light it should be observed that certain research designs favour certain analytical procedures (DU PLooy, 2006; Fourie, 2007).

Fig 6:2   Research Designs their Suitable Research Methods:

Experimental	Case study	Correlational	Descriptive
Questionnaire	Questionnaire	Questionnaire	Questionnaire
Interview	Interview	Interview	Interview
Observation	Observation	Observation	Observation
Document analysis	Document analysis	Document analysis	Document analysis
	Focus group	Focus group	
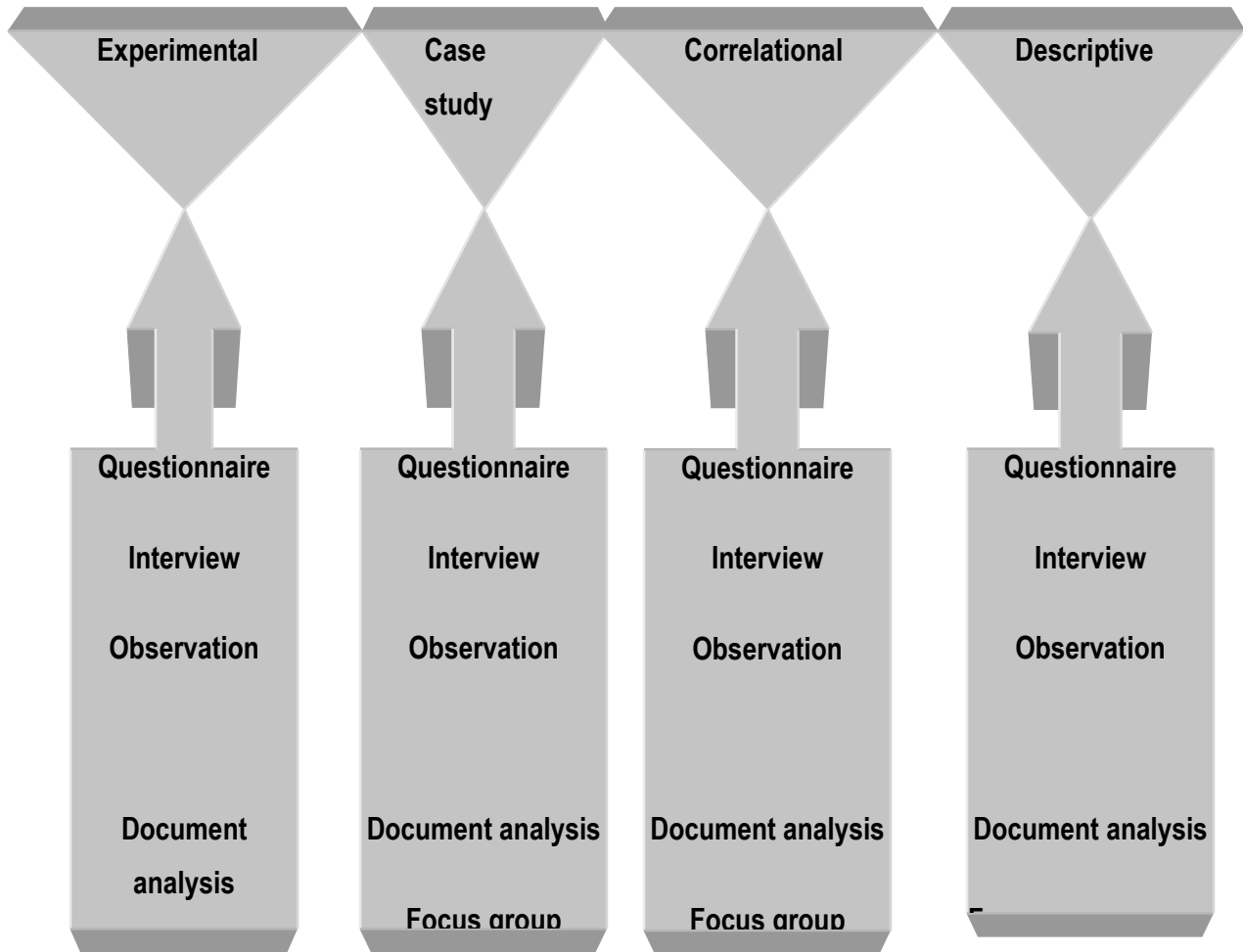
Source: Tichapondwa 2013:125

Outside of the philosophical considerations of the study, the current chapter also detailed the practical procedures, strategies and techniques employed by the researcher to collect data used to complete the study (Chirume, 2008). Engaging in the evaluation of the processes and procedures involved in the study's methodology gave me an appreciation of the viability and feasibility of the study.

I observed that each and every decision made regarding the research plan and strategies for data collection, analysis and interpretation had to be justified. As a result, solutions to avert the challenges to ensure that the study could be completed were also provided in this chapter. In Hart's views, anticipating challenges and knowing the level at which one is expected to operate regarding a specific research task is

critical for the success of a researcher (Hart, 2007). The term 'level' used above simply refers to the pitch at which one is conducting their study: whether first degree, masters or PhD. Hart observes that the applications of insight, required at these three different levels of scholarship, vary in both depth and range regarding an issue (ibid.).

Therefore, understanding the requirement of a research beforehand simplifies the task of resolving the issue under spotlight. Understanding the requirements regarding the level at which the study is being conducted entails the understanding of the unique traditions of the university to which the programme is being offered and in some cases that of the centre, school and or college the programme is conducted.

6.11   In Search for a Research Path for Zimbabwe's Transition to Digital Broadcasting

The quest to understand the state of broadcasting vis-à-vis DBM in Zimbabwe in the context of the global environment merited research, if the future roll-out of the programme is to be based on knowledge. The above view is critical in ensuring the smooth implementation of the programme as obstacles are identified in advance (Berger, 2012). Although it is part of this study to search for some of the impacts of the transition to digital broadcasting, there is no doubt that this programme will impact the country's economy in different ways (Goleniewski, 2007; Medeisis, 2009).

Some observers regard the introduction of DTT as a game changer in the ways television and the entire information and communications sector operate. As stated, the implementation of the digital transition is an international issue as much as it is of a national character (Medeisis, 2009). The programme's global thrust stems from the role of the ITU in enforcing international regimens as agreed by nations at the Geneva Convention regarding the broadcasting sector (ITU ICT toolkit, 2006). The programme's national and thus local outlook, involves governments ensuring the speedy implementation of the programme as stipulated within time frames under the auspices of the ITU (ibid.).

Therefore, the transition to digital should be framed within the global strategic objectives in telecommunications, in as much as it taps from its national outlook as well. At the global level, ITU assists nations with the implementation of the programme in line with international regimens, as observed. Therefore, the global and local outlook of the study had implications in terms the study's constitutive ontology and nature. Therefore, DBM needed to be understood from both the global and local perspectives. Quite notably, the roots of DBM can be traced to global events (Medeisis, 2009). It is against this backcloth, that the study adopted the global approach to the understanding of DBM in Zimbabwe.

Apart from generating knowledge on the reasons for Zimbabwe's migration, there was also the need to understand the nature of the transition in the country, given the competing priorities facing the country in terms of local obligations. These local obligations include among them political, economic and ideological constraints. The understanding of Zimbabwe's digital migration is important not only for the identification of the challenges faced by the country during the implementation of the programme, but also in highlighting the opportunities associated with the programme (Berger, 2012).

Epistemologically, a most obvious yet often ignored justification regarding the quest for knowledge in research in general, is simply 'the nourishment' of one's mind. In this regard the present chapter outlines the reasons for engaging a study in DBM as part of the study's methodology.

6.12   Traversing the Research Journey: Negotiating Gatekeeping Power and Exploring the Ethical from Nuremberg Experiments to the Tuskegee Syphilis Studies in the USA: The Birth of Research Ethics Practical Considerations

In general, the roots of research ethics can be traced to the harrowing events following some researchers conducted in different parts of the world. It is in this light that the aftermath of the atrocities committed by Nazi medical researchers, in Germany, during World War II, and also the controversial Tuskegee syphilis studies from 1932 to 1974 in which black Americans in the United States of America (USA) were deliberately infected with syphilis to observe the effects of the disease on humans, should be conceived.

 In the case of the Nuremburg experiments, in which the Germans used Israeli prisoners as 'gin pigs' for live medical experiments, many lives were lost. The Nuremburg experiments were meant to learn about a variety of medical conditions and also about the production of lethal gases that could be used in war. As a result, many Jews lost lives. The holocaust, in which many Jews were gassed to death in special chambers, was part of the Nuremburg experiments. Ultimately the experiments later led to the arrest and trial of several Nazi doctors (Machengete, 2014).

The arrests of the doctors involved in the experiments, were followed by the publication of the Nuremberg Code, which outlined some of the ethical procedures to be observed in research. The resultant code, from the procedures, emphasised the importance of individual informed consent in research with human participants in order to prevent the recurrence of abuses by scientists in the name of research (ibid.). In the case of the Tuskegee syphilis experiments, 200 black Americans were deliberately infected with syphilis in controlled experiments. The Tuskegee studies were also medical experiments meant to find out about the long term effects of syphilis on humans when left untreated. As a result, some of those infected with

syphilis died. Others became insane, whilst many more presented complicated medical conditions of one kind or the other. The other controversial research studies, which might have led to the birth of ethics, include Zimbardo's simulated study of the tensions between prisoners and warders (ibid.). Zimbardo's student participants began to assault each other as conditions in the study began to resemble a real life situation.

In a 1955 study of jury decision making, a jury was audio-taped while it considered a case believing their deliberations to be in camera (Machengete, 2014). When it became known that they had been recorded by a researcher, there was a public outcry (ibid.). To date, numerous other guidelines and ethical codes for researchers have been published since World War II. Most of the examples cited in the violation of ethics relate to the medical sector hence the biomedical background to research ethics. The application of biomedical standards across disciplines has caused concern in the social sciences and the humanities which are perceived as less sensitive to the medical sector. In the views of Vaughn (2008), ethics relates to moral reasoning which in turn relates to the finer qualities about the nature of humans. My experiences at UKZN concerning research ethics are that one was not "allowed the slightest" contact with the field of study before obtaining any ethical clearance. This is even by way of trying to have basic knowledge about an area before a full-scale study could be launched. However, as pointed by Erasmus Chirume in his Doctoral studies, in certain cases (especially in the social sciences and the humanities) initial contact with the field of study is the basis for a successful study tour (Chirume, 2008). This is true for most researches in humanities (Bordens and Abott, 2008). In fact, Marshall and Rossman clarify this issue by stating that "in qualitative inquiry, initial curiosities for research often stem from real-world observations which is as a result of the interplay of researcher's direct experience, tacit theories, political commitments, interests in practice and growing scholarly interests" (Marshall and Rossman, 1999; Chirume, 2008).

At UKZN, one had to obtain an ethical clearance certificate before they could interact with respondents in the field. This would be allowed with the same measure of standard across disciplines. This procedure was different from most Zimbabwean universities where I had been a student, at least for the better part of my academic life. At the University of Zimbabwe and the Women's University in Africa, where I had obtained my masters degrees, I had observed that the negotiation of gatekeeping power would run simultaneously with the actual fieldwork. As a result, as I approached the potential interviewees requesting for a gatekeeper letter, some of them expressed surprise as they were ready for the interviews. They had been accustomed to a situation where researchers would seek for 'gatekeeping permission' simultaneously with that of the interview. As a result, some of them became suspicious of my intentions and would thus

reluctantly oblige to my request for a gatekeeper letter. Some even questioned the logic of the gatekeeper letter by stating that "what if by the time you came back for the interview you find new management who may not oblige to the interview, this would render the permission void".

This prompted me to enquire with other Zimbabwean universities concerning how they handled ethical issues in research, just to make a comparison with my experiences at UKZN. Indeed, colleagues from Zimbabwean universities confirmed that in this situation gatekeeping power would be negotiated simultaneously with the actual fieldwork. However, I also observed that adherence to ethics in research in most universities in the country would depend on the nature of research. Whereas in the humanities the issue of research ethics would be approached in a relatively relaxed manner in Zimbabwean universities, the approach would be strict concerning the medical field and sensitive research areas. For instance, in the medical field in Zimbabwe, one had to be cleared by a National Health Board of Zimbabwe (NHBZ) before being cleared by the university to which they were registered. At UKZN, my observations were that the clearance procedure was uniformly applied across disciplines. At this university, getting clearance was the first step into research. This, in my view, was rather cumbersome. However, in line with this procedure, Natalie T. J. Tindall weighs in by stating that it is with the so called "less sensitive" areas such as the humanities that the administration of ethics in research should be strictly observed (Tindall, 2007). Natalie T. J. Tindall cites the example of the bonding that occurs between the researchers and researched in qualitative methods such as interviews and ethnography, only to be broken after the study, as something worthy thinking about, in terms of these issues. Therefore, at UKZN one had to engage the elaborate procedure of seeking permission to interview well before the actual study. The researcher had to get a "gatekeeper letter" from potential interviewees, which would be presented to the university in order to obtain an ethical clearance. Once the university was satisfied, first with the nature of the study based on the proposal, and also that the researcher had 'real' respondents willing to participate in the study, then and only then would the university grant the researcher an ethical clearance certificate.

As the basis for the issuance of such clearance certificate, one had to produce a well thought-out research sample from where respondents to the study were drawn. However, I must admit, conceiving of a complete sample in research at such an early stage as the proposal can be such a Herculean task. In real life, researchers often stumble upon respondents who have information on the requirements of the study sometimes whom they had earlier not thought of at the beginning of their study. This is especially the case in social sciences and humanities. Such also depended on the nature of the study (Cooper, 2004).

Generally, the premium in terms of ethical consideration in universities has remained the same, such that "when dealing with living organisms (animals including human beings and plants) as sources of data, the researcher should not violate their right of existence and survival in an undisturbed environment" (Thomas, 2003). Furthermore, even when dealing with non-living things as sources of information, there are still some ethical principles that must be adhered to, especially when sourcing data from individual objects, libraries, the natural environment, artefacts, any other inanimate objects, offices of strategic organisations as well as Government Departments and the wide spectrum of institutions from which confidential, secret and mystified information may be obtained (Thomas, 2003; Chirimuuta C. *et. al.,* 2014). As a result, as I embarked on the preparation of the proposal for the research proposal colloquium, I remained somewhat 'extremely cautious' of the extent to which I could interact with the field in terms of the 'exploration' of the ideas that would form the basis for the research. I 'feared' even to get back to archival material that would strengthen the historical sections of my research proposal, lest this would be confused as data.

Some felt that the "strict regime" to issues of ethics at UKZN, to some extent interfered with the 'flexibility' of research, especially in the humanities, where sometimes the researcher's interaction with the 'field' would inform the study as earlier stated. In certain circumstances, the nature of the research determines the choice of ethical principles (Chirimuuta *et. al.,* 2014). Such is typical of most studies in the humanities where "flexibility" can be built into the research design itself by employing a theoretical sampling strategy in which a researcher adjusts the sampling procedures during the data collection process based on incoming data (Dubberley, 2010).

Although the UKZN clearance letter leaves provision for capturing new developments into a study such as the shifts in the phraseology of the topic and involving additional participants, the requirement to inform the office responsible for ethical issues of any such change, no matter how 'slight' could be 'nagging'. In my view, it could also be viewed in the context of 'suspicion' and 'mistrust' of the university authorities of the conduct of students in the field. The issues of ethics, which have a bearing on the manner data for this study was obtained, is discussed in detail below and also under the sections on the researcher's biographical note as it relates to the study's axiological values.

My interests in ethical issues in research were prompted by the views of Newman when he pondered "the ideas of a university as an institution for the impartation of broad knowledge, critical intelligence, moral decency and social sensitivity" (Newman, 1996). However in his conception these qualities were supposed to flow into the character of a student naturally, and not sanctioned through other means other than

intellectual growth (ibid.). In this context, research ethics are not a matter of bureaucratic policing, but a learned quality upon which a student is granted the privilege of being a 'complete gentlemen' (ibid.). In this regard, ethical conduct as part of a student's intellectual growth is supposed to be seen through the adoption of certain habits, moral or intellectual (ibid.). Ethical behaviour is part of these measures as well (ibid.). Therefore, as I reflected on the UKZN clearance procedure, two things came to mind. First, that the administration of research ethics at universities could have a 'dual' impact on research. One of which could be counterproductive to the goal of research in a university. Second, that adherence to 'strict ethical regimes' could have positive impact on the reputation and rating of a university (Tindall, 2007).

The more practical approach to ethical issues in research at university, in my view, is to exercise flexibility. Such discretion would of cause depend on the nature of the study, as there are some study areas where such discretion cannot be left to individuals or a single university (Cresswell, 2009). At UKZN, the debate among those in social science and the humanities was that the use of 'biometrical standards' to inform the university ethical regime across disciplines, as was the case, was rather counterproductive as such criteria did not quite suit the approaches in the humanities whose epistemological, ontological and axiological taxonomies favoured flexible ethical regimes as opposed to the case in natural sciences (Thomas, 2003). I found issues of ethical clearance at UKZN quite involving and cumbersome. On one hand, it appeared as if ethics were applied 'blindly' even on the less sensitive areas such as the humanities and social sciences.

Applying research ethics 'blindly' appeared to retard research in the humanities. On the other hand, however, adherence to strict ethical regimes positively impacted the character of the university. This could even be discerned from the comments of those approached for the gatekeeper letters who marvelled at the university's strictness regarding matters of ethics in field work (see also Babbie, 2008). Research ethics are thus the basis upon which co-operating funding partnerships were founded (Thomas, 2003; Leedy and Ormrod, 2010; Babbie, 2008).

In observance of the UKZN's 'strict regime' on ethical issues in research, I had to determine the sample of my study from which the participants to the research was to be drawn in as comprehensive a manner as possible as the gatekeeper permission letters would be drawn from this sample. This is sometimes a difficult exercise (Creswell, 2009; Struwig and Stead 2013). I observed that in most cases researchers 'stumbled' into sources with valuable information as stated earlier. However this falls within the purview of random sampling.

From a practical perspective, there were occasions during my research journey; when I stumbled upon people who were quite knowledgeable about DBM, whom I had not originally selected for the study. This was particularly the case concerning conferences where without a predetermined purpose; I bumped into people with noticeable views about the area of study. Since I had adopted a purposive sample the dilemma was whether to disregard or to co-opt their views. I had to be principled not to bend the rules of purposive sampling by cherry picking the functional elements of random sampling. However, I could not ignore valuable wisdom to the study, simply because it was coming from people who were not part of the sample. I realised that the views I stumbled upon during my study could easily be operationalised under the observation method of the study. At least this way there would be no conflict whatsoever regarding my sampling strategy.

I met with private citizens in society who happened to have developed knowledge about digital broadcasting migration through personal means - some through personal interest in the field, others because they intended to operate a radio or television station once channels were available. One such person broadened my views about digital broadcasting migration issues, especially concerning the technical implications of the programme.

With these cases, it remained important that who I have 'stumbled' into would fit in the study's original sample and especially the respective categories of research participants, as outlined in chapter 1. Otherwise getting carried away through chasing 'everyone' who claimed knowledge on the subject would simply demonstrate the lack of a research strategy and plan. After all, a research is supposed to be conducted in a systematic way (Gray 2003).

6.12.1 A philosophical View to Research Ethics

Having discussed issues traced the roots of ethics in research from a practical and also concrete perspective for depth, it is important to analyse the same issues from a philosophical viewpoint. Kalisto Machengete observes that there are several approaches to ethics, which in turn give rise to several philosophical principles applied in different ways to determine whether research is ethical (Machengete, 2014:5). Simply put, ethics whether in science or any other human venture relates to issues of moral justice (Mouton, 2009). In my view ethics relates to behaviour and actions which a people may deem right or wrong according to the criteria of norms and values. As in any sphere of human life, certain kinds of conduct are morally acceptable, whereas others are not (ibid.). In the case of science, it is the scientific community itself who decides on what is morally acceptable (ibid.). Quite notably, Kalisto Machengete

observes that ethics can be understood through several philosophical principles Machengete, 2014). The first principle is ethical relativism. Ethical relativism claims that when any two cultures, organisations or people hold different moral views on an action both can be right. Judgment of what is right or wrong is culturally determined thus there are many moralities each equally right or valid. A moral judgment is based upon one's emotions and emotions are not true or false. For ethical relativism, two separate decisions can be both ethical if based on two distinct cultures (Machengete, 2014).

The second is utilitarianism. The ethical philosophy of utilitarianism states that an action is right if it produces the greatest amount of good for the greatest number of people affected by the action, otherwise it is wrong. In essence, morality of an action is a cost-benefit analysis for those affected by the action. It is a teleological approach to ethics. The third is Kantian Formalism. Kant says that a moral action must be universal. If an action is moral for one person, it must be moral for everyone. What makes an action right is not the sum of its consequences but the fact that it conforms to moral law. Thus one may be allowed to kill another person as a last resort in self-defence. The fourth is social Darwinism. The root of evil is thus attempting to interfere with this process of selective adaption for survival. What happens? Thus, social Darwinism is a no ethics free- for-all.

The fifth is Machiavellianism. Noccolo Machiavelli once noted "any person who decides in every situation to act as a good man is bound to be destroyed in the company of so many men who are not good. Wherefore, if a Prince desires to stay in power, he must learn how to be not good and must avail himself of that ability or not, as the occasion requires". This Machiavellian ethics claims that 'is' takes precedence over 'ought'. On the one hand, there is the world that we wish existed, a world of trust, loyalty, justice and honesty – the way things ought to be. However, the world is filled with injustice, unfairness, dishonestly and intolerance. According to Machiavelli, decisions should be made based on the way things really are. Morality is for a person's private life in business expediency prevails.

6.13   Preparations for Data Collection

Given the nature of work I had I hired two research assistants to assist with technical aspects of the research. A meeting with the assistants hired was convened to explain the duties and responsibilities of the assistants and to ensure that we had all the necessary gadgets and equipment for the interviews. This meeting also allowed me to walk my assistants through ethical behaviour especially relating to issues of recording would only take place with the express permission of the interview. I had also to highlight to them

that sometimes they would be denied access into certain interviews depending on the interviewee although forward planning for such things would have been made.

In an academic study, the duties and responsibilities of research assistants can be 'controversial', especially as it relates to the levels of involvement of the assistants in the research study (Vaughn, 2008, McDaniel 2014). Sometimes researchers abrogated their duties and responsibilities to assistants which often is the case with commissioned research (Vaughn, 2008). Even with commissioned studies, the roles of the researcher have distinctly stood out from those of assistants (McDaniel 2014).

Therefore, conflating these roles would be unethical. As result, I, as the researcher, personally conducted the questioning during interviews, whilst the assistants helped with recording. A research assistant is a researcher employed on temporary contract for the purposes of assisting in academic research. Research assistants should not be in any way responsible for the study's outcomes as this is the prerogative of the principal researcher (ibid.). The commencement of fieldwork which had stalled for reasons, including personal health issues, meant that my focus would be now on data collection, presentation and analysis. This major step in the study was an inspiration. The step gave me hope that despite having lost time due to unforeseen circumstances, I could still complete my studies in record time.

6.14   Research Assistant as Source of Information

Although sometimes not acknowledged, the research assistant is a critical source of information. When I wound up my interviews, I arranged for a 'debrief' with my assistants on the process of data collection. Sometimes even at the beginning of the interview sessions, the research assistants' volunteered critical information regarding the nature of questions and how they could be improved for better impact. This is called re-coding.

Recoding relates to the fine-tuning of a question for clarity. The debriefing with assistants at the end of the interview sessions gave insights into the overarching quality of the study in general. In this regard, assistants commented on some of the salient issues related to the digital transition that had been raised by interviewees which I might have overlooked in my transcription. The assistants could also comment on the quality of questions, engagement and thus quality of study in general. Ultimately the interaction with assistants had a bearing on the quality of the study.

6.14   Toward the Philosophy of the Study's Methodology

Fig 6.3: Philosophical Approaches

Philosophical World views

Postpositivist
Constructivist
Transformative
Pragmatic

REASERCH APRROACHES
Qualitative
Quantitative
Mixed Methods

Research Methods
Questions
Data collection
Data analysis
Interpretation
Validation

Designs

Quantitative (eg experiments)
Qualitative (eg Ethnographies)
Mixed methods (eg Explanatory Sequential
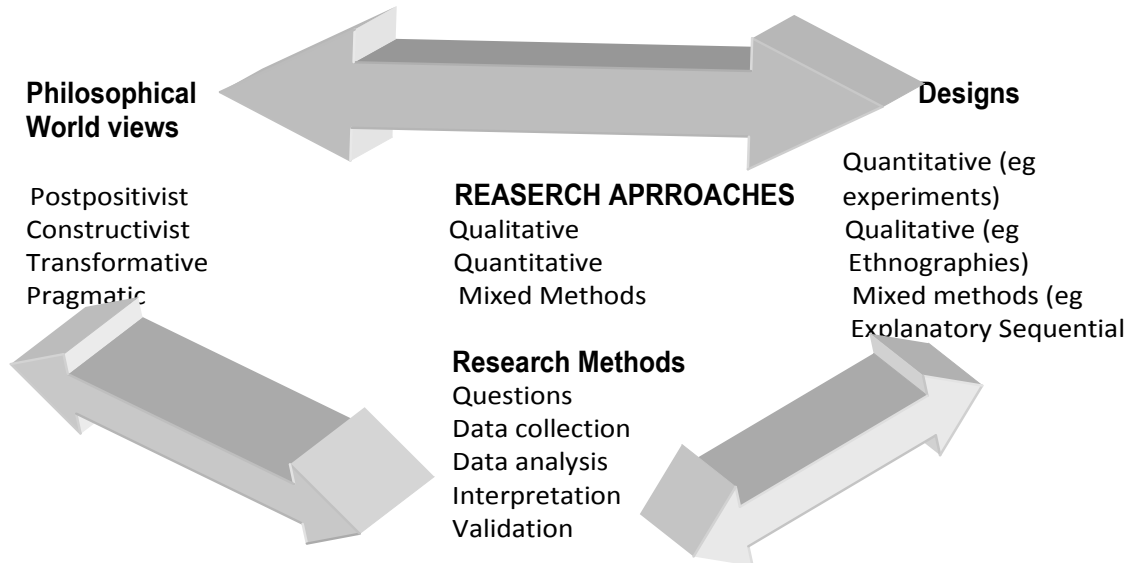
Source: Adapted from Creswell and Plano Clarke, 2007

Before delving into the intricacies of some of the setbacks encountered during the study, it is important to exhaust the discussion on the philosophical assumptions of the study concerning the research methodology. Generally, discussions about research methodology should, in my view, involve the declaration of the researcher's research background. This relates to the biographical note about the researcher. This includes among other things, the researcher's research experience, academic qualifications and research preferences. Ultimately, this should also explain the researcher's rationale concerning the choice of methods, approaches, methodological strategies and techniques employed to obtain data for their study (Creswell, 2009).

Hill and Dubberley among others are of the view that "the values of a researcher in research are foundational for knowledge producing systems" (Hill, 1984). Values are beliefs a people from a given entity or community share or strive to achieve in order to be able to create and recreate themselves among other communities (Chirume C., 2012). Therefore, the values that one holds are responsible for the choices a researcher makes because they are part of our worldview (Dubberley, 2010). Such choices include among other things, the way we collect data, analyse it and ultimately tell the story by analysing the findings (Chirimuuta C *et. al.,* 2014). Therefore, in any research, values are realised through the active choice of alternative future facts (Hill, 1984 as quoted in Marshall and Rossman, 1999).

As we make choices, the responsibility which hangs upon us is to seek a personal and disciplinary understanding of the base on which we are willing to be held accountable for such decisions (Hill, 1984 as quoted in Marshall and Rossman, 1999). The question of the researchers' involvement as 'core-creator' of knowledge during data collection has remained controversial, especially when considered from the positivist approach (ibid.).

Positivists believe in 'facts' and 'absolute truth' in which the researcher's role is neutral (ibid.). The researcher in this instance is viewed as a non-committal agent through whom reality is obtained in research.

Fig 6.4: The thought Processes in Selecting a Research Approach:

Source: Tichapondwa 2013:202

6.15   The Ideological Argument Regarding Data Collection

The idea of a researcher as a 'neutral arbiter' of knowledge is increasingly under pressure in the arts and social sciences (Creswell, 2009). Miller had earlier pointed out that there is need to appreciate that knowledge creation in research has a context (Miller, 2013). Therefore, this involves the ideological leanings of the researcher and also those of the selected participants (Creswell, 2009). The process of the selection of a sample, in my view, is value laden. Hill attests to this view by stating that the mere act of

selecting participants for a study is ideological as the researcher picks certain respondents over others (Hill, 1984 as quoted in Marshall and Rossman, 1999).

There are so many reasons a researcher would pick a particular participant to take part in their study over others, unless if it is snowballing, where at least the researcher is viewed less in control of the linkages with participants at a later stage in the chain that forms (Tichapondwa, 2013). Even snowballing too could even be said to have some flavour of ideological underpinnings because of the way the process is initiated, which is well targeted in a way.

To be observed also is the fact that depending on whether the study is commissioned or in fulfilment of a qualification, the researcher ought to declare the layers of influence to the study from the elements involved (Hill, 1984 as quoted in Marshall and Rossman, 1999). This is important as it constitutes the researcher's awareness of some of the subtle but critical issues that influence knowledge production, a fact which most researchers often take for granted (ibid.).

This study used purposive sampling due to the specialised nature of the phenomenon under spotlight. In simple terms and for the purpose of this study, ideology can be defined as a map, framework or paradigm which people use to figure out how the social world functions, their position, as well as survival mechanisms (Chirume C., 2012).

Decisions of which methods to use in research do not occur in isolation of the researchers' worldview (Dubberley, 2010). In the case of a research in fulfilment of a qualification, one should also add the views of the supervisor (Leedy and Omrod, 2010). Every supervisor has certain values of human beings which they ennobled and would want perfected in their students.

There is also need to engage the mission of the school or university in which the study is being conducted (Marshall and Rossman, 1999). However, this issue about the mission of a university and its bearing on research will be fully developed later. To some extent, therefore, and in light of the ideological imperatives to research, the way I ultimately conducted this research cannot be divorced from the influences highlighted above. Newman points out that "there is something distinct and something of a finer idea about every university or school, which the founders of the institution wanted students to learn, different from the other university" (Newman, 1996). Rarely, if at all, do universities declare the 'finer values' related to their curriculum's ideological leanings.

Apart from the obvious glowing mission statements that almost sound as if they come from the same source, universities do not declare the ideological leanings of their curricula. The idea is to present the university as a 'neutral harbinger' of knowledge (Newman, 1996). In this regard the agenda setting role of these institutions would rather be masked in cloaks of mystery lest these institutions are relegated to paternalism.

6.16   Inside CCMS research Values

My observations and interpretation of CCMS research values was that it espoused liberal views about society with a strong leaning toward the liberal ideology as explained earlier. Perceptively, the liberal ideology traces roots as the 'liberation theology' as opined by Melkote and Steeves 2001 quoting Knitter, (1987). My opinions were based on the views expressed by one of the founding members of the Centre Professor Emeritus Keyan Tomaselli that

> The centre's roots could be traced to the events of the 1976 uprising when a group of students and academics coalesced around the question: Why resistance in South Africa against Apartheid was failing as compared to elsewhere? The behind establishing the centre was to was to interrogate the relationship between domination and resistance. With the country's freedom in 1994, the new upper management of the then Natal University (NU) swept aside conservative institutional influences in line with the new dispensation. These developments led to the birth of what can be regarded as the strongest centres of media and communication studies in Africa.

Tomaselli K. G. 2012

It is within the context of the tradition of the above that my studies could partly be understood. Although largely the search for the truth can be viewed as conjectural and open to further interpretations the search for the truth takes place within specific environments such as the above as observed.

6.17   The Trappings of Ideology in Media Studies: The Folly of African Countries

As observed in chapter 2, also as I reflect the events during the colloquium presentation at the end of the first year of my studies, I recall one of the panelists taking issue with the 'global approach' to my study. In the view of the panelist, I should have taken a 'nationalistic' and therefore a Zimbabwean approach. I felt like the panellist had overlooked the fact that "each phenomenon permeated its nuances that demanded specific approaches, if clarity was to be achieved" (Newman, 1996).

More perceptively, Craig and Muller posit "the approaches we take in life and influences we venerate through the positions we adopt are dependent on given traditions". As earlier defined, the concept of tradition simply relates to a way of thinking about the issue within a specific historical epoch. Therefore, whilst digitisation has a global phenomenon, I suppose undergirding the panellist's view was the idea that the local Zimbabwean approach, would yield data 'relevant' to Zimbabwe. I suppose also that the panellist felt that a localised, nationalistic approach   would be more 'African,' as partly discussed in Chapter 2.

Although at that time I managed to wriggle through this debate I should however, admit that I was ill-equipped for the discussion. However, this spurred me to read more about the local and global approaches to research.

The ideas of Newman on *The Idea of a University* has, to date, broadened my views on some of the advantages of the global approach, to national issues (Newman, 1996). The global approach is suited for a case study. Some of the advantages of a case study were highlighted in chapter 3, hence it would be needless to repeat them. However, as observed, every body of knowledge has a character of its own, reflecting the influences of its time. Such character traits stem from the global and local environment of an issue (Medeisis, 2009). Segmenting the approaches may distort the issues under consideration (ibid.). This is especially true for the process of digital migration, whose roots can be traced to the global strategic objectives to resolve the issues of spectrum scarcity. Therefore, an understanding of both the global and national processes concerning the transition is important if digital migration is to be perceptively explored (ibid.).

Imploring universities to abandon what he terms 'nationalistic provincialism' (a tendency to emphasise local perspectives over international approaches) Newman advocates for people to venture into the wider world in which opportunities are vast when considering issues (Newman, 1996). Chomsky weighs in this debate by stating that the global approach to issues in research holds special relevance in modern society since it yields the experience of the ever-renewed vitality of liberal education (Chomsky, 2013).

Newman observes that within the setting of contemporary university were groups advocating the retreat into 'provincialisms' of 'ethnicity', 'gender', 'sexual orientation', or some other form of 'communitarian identity of sorts' which fragmented society (Newman, 1996). Therefore, these exclusionist tendencies should be viewed as constituting the xenophobic mentality of the 'small town located far from the major metropolis', where things are happening and opportunities abound (ibid).

6.18   The Case Study and Heuristic Approaches

This research is a case study of Zimbabwe. Case studies are often taken to be synonymous with qualitative methods (Creswell, 1994 cited in Leedy, 1997). A case study intimately investigates issues about the case on which the spotlight is focusing (ibid.). Case studies are important in studying the 'why' and 'how' questions of a study (Marshall and Rossman, 1999). Marshall and Rossman observe that there are different types of case studies namely the historical, observational, situational and clinical (ibid.). In the light of this research, the historical, observational and situational case study approaches are relevant to the study. This is more so given that the study concerned the current state of digital migration in Zimbabwe as well as investigated the 'why' and 'how' of Zimbabwe's transition to digital broadcasting.

For instance, it is important to investigate the question 'why' Zimbabwe should migrate. This question is critical in locating the study within the historically based global context. 'How should Zimbabwe migrate?' is fundamentally a 'procedure question' which is concerned about the step by step processes of the migration. These steps could relate to the technical procedures the country has to go through to be digitised (Seel and Grant, 1997). More fundamentally, these processes and procedures may also involve the non-technical philosophical issues about the transition relating to the programme's political environment. This may also relate to the account of the competing political, social, economic and ideological constraints that militate against the implementation of the programme. This is important, especially against the view that Zimbabwe, like the other small countries, finds herself required to implement global strategic objectives while facing internal political, economic and ideological constraints, which sometimes militate against such international obligations (ITU ICT toolkit 2006). Therefore, the question about how Zimbabwe should migrate becomes critical.

The case study approach, in the views of Tichapondwa (2013), has established characteristics which are as follows:

● It focuses on a discrete 'entity' or single 'site' of analysis.

● It primates detailed data mining through the use of different instruments during a long period of time.

As a result, despite being on full time studies, the researcher spent much of the three years of study in the field. The study depends on a naturalistic approach, where the researcher develops a complex, holistic picture, analyses documents, details views of informants, conducts the study in its natural settings, deals

with contemporary issues and strives to provide vicarious feelings of 'being there' within its real life context to the reader (Tichapondwa, 2013). A unity of human activity embedded in the real world can only be studied or understood in that context. By adopting a case study approach, the researcher had to ensure that data collection would be conducted in the natural settings of the respondents in which the study's problem is framed (Creswell, 1994 cited in Leedy, 1997). The case study approach enabled the researcher to evaluate the respondents' attitude toward digital migration.

The differences between intellectuals and practitioners about DBM during interviews were so vivid that one would be tempted to think of universities as ivory towers lacking in practice. The detached analysis of the transition by some scholars as opposed to the engaged discourses with government officials, engineers and technicians involved in the programme was a case in point. In fact one academic illustrated this during an interview by stating that "we live in the head…that is why we as academics are easily forgotten by governments". Accounting for attitudes, values and feelings about a phenomenon such as digital migration is one of the strengths of the case study approach over alternative designs. As a result, the case study approach was capable of evaluating the complex question of 'why' Zimbabwe should migrate. The case study approach probed deeply for answers to the questions about digital migration in Zimbabwe. Therefore, the case study approach analyses issues intensely (Ulrich, 2011).

However, it should be observed that just like any other design, the case study has weaknesses (Leedy and Ormrod, 2010). It is criticised for the lack of 'internal reliability' (Ulrich, 2011). Any other researcher using the approach at different times on the same case may produce different conclusions (ibid.). Therefore, findings from a case study cannot be generalised (Leedy and Ormrod, 2010). They are specific to context. The above shortcomings of the case study approach were dealt with through incorporating different methods of data collection about phenomenon being researched (Creswell, 1994 cited in Leedy, 1997). This ensured reliability for the study.

The triangulation of interviews, observation and document analysis in this study was taken as a measure to ensure the reliability of the findings of the study (Maxwell, 1997, Carter and Miles 2007). As pointed out by Rubin and Rubin, there are at least five grounds upon which the quality of a qualitative research study is judged. These are outcome validity, process validity, democratic validity, catalytic validity and dialogic validity (Rubin and Rubin, 1995). Turning to each of the criteria, ooutcome validity refers to the impact that the case study has on practice and the extent to which the enquiry has led to the resolution of the problem. This study seeks practical solutions pertaining to the implementation of digital migration in Zimbabwe.

Furthermore, the topicality of the debate on digital migration globally, added weight to the case study approach. Investigating Zimbabwe's efforts to fulfill her international obligations in terms of the global regulatory regimens regarding digital migration within given timelines is a practical issue that seeks practical answers. Process validity refers to the appropriateness of the methods and instruments adapted to 'respond' to the questions being investigated. In this regard, this research will be deemed valid to the extent that it accounts for the current broadcasting situation vis-à-vis digital migration in Zimbabwe, and by extension, the larger context of the global environment. Also, it seeks to answer the sub questions to the study as laid out in chapter 1. Democratic validity entails the extent to which the study makes an effort to consult all key stakeholders in the field of study. This is the reason why the study is premised on a purposive sample of 26 respondents. It is deemed that the selected respondents are key figures in issues of digital migration in one respect or the other, as observable in the views they proffer during interviews. Catalytic validity in this research relates to the transformative nature of the study. Indeed, digital migration is a story of the moment, whose potential for the Zimbabwean society is yet to be told. Lastly, this study submits itself to dialogical validity. Dialogical validity entails the extent to which a study may prompt debates across the spectrum of human life.

Fig 6.5: Detailed representation of the State of knowledge:

Fig. 1.30 Available and undiscovered knowledge in the universe
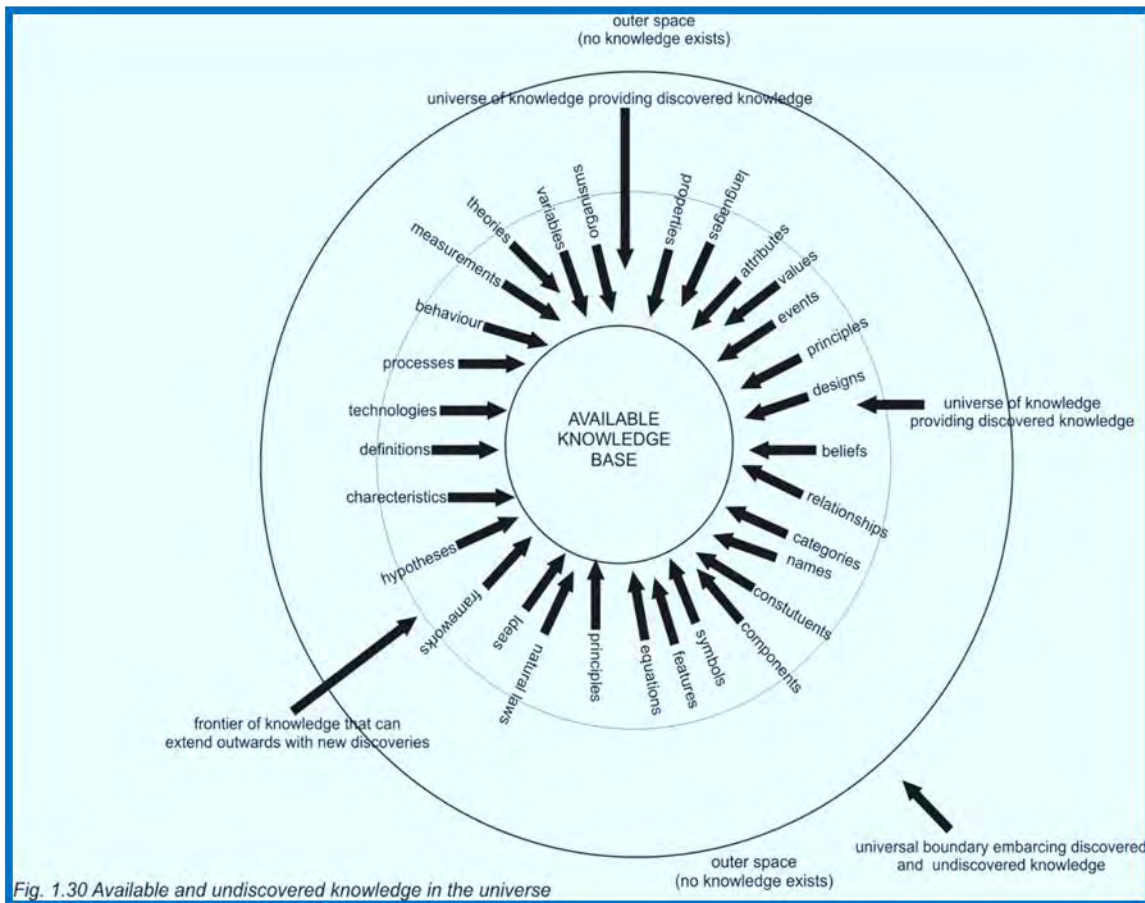
Source: Research Methods module: SHCM453 (ZOU) 2014

Dubberley observes that there are many paradigms that we use in guiding our actions: the adversarial paradigm that guides the legal system, the judgmental paradigm that guides the selection of Olympic winners, the religious paradigm that guides the spiritual and moral life, and many others (Dubberley, 2010)

The concern here, however, is with the search for a research methodology that can yield understanding of Zimbabwe's digital transition in the broadcasting sector. Broadly, there are two types of research methodology (Creswell, 2009; Leedy and Ormrod, 2010). These are qualitative and quantitative. The qualitative and quantitative research methodologies vary on a continuum, ranging from objective reality that exists independently of human conception, to the notion of multiple, subjective realities that are socially constructed (Blanche and Durhem, 2006). Before delving into the analysis of research moments of these methodologies in media and communication studies, below is a brief analysis of each methodology.

6.19   The Qualitative Moment in Media Studies

Therefore, practically, the adoption of the most appropriate and efficient method for a study is undergirded by the researcher's firm knowledge of 'achieving meaning' of a complex world. This issue is underpinned by the question of how reality can be achieved in a specific field of study. Philosophically, this is referred to as ontology (Fourie, 2007:233). In this case, the search for insight into issues of a country-specific broadcasting digital migration in a complex global environment lends itself to the qualitative case study approach. A deeper consideration of the qualitative paradigm will be outlined below under the research's philosophical assumptions.

Until recently, qualitative research methods were regarded as poor science. As a result, many researchers were sceptical to use them (Maarsland *et. al.,* 1992). This is indeed true of most early studies in media. However, Mouton observes that the qualitative paradigm has, since the 1980s, gained prominence especially in development studies. Concerning intelligence, Quiggin (2007) observes that although intelligence still bears the imprint of a young discipline, its moment in qualitative research is indisputable since this subject by nature requires the insider approach.

The major reason for the adoption of the qualitative method over the quantitative is that far from being an issue of figures, digital migration is a describable process. It is about a practical story of a real country and of the world undergoing complex processes and procedures in the communication and information sector. These processes and procedures need to be understood by everybody as they have a bearing on people's lives.

This chapter presented the study's philosophical assumptions, design and the methods used to complete the research. It comprises the following sections: the method, research taxonomy and design, sampling plan, research tools, a short biographical note of the researcher, access and ethical issues, data collection procedure, analysis and a summary.

6.20   Assessing the Validity of the Research

Since this study is predominantly an interpretive and narra*tive* exploration of Zimbabwe's digital migration in the broadcasting sector, the question that arises is, "How will the researcher ensure the 'goodness' or 'quality' of the research?". Gummesson (2000) observes that getting acceptance for scientific work is partially an intellectual achievement. As alluded earlier, there are moments when qualitative research

evolved through stages when it was considered poor science, unworthy of use to collect data for scientific considerations (Marshall and Rossman, 1999).

Issues about quality and credibility in qualitative research are critical (Creswell, 2009). Historically, the quantitative research tradition has had a richer and dominant legacy over qualitative (Holloway and Wheeler, 2000). At some stage, "even the most carefully undertaken qualitative studies were dismissed as nothing more than merely interesting descriptions of a phenomenon" (ibid.).

In this regard, there are alternative ways of measuring the worth of a qualitative research as opposed to quantitative (Creswell, 2009). Instead of 'validity' and 'reliability,' as in the case of the quantitative tradition, the soundness of a qualitative research, is described in terms of 'trustworthiness' and 'authenticity' as alternatives and parallel terms to the former (ibid.). As observed by Holloway and Wheeler the criteria for benchmarking the soundness for a positivist research is its capacity for generalisability, relevance and objectivity, whereas for the interpretativist approach, it should be judged in terms of the authenticity, credibility, transferability, dependability, reflexivity and conformability of the research results (Holloway and Wheeler, 2000).

The strength behind this view is observed by Holt (2003) that people's experiences do not occur in a vacuum and so their 'social worlds' may easily be demonstrated by matching them up with other similarly lived experiences (ibid.). Richardson notes the need to assess the substantive contribution of the study to the understanding of social life as a measure for its worthiness (Richardson, 2000). He also indicates that this aesthetic merit needs to be examined if it succeeds aesthetically; if the text is artistically shaped, satisfyingly compelling and not boring.

The notion of reflexivity is also paramount to the worthiness of a qualitative study; it is how the author came to write the text, how subjective the author has been, both as a narrator and an actor of the text. Richardson (2000) adds that impactfulness would also aid to the strength of the study. This is when the study generates (either emotionally and/or intellectually) new questions in the mind of the reader or commits them to action. Thus, Richardson (2000) concludes that this type of study should express a reality, which is an authentic lived experience. The current study will consider the preceding views with a great measure of importance when it comes to the analysis of data, while at the same time also taking heed of Ellis's (2004) warning that criteria are found rather than made.

6.21   Key Research Processes: Decision and the Selection of Research Participants

Every study has a sampling plan which involves 'the selection of cases' (Hart, 2007). In answering the research questions and fulfilling the aim and objectives of this study, decisions about the aspects of life to be examined were made. This involved the recreation of reality through revisiting elements of our lives (ibid.). Hart (2007) observes that the selection of sources (documents; texts; websites) is driven by the theoretical considerations, such as the aim of the study, research questions, as well as pragmatic considerations such as time frame and level of study (ibid.). Unlike quantitative research designs which typically require large samples from where generalisations can be drawn, in the qualitative strategies, researchers are searching for small groups of people who are a product of the phenomena being explored (ibid.). Concerning the use of history as a method of study, Blanche and Durhem, (2006) observe that researchers basically have two selection options, namely the critical case and theoretical sampling techniques (Blanche and Durhem, 2006). These two techniques are consistent with the narrative and descriptive qualitative research paradigm (ibid.).

Sampling Plan for Understanding Zimbabwe's Transition to Digital Broadcasting in the Global Age

Identification of the Population in Context

The population interest in this study comprises media analysts, critics and government officials. In this study, media analysts comprise academics and intellectuals who specialise in the analysis of the mass media (MEC report, 2002). Media analysts often deal with wide areas of media analysis, including policy, infrastructure, technology, investment, regulation and law (MEC report, 2002). Media critics are identified as those who specialise in evaluating the contents and programmes of various media houses and media outlets (ibid.). Globally, issues related to television, its policies and operations have always been the domain of bureaucrats in government and perhaps a few in societies, with the kind of mental software capable of such technical issues (Chiumbu and Mazango, 2000). Therefore, this study adopted a purposive selection plan.

Purposive selection of interviewees, as the name implies, is based on the potential for the interviewee to make significant contribution to the concerns of the study which can be verifiable (DU PLooy, 2006). The selected interviewees should have undoubted knowledge about the issues under research. Leedy and Ormrod point out that interview for purposeful sampling should be between 5 to 25 interviewees if meaningful patterns of a phenomenon are to be drawn (Leedy and Ormrod, 2010). However, this study

aimed at carrying out at least 26 interviews with people drawn from different organisations as identified in the sample of the study. On average, this will give at least 2 to 3 people per organisation.

While it was originally the intention of the researcher to carry out personal interviews, some interviewees, especially government officials, insisted on submitting their views in written form, whilst others opted for oral interviews. In such cases, still it remained important to go back to the officials for verification once the researcher had received a copy of the written evidence. The researcher encouraged interviewees to present both oral and written evidence, if they could, as this would minimise the chances of their views being distorted at transcription.

Methods of the Study: Instrumentation

The study is a mixture of textual analysis, observation and interviews. Textual analysis is a tool that primates the analysis of data from published material (Blanche and Durhem, 2006). Observation is whereby the researcher is part of the community that they are studying (Ellis, 2004). This tool, according to Ellis, provides the researcher with the opportunity to explore reality from a normal setting (ibid.). The other tool used in this research is the interview.

Whatever research paradigm one may opt for, it is practically impossible to avoid interviews (Parton, 2002). According to Parton (2002), interviews enable researchers to get direct quotations from people about their experiences, opinions, feelings, and knowledge concerning aspects of their lives from their worldview (Parton, 2002). As a result, interviews are capable of strengthening the results of the research as they speak directly to people's lives (Blanche and Durhem, 2006).

Combined with detailed descriptions of people's activities, behaviours, actions, and the full range of interpersonal interactions and organisational processes and procedures that are part of observable human experience, Blanche and Durhem, (2006) observes that the qualitative research interview is stronger and reliable (ibid.). The data from qualitative research interview is typically from fieldwork (ibid.). It is important to observe that auto ethnography puts the self at the centre of sociological observation and analysis as observed by Warren and Karner (2005). Esterberg (2003) says the method strives towards understanding the researcher's own experiences by relating the story while being able to reflect on these experiences (Esterberg, 2003).

This view is sensible if one is to take into account Atkinson's (1998) observation that the life-stories cover individuals' lives and, most importantly, the role they play in their communities (Atkinson, 1998). He believes that it is through listening to stories that one gains context and recognises meaning, because in them the unspoken is made understandable, the hidden made visible, and the confusing is made clear (ibid.). This is crucial, given the paradoxes that surround the two concepts (intelligence and development) that are pivotal to the objectives of this study as observed earlier.

The Dynamics of Interviews in Research

On the 1st of October 2014, fieldwork commenced. This was after months of preparation for field work. I had learnt that there is no second chance for data collection. If you ventured into it, unsure of what you wanted, the study's objectives would not be met and the fault would lie squarely with the researcher. This would proverbially rob the researcher of the integrity and thus put to disrepute the integrity of the supervisor and the sponsoring university to which the study is presented. As a result I took my time to prepare for it. I could not allow myself to be rushed by the tight schedule before me. I had to be sure of the next step. Reading and re-reading literature about digital broadcasting migration helped me to focus and refocus my interview schedule.

Ultimately, I realised that my interview schedule had been originally a composite whole and had two distinct sections. These were technical and the non-technical questions. Had I rushed into the field, I could have sacrificed one of these sections, and the result would have been an incomplete study.

Interviews gave direct quotes which could be verified in case of the need for clarification of an issue during transcription (Blanche and Durhem, 2006). Verification has become a key ethical issue as no one wants their views about an issue misquoted or mis-represented (Atkinson, 1998). Therefore, in general, when interviews are properly administered, they yield credible data of great ethical consideration (Bordens and Abott, 2008). Verification ensures that researchers refrain from tampering with interviewees' opinions. In my view, interviews are a measure to demonstrate to the university authorities that one was indeed in the field as the researcher has to get a signed consent form for every interview session conducted.

Carrying out Interviews: Processes and Procedures

Interviews were the main tools by which this study gathered data. Participants to this study were drawn from selected Zimbabwean universities, government officials, and quasi-government institutions in the

broadcasting sector. Among the selected universities are the University of Zimbabwe (UZ), Midlands State University (MSU), National University of Science and Technology (NUST), Zimbabwe Open University (ZOU). The selection of these universities is based on the fact that the universities offer programmes on media and communication studies.

A significant process and procedure for carrying out the interviews for this study was that unless the interviewee felt comfortable meeting elsewhere, most interviews were conducted at the interviewees' offices. This setting made it easy for them to cross-check facts, if need be. After all, they were in their territory, which gave them the territorial advantage. At the end of the interview session, I would be presented with complimentary documentary analysis on digital broadcasting migration. Such material included journals, word documents they had produced on the subject (referenced or unreferenced, magazines and other researches on the subject). This would have not happened if the interview had been conducted in a different location. The interviewees' offices were thus ideal for the production of knowledge. Most importantly, the interviewee had all the resources for the task in their offices than if the interview had been carried out elsewhere.

However, a few of the interviews were conducted in cafes. Some interviewees felt it was important to separate the research activity from the activities of their employment, so they requested to conduct the interview in private places. The challenge with this is that when they chose an expensive place, the researcher had to be prepared to foot the bill from their limited resources. Cafes were the biggest challenge since such places were public.

I always opened my interview sessions by a full introduction of myself. I would then explain issues of confidentiality. This is a cardinal ethical rule in research. I also had to explain the option of recording the interview. In this case, the interviewee had to be asked whether they were comfortable with the interview being recorded. I had bought a Samsung Galaxy Tab 3 for the purpose.

My laptop also was used to record. Recording authenticated the interviews as they would be used later to demonstrate that fieldwork actually took place apart from the defence viva. If the interviewee had consented to these procedures, they would sign the consent forms to declare their agreement. Recording equipment would be set and the interview would start.

The strategy is to start the interview with grand tour questions before moving into the more substantial questions that relate to the research questions and content areas explored in literature (Tindall, 2007). This

was to extract as much information as possible at the earliest possible opportunity before fatigue settled in. At some point in the interview, the participants were unclear or gave vague statements. To follow up on these, I used probes to gather additional information and stories. With a semi-structured protocol, I was open to different streams of conversation. If the participant felt the need to expand upon an issue or dedicate more time to storytelling, we diverted from the scripted questions and probes and followed the tangential discussion as long as it was relevant to the Research Questions (ibid.). At the conclusion of each interview, I asked the participant if he or she had anything to add or if I missed anything major in our discussion. The average time for an interview was an hour. All interviews were recorded and transcribed.

Interviews with government officials drawn from the ministries and departments responsible for information and communication were conducted in order to obtain official views on the implementation of the digital programme. More interviews were also conducted with officials from the selected quasi-government departments, such as Transmedia, POTRAZ and BAZ. POTRAZ coordinates the use of telecommunications in Zimbabwe and fosters co-operation among all stakeholders in the telecommunications industry. These stakeholders include those who offer both fixed and mobile phones in Zimbabwe (POTRAZ Home page 2014). POTRAZ is the national agency that liaises with the ITU on developments in the country's telecommunications sector. Transmedia is Zimbabwe's signal carrier in the broadcasting sector. It is the agency responsible for the technical side of broadcasting transmission and is thus at the centre of digitalisation in Zimbabwe (Transmedia Home Page 2013). The Broadcasting Authority of Zimbabwe is the licensing authority in the broadcasting sector in Zimbabwe. BAZ is responsible for issuing out broadcasting authority to new players in the field and revoking those that would have abused that authority (BAZ report, 2003).

As I reflected on the interview schedule I had produced during the preparation for the colloquium in the first year of my studies at UKZN before fieldwork, I realised how shallow it was in light of the broadness of the area of study I was dealing with. This prompted me to add some few more questions dedicated to the technical aspects of the study. Specifically, these additional questions sought understanding on the issues of spectrum management from a Zimbabwean perspective. There was also need to understand how Zimbabwe was coping with the administration and monitoring of spectrum to minimise interferences and other uncouth behaviour with regards to the management of frequencies in the country (Medeisis, 2009). These issues are important to the complete understanding of Zimbabwe's digital migration. The issues of spectrum monitoring and control of new media fall within the purview of spectrum management and

spectrum policy (Powell, 2002). Spectrum management is essential to the maximisation of the benefits offered by spectrum-based services and devices (Medeisis, 2009).

6.22   Peculiar Ethical Considerations and the Methods used for the Study

Although issues of ethics were discussed earlier, there are peculiar ethical issues related to interviews and method of research which require attention in this research. In my view, interviews as a primary source of information are associated with unique ethical considerations that may not affect other research tools (Leedy and Ormrod, 2010).

In Zimbabwe, the Official Secrecy Act of 1973 (OSA) and the Access to Information and Protection of Privacy Act 2002 (AIPPA) stipulate the conditions and procedure for interviews with government officials within the Zimbabwean context. OSA stipulates that permission for interviews with government officials takes at least 21 days of approval by the head of ministry, who in the case of Zimbabwe is a permanent secretary of the respective ministry.

Apart from the general framework set out by the legal instruments highlighted above, specific organisations such as POTRAZ laid out specific procedures and protocols to be followed before interviews were carried out. This involved submitting a schedule of questions before the actual interview. This would enable the head of the organisation to study the questions before the interview and, in some cases, circulate the questions among staff in the technical department for their opinions before interviews.

6.23   Secondary Sources in Understanding Digital Broadcasting Migration

The use of secondary sources is critical in establishing how similar issues related to the study have been dealt with by other researchers who came before my study.

This helps avoid duplication of effort. It helped in locating the niche for this study in the community of scholarship at the global level. In simple terms, secondary sources are critical in establishing the gaps in knowledge (Chirume 2012). Data drawn from books, magazines, policy statements and any such artefacts, feeds into the textual analysis of the research (Polkinghorne 2005).

6.24   Chapter Summary and Conclusion

The study's taxonomy and design were discussed in this chapter. The current chapter also dwelt on the likely errors associated with the qualitative research paradigm and how the weaknesses were dealt with in

the current study as a way of minimising their impact on the quality of the study. Also discussed in the current chapter were the study's sampling procedures. A description of instruments used for the collection data was also offered in the current chapter. Chapter 6 dealt with the study's theory as it relates to data collection. At least two distinct roles of theory in research were outlined as those of understanding or meaning and collection or methodology. Chapter 6 dwelt on the role of theory in terms of data collection. Attention in Chapter 7 shifted towards the reporting of the research findings, their analysis and interpretation.

SECTION IV: RESEARCH FINDINGS

DRAFT CHAPTER 7

INSIDE THE RESEARCH FINDINGS

There is a tide in the affairs of men.
Which, taken at the flood, leads on to fortune;
Omitted, all the voyage of their life
Is bound in shallows and in miseries.
On such a full sea are we now afloat,
And we must take the current when it serves,
Or lose our ventures.

William Shakespeare: Julius Caesar, **Act 4, scene 3, 218–224**

7.0 Setting the stage

The previous chapter outlined and examined the ways and means by which data to complete the study was gathered. Chapter 5 also explored the ethical considerations to the study.

7.1 Reporting, Analysis and Interpretation of the Research Findings: An Introduction

The present chapter reports, analyses and interprets the findings of the study. The analysis and interpretation of the findings of a study, is concerned with the search for things behind the surface (Denscombe, 2007). It involves the unpacking of the core elements of an issue (Saunders, *et. al.,* 2009; Struwig, and Stead, 2013). Perceptively, whilst analysis relates to how a phenomenon works, interpretation is about the understanding or comprehension of an issue (Denscombe, 2007).

Probing the findings of this study involved the identification of the critical elements of the issue under consideration. These critical elements are linked to the study's aim and objectives as outlined in Chapter 1. Notably, different kinds of analysis exist (Denscombe, 2007). The options to analysis range from those drawn from the quantitative methodology to those linked to the qualitative approaches (ibid.). The approaches (whether in data collection or analysis) give a clue as to the assumptions of a researcher (Zikmund, 2003).

On display in **fig. 7.1** below is an illustration of the overview of the linkages of the methods used for the collection of information for the study:

Fig 7.1: Overview of the linkages of the methods used for the collection of information for the study
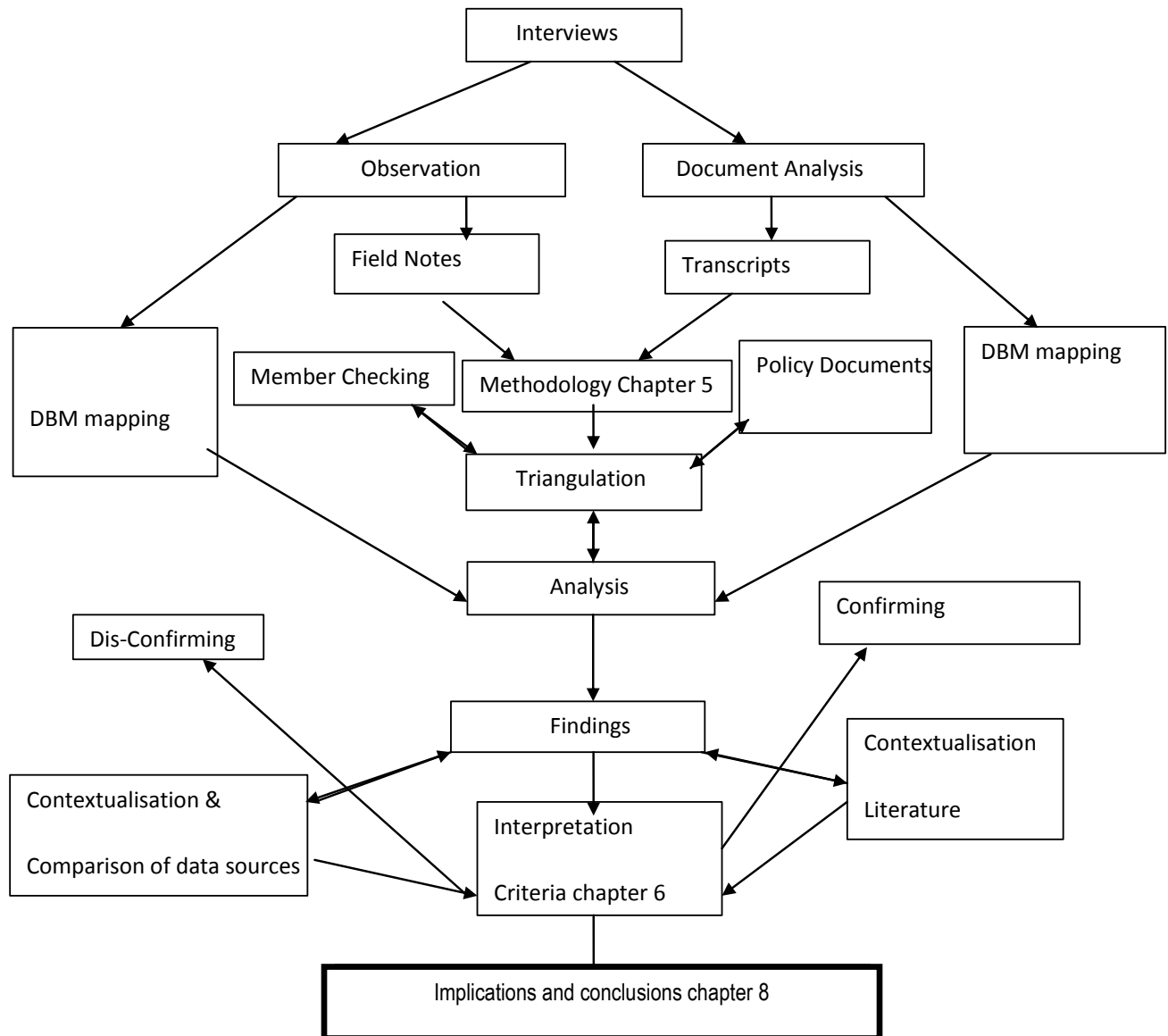
Source: Johnston Amanda Kim (2011:91)

From methodological and analytic viewpoints, both quantitative and qualitative approaches are considered to be not mutually exclusive (Denscombe, 2007). The approaches can be used in combination for analysing issues, unproblematically (Trochim, 2001).

Mixed Methods and Challenges in Analysis: A Clash of Values

The use of the quantitative and qualitative approaches to analysis for the study brought about intriguing dynamics. One of the interesting aspects of using mixed methods in the analysis of the findings of the research was the tendency of the well have ruined the conclusions of the study as explained below. The analysis and interpretation of findings of a study can be such a fluid, contestable and slippery issue. Whereas, from a quantitative analytical framework, the use of the terms 'some' referring to respondents is considered 'unscholarly', from the qualitative approaches, such terms can be used unproblematically (Mouton 2009). Further, the views and opinions of a person from a qualitative viewpoint are considered to be equally important to those of a multitude quantitative analytical tool to impose meaning and in some cases, even overshadow the qualitative voice during analysis (Gillham, 2000). I had to bear at the back of my mind the challenges of using the mixed methods in analysis. Practically, if I had allowed myself to be 'carried away' by the compelling beauty of the quantitative approaches during the analysis of the findings of the study, I might as in a survey (Padgett, 2004). Each voice in terms of interviews carries independent weight in relation to a study's aim and objectives. Concerning the quantitative approaches, the issue was about numbers. However, from a qualitative viewpoint, the views and opinions of a person could lead to conclusions of a credible nature (O'Dawyer, 2004). Traditionally, 'figures' have been used as a compelling form of language (Gillham, 2000). They convey messages in a powerful manner than words. In my view, the 'figures' two people out of ten said they didn't like the programme, creates meaning beyond the words. The additional meaning to be derived out of such a sentence, such as the above, would be that the 'majority' of the people were in favour of the programme as only two of the ten people did not like the programme. Therefore the programme was quite needful.

However, from a qualitative viewpoint, several meanings can be derived from the same scenario beyond what the majority and minority might have said. For instance, the qualitative researcher may want to probe the reasons behind the positions of the minority and the majority. Further the idea may also be investigating the quality of the views of the two groups. In all cases this may, in my view, lead to different conclusions. It is this clash in values which might be behind some of the reason why qualitative analysis for a long time was considered 'less scientific' and therefore not considered research. Over the page is Figure 7.2 indicating the approach to analysis of research data and findings for both the quantitative and qualitative analysis:

Data Preparation

Quantitative Data   **Qualitative Data**

Coding (Which normally takes place   Transcribing the text or visual data
Before data collection) Categorising   Preparation Of Data and loading to
The data checking the Data   software (if applicable)

Initial Exploration of research findings

Look for Obvious Trends or Corrections   Look for Obvious recurrent Themes or
                                                                            Issues. Add Notes to The Data
                                                                            Write memos to capture Ideas

Analysis of research findings

Use of Statistical test, eg Descriptive   Code the data,Group the codes into
Statistics, factor analysis.   categories or Themes .Comparison of
Link to research questions or   categories and themes
hypothesis   quest for concepts(or fewer ,more
                                                                        abstract categories)that encapsulate
                                                                        the categories

Represantation and display of research findings

Tables   Written interpretation of the findings
Figures   illustration of points by pictures
Written interpretation of statistical   Use of visual models figures and tables
 findings

Validation of the Data

External benchmarks   Data and method triangulation
Internal consistency   Member validation
Comparison with alternative   Comparison with alternative
explanations   explanations

Figure 7.2:   Methods of data collection

Source: adapted from Creswell and Plano Clarke (2007: page)

The Instrumentation of the Study and the Composition of Participants for Primary Data

The general trends about the demographics of respondents to a study, in terms of categories such as the gender of the interviewees, level of education and any other peculiar attributes are critical to the reporting of a research's findings (Struwig and Stead (2013). Therefore, explaining the demographics of the respondents of a study regarding their gender, level of education and many other categories is a critical function of a research as these qualities have a bearing on a person's worldview. Ultimately a person's worldview impacts the nature of views about an issue.

The present chapter not only reported on the findings of the study, but also analysed and explained the findings in relation to the aim and objectives of the study. The effort to ensure the equal apportionment of emphasis to the discussion of the three sections of the study, that is general questions, technical questions and theoretical questions, was made. The creation of the sections as highlighted above was meant for the in-depth treatment of the aspects involved in the study. Most importantly, an interesting issue related to the presentation and analysis of data was the fact that although I had targeted 26 people for interviews only 21 were actually interviewed. The reasons for this are considered below.

As observed in chapter 5, the study's sampling strategy was at two levels. At one level my sample targeted specific organisations and institutions. At a different level, I focused on specific individuals in the case of media analysts and critics as some of them declined affiliation of organisations. The initial target had been to interview at least two people from the organisations and institutions sampled for the study. However, it later turned out the organisations targeted for the study fielded one person each. The reason for this was that the views to be advanced by their representatives were after all meant to reflect the organisation's position.

Original sample	Targeted number	Actual number of people interviewed	Short fall	Gender	Qualifications
Government Ministries	4	2	2	2 Males	1 Masters and 1 PhD
UZ	2	1	1	Male	PhD
NUST	2	1	1	Male	Professor
MSU	2	2	0	2 Males	Masters studying for PhDs
ZOU	2	2	0	2 Males	2 Masters
ZBH	2	2	0	2 Males	Technician and Masters
ZIMPAPERS	2	2	0	2 Males	2 Masters and 1 studying for a PhD
POTRAZ	2	1	1	Male	Engineer
TRANSMEDIA	1	1	0	Female	Masters
BAZ	1	1	0	Male	Engineer
Mobile-cellular representatives	3	3	0	2 Males and Female	2 Masters and PhD
Media Critics and Analysts	3	3	0	3 Males	2 Masters and PhD
Total	**26**	**21**	**5**	**19Males 2females**	

Table 7.2:   The organisations and institutions which were targeted for the study and the people actually interviewed

Source: Developed for Study

TARGETED VERSUS ACTUAL SAMPLE BY SAMPLE SEGMENT

	Governm ent Ministrie s	UZ	NUST	MSU	ZOU	ZBH	ZIPAPERS	POTRAZ	TRANSM EDIA	BAZ	Mobile-cellular represent atives	Media Critics and Analysts
▪Targeted number	4	2	2	2	2	2	2	2	1	1	3	3
▪Actual number of people interviewed	2	1	1	2	2	2	2	1	1	1	3	3

Fig. 7.2: The Sample:

Educational Attainment

■ Professorship ■ Doctorate ■ Masters ■ Graduate/Professional Qualifications
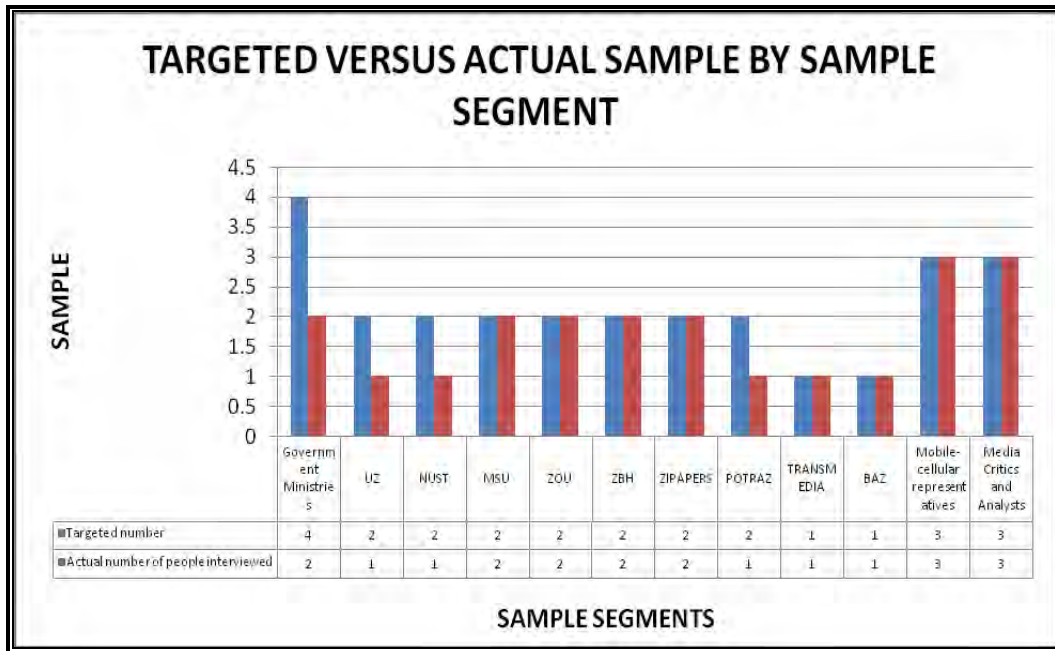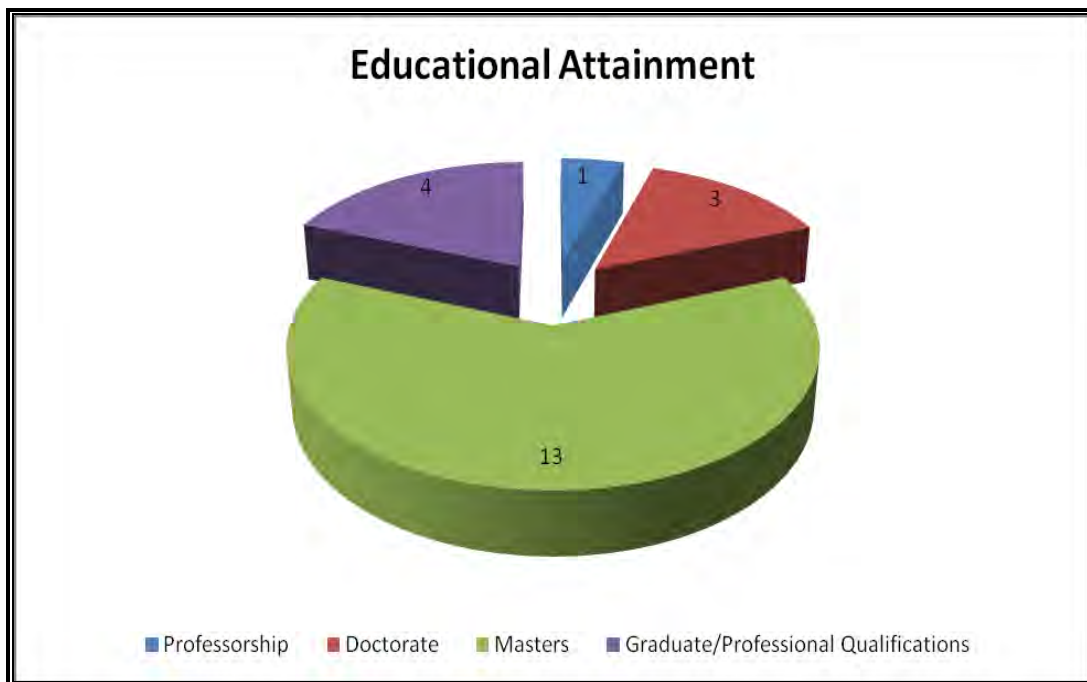
Fig 7.3 Educational qualifications of the interviewees:

Source: adapted Chirume, 2008

Highlighted were the basic statics regarding the number of people interviewed during the study? The interpretations of the basic figures are critical in highlighting at a glance the nature and some of the silent

issues about the study's sample (Palys, 2008). The assumption behind a purposive sample is that those sampled for the study are supposed to be interviewed (ibid.). However, in the case of the current study, the above assumption remained as such, an assumption. Quite notably the response rate in the case of interviews is critical in reflecting the nature of a purposive sample. The shortfall of 5 interviewees from a targeted sample of 26 was discussed below under the sampling strategy and its limitations.

	FREQUENCY	PERCENTAGE
NUMBER OF RESPONDENTS	21	80.76
THOSE WHO DIDN'T RESPOND	5	19.24
TOTAL	26	100

Table 7.3: The Response Rate:

Source: Developed for Study

7.2 The Sampling Strategy and Limitations: A Practical Vview

Naturally, researchers are an ambitious lot and so was I. They are only humbled by the practical dynamics of the events in the field. Chapter 1 highlighted some of the challenges and constraints to the study and the possible solutions. Given the dynamic that some of organisations and institutions targeted for the study fielded only a representative each. This resulted in an 80.76 percent response rate. To me, the 80.76 response rate was so meaningful as I had suffered a mild stroke during the first year of my studies leading to a partial disruption of the studies. Since this unexpected event occurred before I had carried out interviews I feared that my fieldwork would never occur.

However, through the patient encouragement of my supervisor and sheer determination on my part, I remained focused on my studies. Except for two universities, where I had to adopt the telephone interview due to the distances involved, I managed to visit the other organisations and individuals targeted for study.

RESPONSE RATE (PERCENTAGE)

19.24

80.76

■ THOSE WHO RESPONDED   ■ THOSE WHO DIDN'T RESPOND
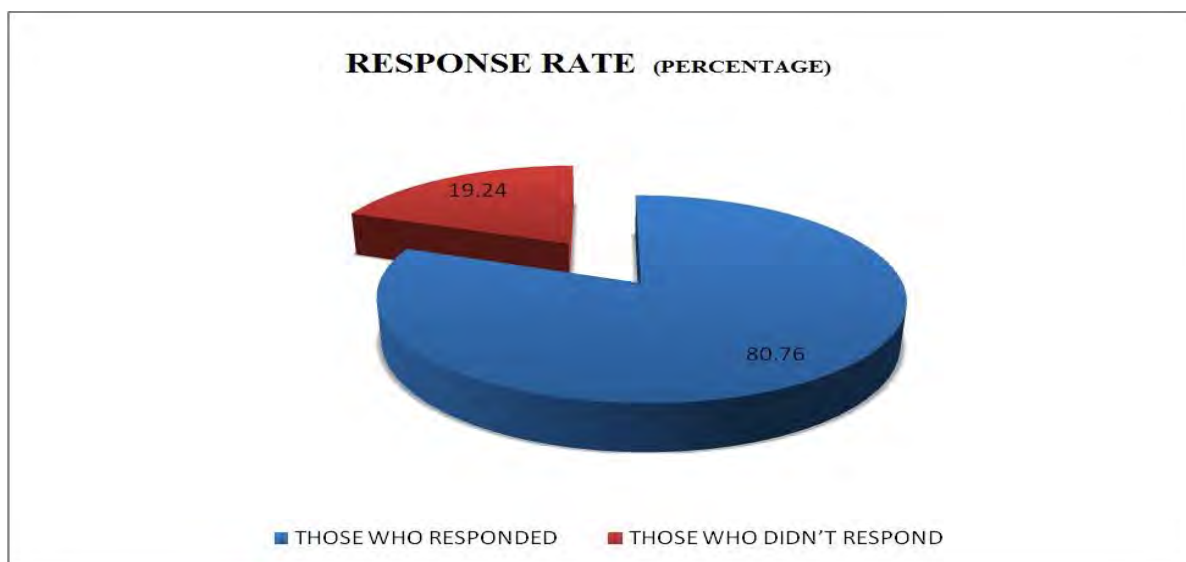
Fig. 7.4   The Response Rate:

Source: adapted Erasmus Chirume, 2008:50

7.3   The Gender Composition of Interviewees: A Critical Reflection

The gender composition of the interviewees fielded by the organisations which were targeted for the study caught my attention. The majority of interviewees fielded for the study were males. This in my opinion suggested that issues of DBM in Zimbabwe were somewhat discriminatory against women as only two of the 21 people who were actually interviewed were female. However a decisive conclusion on this matter would most probably require a larger sample.

	FREQUENCY	PERCENTAGE
MALES	19	73.08
FEMALES	2	7.69
THOSE WHO WERE NOT INTERVIEWED (ALL WERE MALES)	5	19.23
TOTAL	26	100

Table 7.1 The Demographics of the interviewees in terms of their Gender Categories

Source: developed for the study

The data contained above can be further illustrated as indicated in **fig.7.4** (below)

Fig 7.5 Response Rate by Gender

RESPONSE RATE BY GENDER

9.50%

90.50%

■ MALES ■ FEMALES
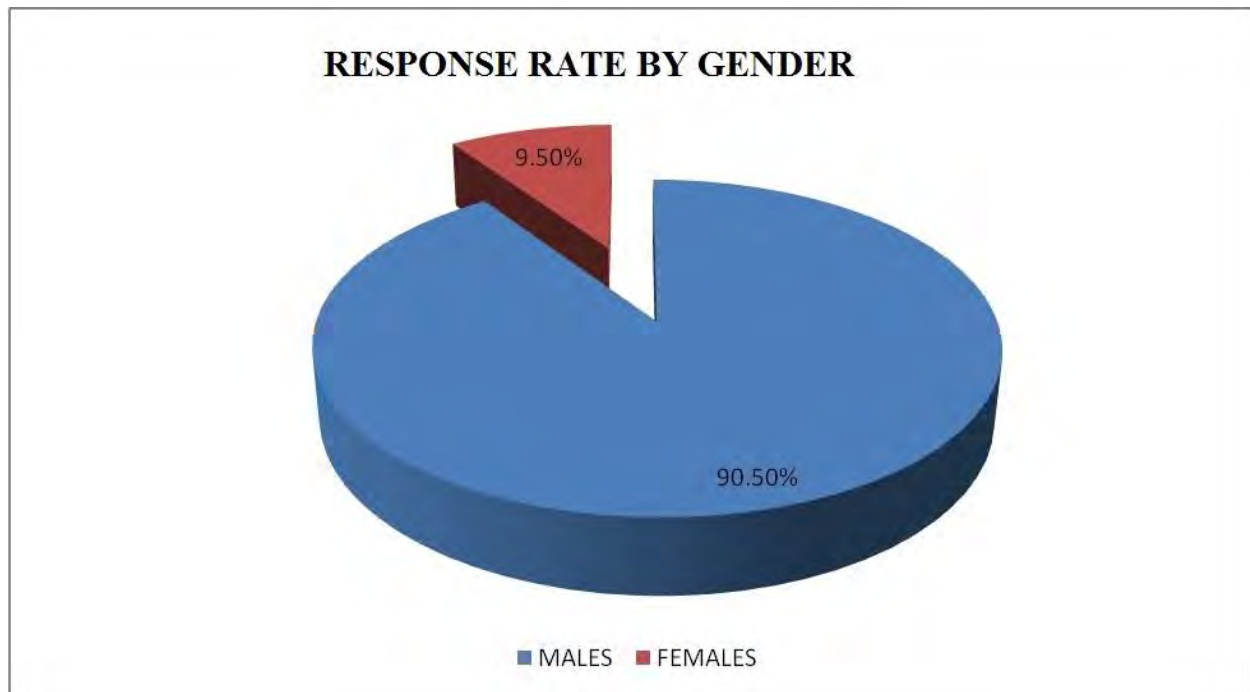
Source: adapted Chirume, 2008

Practically, the presentation of findings, analysis and interpretation of the study's findings involved the re-engagement with the aims and objectives of the study as outlined in chapter 1. Therefore, the restating of the aim and objectives of the study as a precursor to data presentation, analysis and interpretation became imperative. *The primary aim of the study was to develop insights on DBM in Zimbabwe and related areas.*

The Interview as a Key to the Secrets of the Heart

I learnt much more through interviews about DNM, far more than I would have hoped to read on my own. People explained to me the issues and concepts that I could not have understood by myself, just through reading. As the primary tool for data collection for the study, the interview received greater attention regarding analysis and interpretation. However, the soundness and credibility of the views from primary sources such as interviews were corroborated through documented analysis. This was the strongest benefit of combining methods in terms of the analysis and interpretation of the findings of a research (Polkinghome, 2005). The linkages between interviews and document analysis and to some extent the observation method, demonstrated the strength of the triangulation of the methods of analysis

(Polkinghome, 2005). This assisted the researcher to use one method of analysis to overcome the weakness of the other.

The interview was a critical method to the study which set me to the floodgates of knowledge. All this occurred in a stroke of a moment. This was the hallmark of the interview method. The interview allowed me the key to the secrets of the heart in terms of the nuggets of knowledge. As observed the interview was the major instrument through which data for the study was collected and analysed. I learnt from a practical viewpoint, that interviews varied from a simple 'chat' to an elaborate and intense engagement of an hour or more (Gillham, 2000).

The 'chat'

The chat was less formal but quite rigorous in terms of output regarding findings. The chat was an issue-based approach. It involved less formalities and pleasantries. With a chat the interviewee invited the interviewer straight into the gist of the issues at hand. They wanted to drill their points into a sensible package in as short a time as the opportunity would allow. In a chat the discussions were 'snappy' 'crisp' and 'short.' I observed that within the targeted sample, different people preferred different approaches.

Academics preferred a 'full drawn out interview' whilst, government officials and CEOs of state-owned enterprise (parastatals), complained of the lack of time as they always appeared a busy lot. Government bureaucrats preferred the relaxed informal interviews such as the chat. Chats occurred whenever there was the slightest opportunity during conferences to which the targeted government officials were delegates, speakers or officiating. An interview could be rescheduled several times until a suitable time was found.. Usually, it took time before an opportunity for an interview could be granted. What this taught me was the art of waiting. For want of a better word 'waylaying' busy government officials at conferences or any such public forums, turned out to be the fastest and easiest route by which an interview could be achieved. These strategies eventually become the habits of a practical researcher. As a result the 'chat' was used effectively with the delegates during conferences and symposiums. Engineers and technicians appeared to be people of few words. As compared to academics, engineers preferred the straight forward and formulaic language of the engineering field. As a result, I learnt the distinction between the technical language and academic language. Engineers used technical language, which once mustered would be simple and straightforward. Despite this observation engineering jargon could be complex and confusing to a lay person. The language of academics was profound and relatively difficult to decipher.

The fact that DBM straddled disciplines such as engineering and cultural studies even made the issue of language in the case of the study pertinent. There were relative deficiencies concerning technical language among non-engineers and technicians in explaining technical aspects linked with the programme. As for the researcher it was a journey of discovery. I learnt a lot more about DBM than I would have known or even hoped to read on my own. I realised how naively innocent about the politics of digitisation I was.

Those whose views are represented here were drawn from the sample of government officials, academics and media analysts and critics as planned. At least two of the interviews were conducted telephonically. This was done in order to cut on the costs of organising a formal interview. I decided to carry telephone interviews to avoid travelling to MSU in Gweru and NUST in Bulawayo. These two locations are far away from Harare. Gweru is 200 kilometres from the capital city of Harare, whilst Bulawayo is a further 300 kilometres away. These distances implied financial cost in travelling and accommodation. Although the telephone interview is the least expensive, I realised it compromised the quality of findings, since it severely limits the period of the interview. There is not much that can be discussed over the phone. One is forced to be more focused than elaborated. With this interview method, there is little scope for reminiscing, recollection or imagination when using the phone for interviews. People may not find it exciting to engage in an elaborate discussion over the phone than face to face. As a result I limited this type of interviewing to only two of the people interviewed.

Besides the interview some of the information about the study was gleaned from documents such as government statements, policy documents, books and newspapers regarding the phenomenon. Some of the information came from the observable trends of the implementation of the programme. During conferences and workshops observation was a critical tool of data collection. Essentially I learnt to observe processes and listen to presentation with full thoughts.

Nineteen officials of the twenty-one interviewees, were male and only two were female. This issue was explained earlier in this chapter. Through gendered lenses, this discrepancy was significant as I believe it must have impacted the quality of the views contained in this study concerning DBM. My belief was that women have unique views about digitisation. Their views may have a certain quality of analysis peculiar to their gender. However, unless tested, this assertion remains speculative. Quite notably, the views of the two women I interviewed during the study were not in any way different from those of their male counterparts.

Preparation for Analysis

As observed, at UKZN, a student is taken through the mill of the research processes. Workshops, seminars and cohorts were prepared for students on different stages of research. Therefore, regarding analysis, I was exposed to a range of qualitative and quantitative analysis approaches from which to choose depending on one's research design, aim and objectives. I was exposed to descriptive statistics, regression and factor analysis, content and textual analysis. What is more, I developed facility in Statistical Package for Social Sciences (SPSS). Apart, from the quantitative software packages, I also learnt about *NVivo,* a qualitative software package for analysis. Although a chapter was devoted to data presentation, analysis and interpretation, the evaluation of issues had started as early as the idea of researching the area crossed the mind.

As one reads around the area of interest, flashes of critical thought by which the evaluation, analysis and interpretation of information come to mind naturally (Bowen, 2005). Furthermore, inferences and connections between issues around the area of focus often resulted in what "Gestalt psychologists call the 'Aha' experience in analysis" (Bowen, 2005). I found the 'Aha' moments rewarding and compelling during both data collection and analysis. The 'Aha' moments in analysis are a spontaneous experience by a researcher when there is sudden impact of insight and discovery.

During the preparation for the colloquium the 'Aha' experience, occurred to me on several occasions as my supervisor exposed me to ceaseless opportunities in terms of the lenses by which I could look at the area of interest. I experienced the same moments during the interviews for the study. During analysis also there were moments of the flashes of brilliance and the 'Aha' excitement when certain connections began to emerge. The more this occurred, the more I became confident and certain that indeed knowledge about DBM was being generated. Among some of the analysis techniques which I was exposed to during my studies at UKZN and to which I earned certificates, were Regression and factor analysis, thematic analysis and Grounded theory. Since my bias is with qualitative instruments, as earlier alluded, I adopted the thematic analysis approach to analyse data for the study

7.4   O'Dawyer's Three Phase Model in Data Analysis

The study employed the three-phased methodology of qualitative analysis as postulated by O'Dawyer (O'Dawyer, 2004). These are data reduction (with its own three separate steps), data display and data interpretation.

a)   Data Reduction

After reading through the transcripts from interviews, observation and secondary sources, certain patterns and categories started emerging. The transcripts included field notes and concept maps. Humans forget the things they have encountered quickly and so easily (Lofland *et. al.,* 2006). As 'backup' to avoid the loss of valuable information I recorded all the events related to the study. As quoted by McLuhan, Prince Modupe, writing on his encounter with the written word in his West African days:

> The one crowded space in Father Perry's house was his bookshelves. I gradually came to understand that the marks on the pages were trapped words. Anyone could learn to decipher the symbols and turn the trapped words loose again into speech. The ink trapped the thoughts; they could no more get away than a *doomboo* could get out of a pit.

(McLuhan, 1964:14)

Simply the written word is immortalised. As pointed out earlier every occurrence linked to the study (whether formal or informal) needed to be recorded verbally or in written form. As observed, the occurrences would form patterns and linkages when re-examined for meaning. It is against this background that the theoretical issues organising the study, that is technology, funding, content, regulation and ideology were viewed as critical in shaping some of the categories and themes under which the findings of the study were discussed. Quite notably, with provision for 'unplanned results' practically there is no research with neat categories.

Although the study defies a linear pattern to the analysis of issues as highlighted in the issues above, observed is that the issues of technology, funding, content, regulation and ideology permeated all the structures of the study. In my view 'unplanned results' were conveniently ignored in most research studies, giving the impression that they never existed. This not only defeats the flexibility of the qualitative research to engage issues broadly and in surprising ways as alluded to earlier, but smacks of hypocrisy on the part of the researcher. In this study, the findings (great or small) obtained from the methods used for data collection were all accorded the same weighting in terms importance.

The major step in the reduction of the findings of the study involved the collation of the findings of the research from different methods (O'Dawyer, 2004). Collation of the findings of a study leads to the development of key themes (ibid.). This leads to significant patterns emerging out of the findings (ibid.). After the collation of findings of a study, the findings are displayed. In the case of the study, visual representation of the findings of the research, were created. Once the data has been displayed it can now be reported, analysed and interpreted. The reporting, analysis and interpretation of the findings of a study has five steps (Lieber, 2004; Johnston, 2011; Tichapondwa, 2013).

The first step involves the 're-engagement with research findings' (Lieber, 2004). The second step is about the architecture or some would say the archaeology of the over-arching issues regarding a study's findings (Lieber, 2004). In the third step, the bigger picture of the findings, accompanied by the extrapolation of key quotes from interviewees is developed (ibid.). The fourth step is about developing context for the findings whilst step five involved the application and analytical lens to the research findings in the form of a short story, what Ruth Teer-Tomaselli as quoted in Mosime describes as narratology (Mosime, 2007). As highlighted interviews, observation, document analysis and conferencing were the methods through which the findings of the research were collected.

7.5   Data Entry and Cleaning

Organising for the reporting of the study's findings had its unique challenges. Admittedly, I hesitated engaging the process. Confronted with volumes of findings I did not know where to start. Practically, I was faced with the ethical dilemma of how to report the study's findings. At one level, I was tempted to just paste my findings to the study in their raw form and risk being less comprehensible. At another moment however, I realised my data needed some cleaning if it were to make sense. People had 'funny ways of talking' in which they import certain words, intonation, and tone that would not ordinarily be understood in written form except by the interviewer. Eventually I embarked on the cleaning and organisation of my findings. This involved the process of reading and rereading of the transcripts from the interviews I had conducted during data collection. The ethical dilemma here was that I was supposed to refrain from imposing on the data (Tichapondwa, 2013). Therefore, I was faced with the daunting task of converting the spoken language from the interviews and conferences into readable format. The last thing a researcher would want is to be accused of distorting people's views. Over the years, I had learnt that every word 'uttered' by a person lay a raptorial of colouring adopted through years of a person's sophistication, way of speaking, character and values. People always differed in describing something no matter how insignificant

the differences. Such differences made people who they were. Therefore distorting them was akin to the proverbial 'massacring' of an individual's identity. At fundamental level, distorting one's views negatively impacted the credibility of the study. There were moments when an interviewee would share 'in confidence' information they viewed as sensitive and was thus not supposed to be published. Fortunately for me, given the length of time spent in the field, there was a way in which the so called 'sensitive' issues would always become public information through newspapers and in other public forums like conferences. Effectively this meant that I could now safely publish the views without violating the wishes of my interviewees as I could now attribute the so called sensitive information to public sources.

7.6   Findings Reporting and the General Trends to the Findings

On the general trends regarding the analysis of interviews three categories were created, that is general, technical and theoretical questions. Again the different members of the sample were comfortable with different sections of the study. Academics would attempt all three sets questions. Most academics attempted questions drawn from the three categories although some experienced challenges regarding the technical aspects of DBM. Despite the challenges with some technical questions, academics had an 'arrogant' way of explaining issues even in areas they lacked depth, that is, the views of specialists.

Some government officials were mostly comfortable with the general and technical questions about DBM and not about the theoretical issues. Observed was that the government officials who attempted technical questions on DBM did so on the basis of the knowledge they acquired from the specialists whom they engaged in meetings regarding the subject. As a result some of the officials referred me to the engineers in their departments and ministries. However, since this study is purposive, it occurred that I had already considered the people I was referred to for the study.

The engineers and technical respondents were mainly concerned about explaining the technical and general issues of the study whilst they were not bothered about theory. In my view, whilst some academics would attempt a philosophical approach to issues of DBM, engineers and technicians mainly focused on the issues of implementation and compliance. It appears whereas, academics, media analysts and critics brought to bear a rare understanding of DBM, engineers and technicians were less into the philosophy of issues, but more on what needed to be done.

As a result the nature of the views about DBM from the different categories of respondents differed in range, quality and depth of the issues involved. Although not to 'fetishise' the differences for fear of imposing on my findings the contrasts prompted me to engage in rudimentary quantitative analysis.

Interviews, Document Analysis and Observation

Given the tight schedule within which the study had to be completed, the triangulation of methods in terms of the analysis of the findings of the study was convenient for the researcher. Although different sections for each method could have been created, combining the views from different methods employed by the study afforded me a holistic approach to the analysis and interpretation of the study's findings. This, in my view, leads to the acquisition of a complete picture of the issue being researched. Further, the simultaneous engagement with the methods used in the study allows for the immediate comparison of views, thereby making the interpretation of views from primary and secondary sources simple.

As an ethical requirement I had to introduce myself and highlight the purpose of the study at the beginning of every interview session. Despite having sought prior permission for interviews during the request for the permission letter, I still had to ask for the consent to interview and recording of the conversation at the beginning of each interview. On two occasions, the request for audio recording of the interview was denied. Below are excerpts of significant views about DBM in Zimbabwe from the different methods employed by the study.

7.7   Reporting, Analysing and Interpreting the Research Findings Perspectives on Digital Migration in Zimbabwe

As a starting point in the reporting, analysis and interpretation of the findings of the study, provided below is an acclaimed view about DBM from literature as follows:

> A process in which broadcasting services offered on analogue technology are transferred to digital based networks over a specific period. The main purpose of the migration process is to ensure that all analogue services will be replicated on the digital networks with the aim to switch off the analogue services at a specific point in time.

ITU Report, 2006

Apart from the above, another simplified view about DBM was that it is "the process of 'moving away' or switching over from the use of analogue to digital systems" (Seel and Grant, 1997; Golding, 2008; Goleniewski, 2007; Smith, 2014**).** Perceptively, "digital broadcasting migration can also be viewed "as a

process in which broadcasting services offered on analogue technology are transferred to digital based networks" (www.arionbomema.co.za).

Armed with a standard definition of DBM, the study's focus shifts toward the consideration of the views gathered through interviews.

"From the relatively understandable technical definitions of the engineers …to the confounded pedantic and philosophical opinions of the academics": The understanding of DBM in Zimbabwe

From the relatively understandable technical definitions of the engineers and technicians as well as government officials; to the confounded and pedantic philosophical opinions of the academics, DBM in Zimbabwe elicited varied perspectives in both literature and during interviews. A total of twenty-one interviews were conducted including three government officials.

Overall, I found engineers and technicians to use short crisp and precise language in their description of DBM. Academics had a way in which they problematised issues about the concept. The views of engineers, technicians and government officials during the interviews were pretty similar to those found in books and other acclaimed sources about DBM.

Unique about the views of the engineers, technicians and government officials was the preoccupation with technology, the plans, strategies and steps to implement the programme. Engineers, technicians and government officials were concerned about issues of implementation. Since in Zimbabwe, the implementation of DBM was government led, the views of senior government officials were the first to be reported upon. Below are the views of a senior official with *the Ministry of Information and Broadcasting Services:*

> Zimbabwe has been preparing to make the inevitable switch from analogue broadcasting to digital terrestrial television in keeping with ITU requirements. The new development since we embarked on the programme is that we now have satellite access, while work is underway to convert universal presence of the digital signal to universal access. We have completed installing the 'uplink' facility and the head-end. Your uplink is what sends signals from the studios to the satellite so that the signal is bounced back to earth for broadcast into household by the satellite.

GVT B1, interview, 2015

The linkages in technology between satellite and terrestrial can be discerned in the views of the government official captured above. These linkages are not apparent in literature as pointed out earlier.

From the lenses of an engineer at the centre of the programme, it was critical to foreground the issue that 'the current global digital framework,' focused on 'television'.

> Yes, although due to the convergence of communications networks and the spillover benefits of DBM, people ended focusing on the entire information and communications sector in their reference to the programme. In my view therefore, since your study partly seeks perspectives on DBM, it is important to distinguish between digital television broadcasting and DBM. On one hand, digital television broadcasting is the use of the digital technology in the transmission and reception of broadcasting television services. The term 'digital,' implies using digits or numbers in the representation of messages. On the other, DBM relates to the introduction of the digital broadcasting technology in the provision of broadcasting services and moving away from the use of the analogue broadcasting technology in broadcasting. The two technologies (analogue and digital) are essentially the same in terms of information acquisition in that both convert the acquired information (sound, pictures) into electrical signals. However, instead of using the electrical signal directly, the digital technology takes representative samples of the original signal and converts these samples to digits, into what becomes a digital representation of the information. This digital information is then used in the application at hand.

ENG1, interview, 2015

The above views were critical to the refinement of the scope and focus of the study. The views about the focus of the 'current framework' exposed my naivety about the way I personally considered DBM I had engaged interviews. The ambitious approach as reflected in the rationale of the study and the narrowing of the focus of the study in subsequent chapters reflects this structural refinement. My naivety to issues of DBM as reflected in the 'broad approach' of the study as outlined in chapter 1 indicates that demonstrates that real research occurred.

Another engineer interviewed during the study also described DBM in terms of the capacity of the platform to compress information into digital bits:

> In the analogue dispensation, it was impossible to compress the television feed whereas, under the digital system content can now be compressed to occupy little space during transmission from the broadcast station to the receivers at home. This is pretty much what digital broadcasting is all about. What digitisation in broadcasting basically does is that it breaks down the images we receive on television into 'bits,' the **0s** and **1s** instead of transmitting them in their solid unit, which require more transmission space in terms of frequency spectrum.

The above view is critical in simplifying digitisation and its impact in terms of providing high spectrum utilisation capacity.

A technician, with NET-*ONE,* also defined DBM as:

> The transmission of broadcasting signals on a different platform, a platform that technically is referred to as frequencies. At present Zimbabwe is transmitting on analogue frequencies, what we call the analogue platform, which is an old way of transmitting television signals to our people. The world is moving from the analogue platform to the digital platform. Most developed countries have, in fact, migrated from analogue to digital signals.

TN1, interview, 2015

The chairman, of the public broadcaster ZBH's Digitisation Programme weighed in with the observation that although the current digital framework, was related to DTT, the introduction of DVB T-2 in Zimbabwe is a 'game-changer' as it provided numerous opportunities not only for television. Radio and the mobile sector were some of the silent beneficiaries of the latest developments in the broadcasting sector *(CM, interview, 2015).*

A media analyst, critic and film-maker interviewed during the study offered intriguing insights about digital broadcasting in Africa.

> Historically, digitisation is not a new phenomenon as those who are advocating for DTT would want us believe. No! In general, once you have provision of internet, you are digital. We need to acknowledge as a matter of fact that the African broadcasting space became digital a long time ago through such platforms as the internet and most importantly, the satellite. You recall the free-to-air channels from South Africa. SABC had literally taken over ZBC in Zimbabwe as the 'official' television. We had almost become an extension of South Africa regarding television until this was stopped in 2013. The outcry that followed the stoppage of SABC broadcasting in Zimbabwe was amazing. In the current discourses about DBM, the fact that through satellite Africa is digital ready is conveniently ignored as people are pushing for DTT. It is this fixation with DTT, which has created an impenetrable misleading lie that to be digital is to go terrestrial. There are other alternatives which may offer cheaper modes of broadcasting than DTT. …options, even perhaps, with better propagation modes of the signal. By the way, the truth that these technologies - terrestrial, satellite and cable - could be linked is not even talked about. Even as you try to engage with those pushing for DTT, you are left with the impression that even this system's strengths and weaknesses are not sufficiently highlighted. There is no critical engagement over these issues. We have a helicopter view about the programme. It is as if we do not own it. A lacuna in literature on the wider perturbations of the programme definitely exists.

The need to engage alternative propagation modes of television apart from terrestrial is critical if a comprehensive appreciation of DBM in Africa is to be appreciated. The location of the internet and satellite technologies in the discourses about DBM help us locate when this phenomenon took root in Africa if not globally. This is especially given that technologies, the internet and satellite, have come of age.

Turning to the presentation, analysis and interpretation of the views of the academics, DBM elicited a variety of views and opinions. Some academics, described the programme from its potential to 'unshackle' government's television broadcasting monopoly and the capacity to provide universal coverage. They argued that there was an 'information famine' in Zimbabwe regarding broadcasting. They welcomed digitisation since it promises many channels which would deal with the current government stranglehold on broadcasting.

> With digital media, we are moving into the free market of ideas. There will be many radio stations and television channels to choose from. More voices, in my view, will now be accorded publicity and when more people speak we hopefully look forward to the best ideas emerging from society. Such views are critical in contributing to the development of Zimbabwe . . . With the potential for more channels many views will become part of our everyday discourses, democracy and development. Brilliant views regarding some of the challenges the country is facing are likely to be harnessed with tremendous impact on the development of the country.

The view emerging from the above view is that the current state of broadcasting is undesirable as there is "information drought'. This is undesirable in the opinion of the interviewer given that the country attained independence a long time ago. Indeed as observed in chapter 4 Zimbabwe has the least developed broadcasting sectors in SADC. This presents an intriguing irony as the country now has to learn from the broadcasting experiences of countries such as Namibia and South Africa who recently got their freedom.

Another academic opined that DBM was imposed on the Third World by the big industrialised powers simply because they wanted markets. In his opinion the Western powers were hoping that the opening up of the airwaves would create markets for their media products. Therefore it was part of creating global markets for their products. According to him Africa is a frontier which has to be transformed into a profitable market for global media players such as BBC and CNN. He argued that since Zimbabwe used to get films from Hollywood from January to December before the country came up with the position to promote local

content through the enactment of legal policies which compelled broadcasters to adhere to the 75 percent local content in broadcasting, the country was losing foreign currency importing films from Hollywood at the expense of establishing a creative industry of its own. Imagine the whole African continent doing that, that's a massive market for media products, ranging from films to electronics for the developed countries.

The idea of developing industries for content is critical in the views above. As observed in chapter 1, content production is imperative not only for television but also for other platforms such as the internet among others. This presents the country with the opportunity to shape world events.

Another academic below, defines DBM in terms of the programme's potential for many channels:

> I think with the coming of digital media, there will be a lot of advantages since with the use of analogue we have been reading that spectrum is a 'finite resource' and it ought to be managed prudently and that we could not have more television and radio stations and so on, but with the arrival of digital such excuses can no longer hold as there is increased frequency capacity.

AC 5, interview, 2015

Whilst the views of AC5 above shed light on the benefits of the programme and are clear about the democratic and developmental potential of digital broadcasting through the provision of more channels, the academic confessed to the lack of depth in issues of digital broadcasting in Zimbabwe among scholars. The academic, also professed ignorance regarding the role of media and communications lecturers in Zimbabwean universities regarding DBM. The academic attributed this state of affairs to low morale, inadequate and infrequent salaries at the country's universities. The academic further argued that this had led to a situation where research among lecturers was now relegated to the periphery as they engaged in menial jobs to make ends meet. Further the academic attributed the lack of involvement of lectures in the programme to the estranged relationship between lecturers and the ZANU PF government:

The lack of transparency in the implementation of the programme is a challenge not unique to Zimbabwe as observed in literature. The strategy to publicise DBM is weak and infrequent in Zimbabwe.

Another academic described DBM as simply "the movement from analogue to digital which is informed by the desire to tap and utilise the new information technology..." (AC6, interview, 2015).

Shifting the focus of analysis from the technical views of the engineers concerning digitisation were the confounded and philosophical perspectives of some academics. As observed during interviews some of the

views from the academics were that as far as Africa is concerned, digitisation did not mean voluntarily surrendering the analogue broadcasting system. It essentially meant that Africa and the rest of the Third World were being compelled by technological developments to comply with international organisations such as ITU. According to him there is no alternative because essentially analogue equipment and systems are being phased out. That's why there is a deadline because manufacturers are also sooner or later going to be stopping the production of analogue broadcasting systems for digital.

The Project Background

In order to have a deeper understanding of DBM in Zimbabwe, the engagement with the historical trajectory of digitisation in Zimbabwe was required. Apparently as observed in chapters 1, 3 and 4, literature on broadcasting was sparse. Therefore, the interviews conducted for the study were considered as a way of filling this void. Unfortunately also, the qualities of the views from the interviews were only as credible as the interviewee concerned. The targeting of a senior government official on this matter, was critical. There was careful planning and strategising for the epochal project as explained by an engineer:

> The project was preceded by a feasibility study to determine the general parameters of the programme as highlighted by an engineer with the programme. The feasibility study on the migration process that involved the Zimbabwe Broadcasting Corporation (ZBC), Transmedia and BAZ, has since been completed.

ENG1, interview, 2015

Whilst digitalisation appears a new project in Zimbabwe in the views of an academic and also a board member with BAZ, Dr Tafataona Mahoso, documentary evidence locates the roots of digitisation in the country can be traced to the most disruptive radical changes of the 1990s which saw the demand for the opening up of the broadcasting sector reaching climax. As gleaned from literature, the political impetus to digitisation emanated from the political economic imperatives of the neo-liberal agenda of the period (Horizon, 1997).

Challenges and Constraints to the Programme

The Zimbabwe government was contending with challenges and constraints to the programme. The major challenge to the programme was the financial resources to fund the programme. DBM was capital intensive:

In a short space of time to date we have spent US$22 million. On June, 17, 2015, BAZ paid for transponder space to the European Telecom satellite (Eutelsat). Eutelsat is a satellite agent. In my view the payment of US$900 000, which gives us transponder space for a year, demonstrates government commitment to the programme. Very soon we intend to test our equipment to see how it performs before we can embark on the final phase of the programme which will take us to 2016. For the country to continue using satellite, we will have to continue paying as much. You need to appreciate that as a first-time user of satellite we received a discount; which brought the figure down to US$900 000. However, going forward, the actual price will be US$1, 2 million a year. We used to book for satellite space for specific events, through South Africa. Now it is permanent. The issue of our signal touching every corner of the country is no longer a problem. It is now guaranteed. With that capacity, Zimbabwe now boasts of universal presence of the signal. The challenge for us is now how to convert universal presence into universal access as this implies further costs in buying STBs. At the moment government has placed an order for 400 000 STBs. This cost US$18 million.

GVT B1, interview, 2015

Another challenge concerning the programme, was about the issue of Set Top Boxes (STB)s:

To begin with, the 400 000 STBs which Zimbabwe had purchased from China were Just a drop in the ocean. The problem is that if one does not have the gadget which (acts as a decoder) then they will not access our broadcast signals. As government you don't want to exclude your citizens from a critical service such as broadcast or any other service for that matter. The question is about whether government should subsidise STBs or give them for free. Another challenging issue about STBs was with the distribution, for instance, how do we get them to the rural areas? Through the use of STBs we will now be able to control viewers' access to broadcasting unlike in the past where even those who had not paid for license fees had access to television. This time around it will be strictly based on subscription to have access

GVT B1, interview, 2015

In terms of the potential for democracy of digital broadcasting the contemporary debate on digitalisation is divided roughly into two camps (Chun and Keenan, 2006). The first of these maintains that the master's tools can never dismantle the master's house, to paraphrase Audre Lorde's formulation as observed by (Chun and Keenan, 2006). Perceptively, is the view therefore, that "if people of colour rush to assimilate computer culture in the hope of closing the digital divide and also spurring development among their people, they may be disappointed as they are simply adopting the role of the docile consumer of Microsoft, Intel, and other products" (ibid.). This may not necessarily lead to the kind of expected transformation, as observed through the disappointing results of the diffusion of computer hardware in Zimbabwe in recent years (IMPI report, 2014). The diffusion of computer hardware in Zimbabwe, with little consideration of the other drivers of the use

of such technologies such as the lack of electricity, has not yielded the desired results (ibid.). The assumption here has been overly simplistic that Zimbabwe could integrate into the information society by importing computer hardware into the country (IMPI, 2014).

To join or not to join: Zimbabwe's Dilemma in the Age of Technology

Whilst some among the interviewees were of the opinion that Zimbabwe was coerced into the programme, others believe otherwise. Apart from Zimbabwe being part to the Geneva convention of 2006, the need for the country to keep abreast of technical developments elsewhere in the world was found to be compelling (AC1 interview, 2015). Besides the information and communications sector has become the centre of gravity in terms of modern economies. Against this background, the reasons for Zimbabwe engaging in such a costly programme are critical. This issue is even critical especially given the fact that Zimbabwe could still have additional television and radio channels as the country had not exhausted its analogue spectrum space (BAZ, 2003). Observations were that the mobile sector was also expanding unproblematically. This view therefore renders the question why Zimbabwe should urgently migrate from analogue to digital critical since at the international level, the major reason for the migration was the inadequacy of spectrum capacity:

> We have to migrate to keep abreast with developments elsewhere. Africa lost the battle at the ITU negotiation table in 2006 when the dates for the deadline and the manner of migration were negotiated. Furthermore, with the rate at which the mobile sector was expanding the need for additional spectrum capacity utilisation would soon become apparent.

AC 1, interview 2015.

Possible Solutions to the Challenges and Constraints

As observed in literature, there are many challenges which militate against the implementation of DBM chief among which is the financial resource constraint. The financial conundrum has bedevilled the implementation of DBM. However some interviewees suggested solutions to some of the challenges and constraints to the programme. Originally, the Government of Zimbabwe had planned to finance the implementation of DBM through the auctioning of frequency spectrum, known as the digital dividend that would become available upon completion of the implementation of DBM. The digital dividend was a band of frequencies which would be rendered superfluous or more than necessary to the broadcasting needs of a country. The ITU directed Zimbabwe to release that band, to a cellular service provider. This is how *Net-*

One tendered for the frequencies for a price of US$200 million. However since *Net-One* are also in the middle of upgrading their system, they have failed to raise a deposit of even US$4 million for the expected digital dividend. Government's expectation was that by this time, money would be flowing from *Net-One* to the Reserve Bank of Zimbabwe (RBZ), to BAZ and then to the contractor. However *Net-One* has failed to raise money to buy the frequencies. As a result the government has since taken over the funding of the programme under its Public Sector Investment Programme (PSIP). PSIP is a facility of the government of Zimbabwe which funds critical national projects through public funds. This means government is now raising money directly for the digitisation programme. To date, the Zimbabwe government has made available US$19 million to *Huawei,* the contractor. US$3 million has been paid to local contractors such as the District Development Fund (DDF) which has been doing site preparation and the Zimbabwe Electricity Supply Authority (ZESA), which has been pulling power to site.

Quite notably, a unique and tight financial arrangement in terms of management of the financial resources linked to the project has been put in place. The Ministry of Finance through the Reserve Bank of Zimbabwe (RBZ) is the one that raises the financial resources for the project. The resources are put into the Commercial Bank of Zimbabwe (CBZ) - earmarked for BAZ. BAZ does not 'touch' a cent of that money. It submits invoices from the contractors to RBZ. The only little money BAZ handles from these resources has to do with administrative and supervisory expenses, like when staff go for site visits. The arrangement has dealt a blow to those who had the appetite to dip their fingers into the financial resources for the programme.

The Government of Zimbabwe has disallowed entrepreneurs from importing STBs in case the government decides to subsidise the gadgets. If it subsidises and allow private entrepreneurs to buy and sell the country may end up with arbitrage – a situation where people will buy and sell the subsidised STBs. The supply of STBs needs control until government has achieved the primary objective in the distribution of STBs in a way that recognises affordability. People were discouraged from importing STBs as the one government was importing had a unique chip supplied by the contractor to insert into the STB so that it can connect with the head-end to allow it to function. The government has tied the supply of STBs to the contractor tasked with the construction of the digital infrastructure so that in the case the system fails to operate the contractor may not turn around and blame it on the supplier of STBs. The experiences of DSTV who acquired a weak decoder which was soon pirated after its introduction taught the Zimbabwean government that with technology a country had to be diligent to avoid being a dumping ground for those countries that were now offloading analogue equipment which they had replaced with digital.

In terms of the mechanism for the implementation of the programme, a senior government official observed that the government went further to create a group of engineers with a different orientation from the stock it had in its departments who had a narrow view of the broadcasting process. Some were versed in broadcasting from their studios while others were versed in transmission. What the government wanted was a new engineer with a vision that encompassed both aspects. So the government took engineers from ZBH and Transmedia and attached them to the programme. It did not want their management to give them orders. Their orders would come from the contractor (*Huawei*) and project implementer - BAZ. There was a lot of tension as the senior managers from ZBH and Transmedia did not see eye to eye as they thought there was a lot of money to be made.

The Politics of Digital Migration in Zimbabwe

Every project of the size and nature of DBM is associated with some political issues of a kind. From a philosophical viewpoint one is concerned about the philosophical roots of the programme as observed in chapter 3. The engagement with the reasons behind Zimbabwe joining this somewhat costly programme at a time when the country's lacks financial resources is more than intriguing. These issues in my view are linked to the political environment of DBM. Also linked to the political issues related to DBM and also another critical issue to attract limelight during interviews with the local Zimbabwean academics were the issues about the need for the creation of a planning team which would be engaged with researching the activities of the ITU regarding digitisation in order to advise government. This would have facilitated a debate on the way to approach this issue, and the time that discussion should have been held was during the time of the inclusive government. But due to the politics of the day, other issues took precedence over digitisation and DBM ended up being the baby of just the broadcasting authority and ZBC, with the ministry scrounging around for resources.

However, the way it was done is sensitive. The advert for applications for bidders for the dividend was flighted in the newspapers over the weekend and applications had to be sent in over that weekend. As if by coincidence only *Net-One,* a government linked mobile company, managed to respond to the advert during that weekend. Other mobile companies believe all this was pre-arranged to exclude privately owned mobile companies from applying for the spectrum. Other companies also allege the title for the bid: 'applications for data casting are being sold,' was so innocuous to attract the attention of anyone and furthermore since it was done over the weekend in an extraordinary government gazette few people saw the advert.

Further to the political issues around DBM an academic described the engineers and technicians who represented Africa at ITU discussions as simply 'fascinated' with the potential for more channels and less with the other dynamics of the programme such as its politics. In his view, DBM was more to do with choice of a system. In his view, from a marketing and selling point of view the issue is about who benefits from the provision of technology among the industrialised countries that produce such technology.

The assertion of the commercial interest by the mighty as the major reason behind DBM above finds resonance with the issues highlighted in chapter 3. Another academic that the disadvantage of Africa and to some extent, Latin American countries during negotiations at ITU was the lack of teams to plan ahead as is the case with European countries. There is need to anticipate what is going to happen rather than reacting to what is on the agenda at the ITU. There is also a lot of sponsorship which is part of the strategies, during negotiations at the ITU negotiations. In his opinion mighty powers also sponsor delegations from different countries and if you are not careful, the people who are sponsoring you may actually be channelling you into accepting their system over competing technologies whether European, Brazilian, Russian or Chinese.

Further pointing out the lack of a national shared vision over the DBM programme, the academic pointed out that what compounded the African position during negations was the lack of cultural wisdom to engineering issues by those who represented the continent at ITU was the biggest let down of the African countries regarding DBM. In his view, Africa's representatives at ITU are 'ideologically innocent,' and are simply fascinated by the promise for channels as a result of digitisation. They do not interrogate what this bodes for the continent. Most of our African representatives are technical people and they simply talk about of possibilities and what needs to be done to implement the programme without looking at the critical questions of what the continent should do and what it wants to do. In his opinion there can be commercial interests, and there can be cultural interests and the real question is are we doing that from an African point of view or simply mimicking others? To him it was a matter of ideology which seeks to legitimise certain ways of looking at the world. He argued that digitalisation refers to the opening up of the airwaves, bringing in many voices which are the tenets of liberal democracy which is ideological because these ICTs are designed to support certain ideologies depending on where you are getting them.

The Content Conundrum

As observed in literature, if Zimbabwe is to have a sound and solid broadcasting industry it requires to have its own locally produced programmes which are expected to empower Zimbabweans culturally, politically, socially and economically (Gumbo, 1996). The motive to encourage locally-made programming is to achieve a public benefit from the use of a public asset, the airwaves, through reflection of the country to itself. Indeed as observed by an academic the most critical issue regarding digitisation is about content, whether Zimbabwe will be able to produce content adequate for the idle space to be released through digitisation across the platforms of communication. According to him, it is the responsibilities of national authorities to ensure that apart from the right to communicate citizens are protected from subliminal unwanted material. This presents the greatest dilemma about digitisation as again the issue about subliminal content can be controversial in open societies as it can be viewed as limiting the free flow of information. In his view digitisation has far reaching consequences, as small nations can fall on the other side where they will die as permanent consumers from what other people produce from outside or they can go and actually use the space created by digitalisation to set up industries which talk more about ourselves and what we want to be. He argued that the Third world needs to shape its own world that interfaces with the global. There is need to critic poor countries' consumption of other people's content in terms of films or they can construct a response to that by making their own alternative cultural products that are centred on themselves and which talk directly to their dreams more than simply wait for others to give them the best film of the year. In other words, If Zimbabwe is to have a sound and solid broadcasting industry it requires to have her own locally produced programmes which are expected to empower Zimbabweans culturally, politically, socially and economically. The motive to encourage locally-made programming is to achieve a public benefit from the use of a public asset, the airwaves, through reflection of the country to itself.

The above views are consistent with the observations that Africans can only bring about genuine change in the often-imperialistic images of race which exist online by getting online...envisioning cyber-technologies as less the master's tools than tools for discourse which can take any shape is an optimistic way of seeing things (Chun and Keenan, 2006). While it is difficult to say with confidence which position between the two is correct by adopting a pragmatic approach, the study will align with the views that bring about practical solutions to the problems affecting the continent and its people. In the views of an academic, we needed to view digitisation as simply a form of gadget which anyone could use to express themselves. Digitisation in the broadcasting sector will open up more channels of communication which can be used to communicate the 'African philosophy and display the pride of African people.

The Management and Control of the Project

The management and control of the project offered intriguing insights about our character as Zimbabweans. When DBM was started, everyone thought there was a lot of money associated with the programme. They all anticipated the US$200 million from the digital dividend. As a result people started fighting over the ownership of the programme. The most pronounced turf wars were between ZBH and Transmedia who saw money from the digital dividend being parcelled out between them. In the minds of the boards and management at the two organisations the money would be split between the two organisations. The frenetic effort to control the digitisation imperilled the project. But government saw the need for an integrator who would make the implementation of DBM seamless and this is how it picked on BAZ to give oversight over the programme.

Commenting on the management and control of the information and communications sector the IMPI report observed that the sector was drifting asunder without guidelines:

> Symptomatic of the lack of clarity on the place of, and in handling the information sector, is the unresolved organisational framework for the sector at the level of government. The impact of this has been to truncate the national response to the information revolution...the result has been that the sector has proceeded with little or no policy framework or guidance by government.

IMPI report, 2014

Lack of laws and guidelines to shape the sector

Observed through literature was the need for laws and guidelines regarding the broadcasting sector. There is also lack of knowledge on how current international dynamics are influencing change in this sector in Zimbabwe, especially in terms of adopting polices that adapt change in terms of technology, content, ideology, policy and skills development in the sector, among other issues. Theoretically, the preoccupation by most Third World communication researchers with cultural imperialism and the attendant Western models, without providing a coherent communication structure in keeping with current developments in the sector has not been helpful (Boyd-Barrett and Newbold, 1996).

The search for the lenses by which to understand DBM in Zimbabwe

Related to the strategic question about the African perspective, was the issue of lenses about digitisation.

Since digitisation has been described as a tool at the user's disposal, the critical issue that emerged during interviews was that of ensuring that digital platforms were used to advance African interest and hence Zimbabwean interests. These issues, as observed in chapter 2, ignited debate on whether there was a pure African philosophy and if there was the second question would be to interrogate its constitutive ontology. African philosophy is moulded in the character of a swallow which flies and perches for few seconds; it is a philosophy for survival. Discussing the linkages between African philosophy and the information and communications academics felt that the media in general, is an arena where we are given a platform to critical issues of our lives, whether you digitise or not, the real concern should be for what purpose and for whose interest? What views will get mileage through the digitisation is important. They strongly felt that there was need therefore, to talk of African philosophy when we consider digitisation as it is critical to the production of content. They argued that African philosophy relates to the wisdom Africans should always use in handling the media. If you give the media to a foolish person they will promote foolish things that do not build but divide people. In that regard therefore, media is merely a tool, an opportunity, a technique, a technology or instrument which can be used to society's advantage. Therefore, one can be a guru in digital technology, but the question is do your skills move us forward as Africans.

They argued that African interests should not be simply linked to international interests or standards. African standards stem from African pride. However, this is not to imply that there is such a thing called pure African philosophy. Philosophies, no matter their context, should be revisited, redeveloped and polished all the time. Sometimes their relevance need to be reassessed in terms of the challenges to society, all the time. A philosophy is not rigid, otherwise it not be wisdom. African wisdom can be represented by the example of the swallow which flies and perches for a few seconds; it is a philosophy for survival. It speaks of survival strategies, just like the African idiom, "chitsva chiri murutsoka" (you can only discover new things after making the effort to do so).

Regarding issues of theory, an academic observed that if there is to be a theory to understand digitisation, then it revolves around our cultural identities. You can use any cultural theories that you can think of, which theories would really come nearest to take us to where we want to go as Africans. In his view, if there is to be any theory that can be called African or Zimbabwean vis-à-vis technology, it has to be a theory that really seeks to enhance who we are as Africans. It has to be a theory that is anti-colonial, anti-Western hegemony because it closes space for us to fully blossom as normal human beings who can love each other. It has to be a theory that addresses five centuries of deformities inflicted upon Africa by history. If it is about theory it has to be one that rehabilitates Africans in such a way that they belong to world civilisation.

A people's experiences shape their worldview.

He observed that the debate for African philosophy gathered momentum from around the 1970s, inspired by the Dependence Theory by André Gunder Frank and other neo-Marxist scholars feeding off the Latin American scholarship. Gunder Frank advocated for radical measures of delinking from that capitalist world to start afresh. However, practical scholars such as Ruth Teer - Tomaselli, of the CCMS have written on how it can be difficult to escape capitalism. Therefore Africa's reality is that people have to choose to learn from experience and move forward. As a result, because of the fighting mode Africa found itself in during the 70s, since this was during the peak of the wars of liberation, the Dependency Theories naturally found resonance with the African mood. A lot of other events across the world were converging into the 'geographies of knowledge in Africa.' Even Negritude in America, a sense of black pride, also fed into African wisdom. The same period also saw 'Pan-Africanism' taking centre stage, of course taking a bit from Leopold Senghor's theory of 'Black is beautiful' and the talk about Negritude. There are those who believe Negritude is the base of African philosophy and those who believe that African philosophy traces its roots to ancient times, its value systems, norms and cultures of its people.

The academic cited the views of John Junior Gates in the book *The Signifying monkey,* where the African is described as being double-toned in their worldview. On one hand the African has an aspect of being African, and due to colonialism he also has an aspect of being European. Both the black African values and European values reside in him. In a way, he can be considered multi-vocal to the extent that he cannot talk about 'purity' in the way they perceive reality. The template for African philosophy is even difficult due to the inexorable influences of globalisation.

Although not popular with engineers, technicians and government officials, the issues about theory, helped in highlighting some of the fears regarding digitisation and in providing the solutions to such fears. Africa needs theories that spelt - out our relationship with technology. Such a policy also needed to spell out how the country could benefit from digitisation. These views are consistent with pragmatic approaches.

An official with Transmedia, Mrs Sigudu-Mtambo, thus outlines the plan to implement digitisation in phases starting from the country's borders with her neighbours to minimise:

> The country's analogue signal interfering with the digital signals of neighbours as Zimbabwe battled with issues of full compliance with international regimens. However the country would continue broadcasting through the analogue system and where possible provide digital television. It is expected that the analogue signal would finally be switched

off by 2016, which is a year later than the international deadline. The provision of both analogue and digital was a measure to allow consumers time to adapt to the new changes and provide the country ample time to obtain resources for the programme.

The views about the need for Africa to adopt policies that adapt change are consistent with those of, Raboy, (2002); Braman, (2004, 2009) and Ruth Teer - Tomaselli, (2009) as established in literature. Paramount also is the view that "there is no escaping of the capitalist influences" as observed by Mosime (2007), when quoting Tomaselli. This sobering view was critical in influencing the adoption of the pragmatic approach in engaging the issues to this study. Prahalad, (2006), offers what I would consider as the most scintillating expose of development issues in India through pragmatism. In my view rather viewing pragmatism as a trite theory for 'reformists' first name Appiah sees it as a critical element of the knowledge systems of the future (Appiah, 1989). The search, for theories that benefit small nations are critical as observed through document analysis. Even the Chinese have sought for a way to adapt change. The era of 'wailing' 'mourning' and 'groaning' for a 'normative system' appears simply vanished especially with the fall of the USSR in 1989 (Chirume, 2005). The USSR had provided an alternative voice to capitalism (Chirume, 2005). However, the fall of the USSR led the world to becoming capitalist:

> The challenge encumbered upon us is to make globalisation an instrument of opportunity and inclusion not of fear and insecurity. There is no reason why globalisation must not work for all.

It is against the tapestry of the manner in which *Net-One* was awarded a license over the digital dividend realised through digitisation, that some members of the private sector have felt marginalised

The benefits of DBM: A ZIMBABWEAN PERSPECTIVE

Quite notably, the major benefit of digital information (whether film, PDF, video among others) is that it does not degrade easily and even where it becomes degraded, particularly during transmission, it can easily be corrected at reception and restored to its original state (ENG 1, interview, 2015). Digitisation also enables the compression of data so that a lot more information can be transmitted simultaneously on a single frequency using the same transmitter. Analogue could only transmit one programme on a single frequency, on the one transmitter (ibid.).

Further benefits of the programme are that digital platforms can accommodate more broadcasting services. Only one television service could be delivered on a single frequency or a single network of transmitter (for national coverage of television service through analogue broadcasting technology. If we consider the example of the UHF television band which has four frequencies per site and therefore, can support four national coverage networks, this means only four analogue television services of national coverage networks could be provided. However, with digital technology twenty television services on a single frequency or on a single transmitter network (for national coverage of the services) can be provided on average. Four UHF digital networks would therefore be capable of delivering eighty television services of national coverage.

Through digitisation, there is a huge saving in terms of infrastructure cost. With analogue technology the four analogue television services would require a transmitter network each for national coverage of the services. In the digital domain, these four services can easily be carried by one digital transmitter network without even filling up the full capacity of the network. The four analogue services would require four transmitters per site for forty- eight sites, whereas, with the digital network it would require only one transmitter per site. This, points at significant savings in transmission infrastructure costs. Furthermore it results in new broadcasting business models which can integrate broadcasting with numerous other platforms in the information and communications sector. The services capacity generated by the digital broadcasting technology creates an opportunity for new broadcasting business models to be realised. Whereas, analogue broadcasting technology was mainly associated with free-to–air broadcasting services, the capacity generated by the digital technology allows for the packaging of services (Channels). This can be accessed on a subscription basis.

There will also be improved picture quality for television. Analogue television services degrade in picture quality the further away the television set is located from the transmitter. This progressive degradation results in showers, loss of colour, poor sound quality and ghosting, the further the television set is located from the transmitter. With digital technology, picture and sound quality is the same from the transmitter right to the last point where an appropriate signal level is received. This allows viewers to receive the best and the same picture quality throughout the coverage area of the transmitter, without any variation in terms of the quality. The only drawback to digital television is that picture failure is rapid beyond the threshold of reception. Digital technology supports picture resolution much higher than those of its analogue counterpart. This higher picture quality is supported by high definition three dimensions (3D TV). It is interesting to note that work has already started on standardising even higher picture definitions formats

(Ultra High Definition) such as 4K and 8K, which provide even better picture resolution through the digital platform. Excellent sound quality, surround sound and the use of multiple languages on a programme are all possible features of the digital broadcasting technology.

With digitisation there is the possibility of mobile broadcasting. Apart from delivering television services to fixed receivers, mainly to television sets in the home, the technology allows for delivery of services to receivers in motion (in car, bus, or train and to portable devices such as cell-phones, tablets and laptops. The analogue had difficulty in addressing these reception environments due to its failure to cope with motion, signal reflections and electrical noise. Unlike the analogue broadcasting technology, digital broadcasting is not limited to the delivery of television programmes only. Digital television results in value-added and interactive services such as Electronic Programme Guides, television shopping, weather forecasts, electronic newspapers and so on.

Relating to the benefits of digitisation an academic observed that the opening up of the airwaves, which has been taking place at a very slow pace during analogue, is now going to be speeded up because the technical obstacles that were standing in the way have now been resolved. According to him the major advantage is Zimbabweans being able to root their own content on their own cultures and being able to produce world class products that can penetrate any market as well.

Further benefits were:

> In the setting up of High Definition (HD) television studios, five radio transmission studios, six digital content production facilities dotted throughout Zimbabwe, satellite signal distribution centre, six national FM transmission networks and many more community radio stations. This for you summarises digitisation. We are talking here, of the unleashing of industries. The potential for broadcasting is vast.

ENG 1, interview, 2015

A media analyst and critic observed during an interview that digital media brings efficiency in broadcasting..., "it also democratises the broadcasting space in terms of allowing more frequencies and that means more voices in the broadcasting sector......" (CRC2, interview, 2015).

In the case of telecommunications and broadcasting, litigation forced the hand of government as observed in literature. Observed also in terms of lack of clarity in the information and communications sector is that:

The biggest causality of both these orientations has been the industrial/business side of the sector whose growth has stymied and neglected. To this day, the legal regime on information has many gaps and inadequacies, creating a situation where information products from Zimbabwe are freely exploited without any returns to the economy. The country is ill-equipped to enforce any intellectual property rights, or develop viable business models and platforms from them.

IMPI report, 2014

In terms, of access and control of signals an engineer said that there was need to observe that from 2016 onwards there would be conditional access system and subscriber management receiver control which makes issues of the listener viewer licence fee a thing of the past. The subscriber management system would encrypt transmission to ensure viewers pay subscription fees, a move that BAZ said would improve the collection of listenership and viewership licence fees.

Relating to issues of spectrum management this is a natural resource. It is basically the airwaves in which a sovereign nation is able to disseminate information and that natural resource has got to be managed the same way other natural resource whether it's our diamond, coal and so on are managed. But this particular resource is basically a channel used to disseminate information. So what is needed is a governing body in the form of POTRAZ or in the form of BAZ which determines who is going to use which band. So that ultimately is what spectrum management is. If somebody else comes into a sovereign nation and wants to put up base stations and utilise that space, they are going to find it occupied already and the regulators are going to come down and evade them because that place will be allocated to someone else. And this is why licences for cell phones, radios and TV tend to be expensive, they have to be given to people who are going to use them to the maximum and be able to generate as much revenue of that spectrum as possible.

Notably, another proposal observed during interviews was for the consideration of 'reverse-engineering' of the STBs as a way for the country to cut on the costs for importing these gadgets, but most importantly also for the country to cash in on the windfalls to be realised from the sale of such gadgets and other electronic devices linked to the process. Zimbabwe has a Scientific Industrial Research and Development Centre (SIRDC) which could explore the possibilities of this idea. In simple terms, reverse-engineering involves building a gadget, copying from the prototype. Obviously this would involve the costs of copyright. Apart, from SIRDC, the country boasts many universities, who if funded could also be interested in engaging in such ideas.

7.8   An overview of the views on DBM in Zimbabwe

'A lot of what can be done on the computer in the office such as typing and e-mail, will in future be done via television from the comfort of one's couch'. In my view, the above paraphrase capture the meaning and essence of the transition to digital in Zimbabwe. DBM enlisted varied views in Zimbabwe. The views ranged from the technical understanding of the current 'digital framework' to the confounded, pedantic views of the academics. Whereas, engineers and technicians described the current digital framework as simple about 'television migration' academics delved into politics of the programme dissecting issues about its philosophical roots. In agreement with some of the views observed in literature, academics traced the origins of DBM to the search for markets for broadcasting equipment and associated electronics. Others viewed DBM as essentially, an issue in search for democracy due to the imperatives of the wave of liberal democratic dispensation of the 1980s. This had stemmed from the deliberate promotion of open markets by Margret Thatcher the then Prime minister of the United Kingdom and Ronald Regan the then president of the USA. Others simply acknowledged the transition as historic, to which more thought about the envisioning of the programme is still required. Notably, the study established that the current digital framework was about DTTV. It also established however, the ramification of the programme went beyond DTTV to involve the telecommunication industry, the internet and others. As already stated the programme's politics centred on the roots of the programme. Whilst, DBM yielded more channels the issue of content continue to be nagging. Content in the digital era, is a major issue not only for television but also across other platforms such as the internet among others. If the country was to benefit from the current digital initiatives, there is need for financial investments in technological upgrade. A technological policy, which clearly spelt out the technology to procure, the 'standards' to be procured, its use and the strategies to 'indigenise' the production of such technology was required. This could be discerned from the proposals made during interviews for the country to consider the reverse-engineer of STBs as a way of saving the country of vital financial resources.   As observed during interviews, needed also were lenses that in the views of Ruth-Teer Tomaselli, sought to reposition small countries to benefit from globalisation. In the views of one academic the idea was to search for ideas that sought to rehabilitate Africa of centuries of deformities of the past. It is within this context that pragmatism became the preferred approach to the study.

7.9   Chapter summary

Except in cases where views closely resembled each that it would have resulted in unnecessary repetition, the views and opinions which were collected for the study have been reported in this chapter. The current

chapter reported, interpreted and analysed the views obtained during the study. The purpose of this chapter was to present the empirical findings of the study. The chapter went through some of the country's ingenious plans and strategies to ensure that Zimbabwe fulfils her international obligations. Given the critical role of the information and communication sector in the economy, the issues at the ITU could no longer be treated lightly. As a result, Zimbabwe needed to set up a committee that would engage with ITU on a permanent basis if the country was to keep abreast with trends in the sector globally. The first section of this chapter reported on the general trends regarding the demographic profile of the respondents. The personal demographic variables for which information was obtained included gender, age, level of education, ethnic groups, and work experience. The next chapter is concerned with the conclusions of the study.

CHAPTER 8

CHAPTER SUMMARIES, CONCLUSIONS AND RECOMMENDATIONS

8.0 Setting the stage

The previous chapter focused on the findings of the study. Significant patterns to the findings were identified. It is in the context of these patterns, that the issues of the study were interpreted and analysed. This led to certain conclusions as explained in the current chapter.

8.1 Introduction

In the typical fashion of the old-time preacher's practice, 'the dictum is to tell the audience what they have been told'. Therefore, the current chapter presents chapter summaries. This helps refresh the reader's mind about the aim and objectives of the study. Quite notably, it also provides an overarching impression of the study, and clarifies the connections regarding the elements of a study. Perceptively, chapter 7 evaluated whether the research findings addressed the questions of the study as set out in chapter 1. The chapter also highlights whether the investigation adhered to the selected methodology. Furthermore, the chapter evaluates whether logical deductions of the findings of the study were arrived at. Ultimately, the chapter presents the study's conclusions and recommendations.

8.2 Revisiting the Aim and Objectives of the Study

A critical step in concluding a research study is to revisit the study's aim(s) and objectives and ask one self, the extent to which the information that has been gathered during the investigations addresses the objectives of the study. In the case of the current study, the aim was to develop insights on the process of DBM in Zimbabwe, and investigate the dilemmas associated with the programme. However, for a perceptive engagement with the aim above, below are the study's objectives:

- To explore the imperatives of change in broadcasting within the global arenas of technological change and policy regimens;
- To investigate the level of knowledge and understanding of the migration among stake-holders;
- To identify lessons for the future and analyse their implications for theory, policy and practice in digital migration

8.3   Chapter Summaries

This study has eight chapters, incorporated under four sections. Section I is about the study's background. Section II deals with literature and has four chapters. These chapters are 2, 3, 4 and 5. Section III has one chapter dealing with the study's methodology. Section IV which is the final section of the study has two chapters. These are chapters 7 and 8. For a clear demarcation of the chapters of the study sections became imperative.

Chapter 1

Chapter 1 outlined issues to the background of the study. The chapter dwelt on the study's research problem, questions, key definitions, objectives and justification of the study. Chapter 1 also considered the preliminary literature to which gaps requiring insight concerning issues important to the study were identified. Preliminary issues about the study's methodology and methods used for the completion of study were highlighted in this chapter. The chapter 1 also engaged the processes and procedures through which the findings of the study would be analysed, albeit at a nascent stage. Discussed also in Chapter 1 were the sampling strategy and instrumentation for the study.

Conceived to resolve the challenges associated with the shortages of radio frequencies spectrum, the chapter traced the historical issues leading to the epochal transition in Zimbabwe. As set out in the chapter the critical issues were whether the country had to migrate at all and also when and how. To these questions emerged the country's road map appended immediately after the study's introduction as figure 1. Regarding 'how' the country would migrate were some behind the scenes ingenious strategies and planning as found out during interviews as highlighted in chapter 7. Highlighted also were also the issues of the programme's perspectives. It emerged DBM could be defined from a variety of standpoints which went beyond the process of transition, to involve a gamut of issues such as its politics, the social and economic benefits. One academic took it as a 'tool' which could bring numerous benefits if only the country could take charge of what was in the 'pipe'. In other words it was imperative for Zimbabwe to take ownership of content creation for television, radio and even other platforms such as internet. An academic observed that the days of mourning and groaning about negative influences from other countries are over as everyone had the opportunity to use digital platforms to influence world events as well. Required were policies that adapt change.

To be engaged also were the constraints and benefits of DBM in Zimbabwe. The greatest constraint to the programme was the lack of finance to fund the implementation of the programme and as a result, this programme would now take longer to implement than earlier anticipated. The other nagging issue which came out was that Zimbabwe was ill prepared for content production. In terms of perspectives, the idea was also to ascertain the extent to which Zimbabweans understood the programme. The yardstick used was to compare the views from primary sources to those from established sources such as textbooks, journals and other scientific sources. And as already stated intriguing insights about the programme were gathered during interviews. This partly explains why the presentation of the study's findings from interviews in chapter 7 concerning the perspectives of DBM had to be prefaced with what I considered 'established thoughts' about the phenomenon, as outlined by the ITU itself.

Chapter 2

Chapter 2 is about the theory of the study. The chapter presented the filters or lenses through which the researcher selected to approach issues pertaining to the study. It presented Manuel Castells' Information Society theory, as providing the most appropriate lenses for analysing the issues of the study. Chapter 2 also discussed glocalisation, a concept related to the Information Society theory. In different ways chapters 2, 3, 4 and 5 evaluated literature to the study. Due to the diversity of issues involved in DBM, more chapters were devoted to literature.

Perceptively, chapter 2 was concerned about theory from the analytical function in which the concern is about achieving the meaning and understanding of DBM in Zimbabwe. In the case of the study, the issue was the search for a theory that would help in achieving understanding about DBM in Zimbabwe. This quest in turn required prior knowledge of metaphilosophy in Africa especially as it relates to the quest for a 'purely African toolset' for analysis, were it achievable. It is against the background of the metaphilosophical debate in Africa that Keyan Tomaselli points at an interesting character about theory that "they changed and reconstituted initial emphasis to suit contexts […] theories literally travel from one environment to the other and as they finally arrive they forget their origins" (Tomaselli, 2012, p.19). The practical view as proffered during interviews was the need to search for theories that would rehabilitate the continent of centuries of deformities occasioned through the continent's unfortunate history.

Chapter 3

Chapter 3 mainly focused on clarifying the parent and immediate disciplines of the study. The parent discipline to the study is telecommunications whilst the immediate is broadcasting. Identifying the parent and immediate disciplines of a study helped in mapping the boundaries of the study. the chapter provided a rational of the study which mapped the scope of the study.

Chapter 4

The major technical developments involved in DBM were also explained in chapter 3. This chapter also explored the critical concept of spectrum management. Most importantly the chapter also examined the imperatives behind DBM at the global level.

Although identified as fairly a new phenomenon in the discourses about the African media landscape, the issues about spectrum management can no longer be ignored. As observed earlier, prudent spectrum management alongside technological improvements in broadcasting equipment, is a critical function of the emphasis on spectrum utilisation. The roots of DBM were traced to the technological developments of the late 1970s and the liberal political wave which swept across the African continent in the 1980s. Quite notably, the chapter traced the genealogy of DBM to the specific political and commercial dynamics obtaining in the United States of America and United Kingdom soon after the Second World War. A global perspective to broadcasting was also highlighted in the chapter.

Chapter 5

Chapter 5 focused on the history of broadcasting in Zimbabwe since the 1930s, the period when broadcasting in the country was established. Furthermore, Chapter 5 provided an overview of Zimbabwe's information and communications sector. This overview was a preamble to the discussion of DBM in the Zimbabwe.

A historical trajectory of broadcasting in Zimbabwe was provided in this chapter. More, specifically, chapter 5, delved into the reasons behind the establishment of broadcasting in the country. It traced the growth and development of the sector from inception right through to the current era of digital migration. The chapter also highlighted the linkages between broadcasting and other sectors in the information and communications sector in the country. The advances in satellite technology coupled with the policy impact

of liberalisation were identified as the major drivers toward the current changes in broadcasting. It is upon the wave of these events that the 'Capital Radio' in which Jerry Jackson (a former television anchor with the ZBC TV) successfully challenged of ZBC before the Supreme Court thus throwing the government of Zimbabwe in a quandary regarding the management of the sector. Government had to resort to the Presidential Powers (Temporary Measures) Act (Chapter 10:12) to contain the implications of the Supreme Court ruling.

Chapter 5

Chapter 5 dealt with issues of methods and the methodology of the study. The chapter explored the taxonomy of research from a phenomenological exploratory paradigm. It also justified the research paradigm adopted for the study. Chapter 5 also proposed and assessed the criteria for judging the quality of the study. In addition, the chapter explained the research instruments and data collection procedures. The chapter also examined possible strategies of working around the limitations encountered during the study so as to obtain credible information.

Dubbed the 'heart' of the study, chapter dissected issues about the study's methodology and methods through which the findings to answer the questions to the study were obtained. The chapter was also concerned about ethical issues related to the research. Also engaged were the philosophical underpinnings underpinning the study. 'The problem of understanding the world in which humans live; and thus ourselves who are part of that world' was established in this chapter as essentially essential the reason behind the quest for knowledge creation at least by all thinking 'men' and 'women' of the world. The chapter weaved through the intricacies of negotiating gatekeeping power, research ethics and the ways I traversed the research journey.

Chapter 7

Chapter 7 presented, analysed and interpreted the study's findings. It focused on the procedure of data analysis, respondents' analysis, research questions analysis, summary of key findings, and the presentation of unplanned findings. Unplanned findings are concerned with issues of digression regarding the issues under consideration. Such digression would always have relevance to the study.

The chapter engaged the intriguing dynamics of using mixed methods to analyse qualitative research findings. Perceptively, the tendency by the quantitative analysis to overshadow qualitative analysis was

viewed as interesting from a practical viewpoint. Most importantly the study observed that both quantitative and qualitative analytical tools could be used to analysed research findings unproblematically only if the researcher remained careful to be carried away by one method over the other. This issue is linked to the question of whether a study adhered to the methodology of the study as adopted at the beginning of the study. Essentially, this study was qualitative study.

Chapter 8

Through outlining the overview of the study, chapter 8 presented the summaries of previous chapters. The Chapter also explicated the research propositions and final conclusions. The chapter also presented the research conclusions in relation to the research problem. The implications of the findings of the study for both policy and practice were also presented in this chapter 8. The study wound up by motivating for further studies.

8.4   Study Conclusions

The primary aim of this study was to investigate *the current state of broadcasting vis-à-vis digital migration in Zimbabwe in the context of the global environment; and the understanding of digital migration from a policy, technological, funding and ideological dimensions, as well as the opportunities for content development, entertainment and the diversity of voices contributing to greater democratic potential.* To expand the meaning around the above issues, the researcher reviewed related literature from books, journals, magazines, the internet, previous research and newspaper reports that address this topic. Gaps were identified during the review of related literature.

Whilst efforts to migrate the country to digital platforms were being pursued vigorously with the programme having been accorded the PSIP status which accords it national budgetary allocation, Zimbabwe still lacked the financial capacity to fund the programme. The integration of Zimbabwe into the information society was occurring without sufficient capital and technological investment. As a result Zimbabwe was considered an information dinosaur due to the state of equipment used in broadcasting. Ingenious planning and strategising to ensure that Zimbabwe complies with international obligations in the broadcasting sector has been underway.

There was however, need to scale up publicity programmes for the programme as those interviewed complained about lack of information about the programme.

A major observation from secondary and primary sources was that 'instead of the creative industry in Zimbabwe being a concomitant of the digitisation investment, the country lacked sufficient investment in the area. As a result Zimbabwe was fated to evolve as an information consumer market and not an information producer market. However, the popular opinion was that DBM presented the country with the opportunity to establish business in the electronic industry and content industry. It is within the context of ideas such as these that some interviewees considered the concept of reverse-engineering as a critical step in which the country could become a hub for the production of STBs and other critical electronic devices critical for the programme.

The above discrepancies called for a technological policy and other policies that adapted change to ensure the information and communications sector were poised for growth. Further observed during the study was the need for policies that viewed the information and communication sector as a growth pole in national economy.

The lacuna in knowledge about alternative broadcast distribution networks such as satellite and cable concerning studies in DBM in Zimbabwe were quite intriguing given the abundance of literature at the international level. Of the three popular broadcasting distribution networks (satellite, cable and terrestrial) the latter has received greater attention in literature. The emphasis on Digital Video Broadcasting - Second Generation Terrestrial (DVB T-2) technologies as a game changer in digital television has blotted discussions on alternative distribution network technologies in the broadcasting sector. However, both government and the private sector in Zimbabwe were investing in cable.

The trend in which terrestrial technologies have dominated discussions concerning DBM is even observable in documented literature. Ironically, a fourth distribution network for broadcast, the broadband digital subscriber line **(DSL)** which is emerging as potentially a contender for the future (in the distribution of broadcast) has received little scholarly attention. Observed from literature is that "it is now technically possible to transmit television using a telephone line (Adda and Ottaviani, 2005). As observed during an interview, "a myth has been created especially among the less technically gifted that DBM is the only delivery method for broadcasting." The engagement with this illusion is partly discussed in chapters 1 and 3.

Delving into issues of the lenses through which the study achieved understanding, chapter 2 discussed the metaphilosophical debate in Africa informed by the key question of whether there exists an African

philosophy, and if it does what its nature is. In general, these questions have rocked what is known today as metaphilosophy in the quest for an African philosophy. In particular, the questions have informed the planetary arguments within cultural studies as observed by Tomaselli (Tomaselli, 2012). Noteworthy, is that research theory has two functions. The two are the 'analytical' and the 'methodological,' functions (Brugger, 2003). Noteworthy, also is that culture and technology are difficult issues to study as their most significant features are subtle and thus taken for granted. The difficulty in engaging culture for instance, is that it is enacted in everyday routines. Therefore, the capacity to study aspects of culture in technology resides in what is considered important about the two issues. Chapter 2 is about the theoretical framework of the study as it relates to the analytical framework; whilst chapter 5, is about the methodological function. In philosophical terms, both functions of research theory relate to epistemic questions of a study (Mouton, 2009).Perceptively, the analytical function of a theory relates to the 'meaning' and 'understanding' of an issue, whilst, the methodological function is linked to the "process of data collection" (Brugger, 2003). In philosophical terms, the methodological function of a study is known as 'epistemology' (Creswell, 2009). Theories illuminate the meaning and understanding of life and the complex world in which people live (Durham and Kellner 2006; Brugger, 2003; McQuail, 2008; Craig and Muller 2007).

Practically, mapping the strategies of obtaining data regarding an issue is the function of theory (Mouton (2009). It is against the drapery of these practical considerations that the transition to DBM in Zimbabwe can be viewed as occurring in the context of concrete 'ideas and concepts' peculiar to an issue. These 'ideas' and 'concepts' facilitate meaning and understanding and are thus referred to as theories (Noble, 2000; McQuail, 2008; Craig and Muller 2007). Also models, just like theories, facilitate the perception of an issue (Kuhn, 2005). A model can be defined as "a graphical representation of abstract ideas" (McQuail, 2008). In the study, a variety of models were used to explain the complex technical processes in DBM.

In life, when people encounter a situation in which they lack insight and understanding, they usually turn to theories through which they can acquire such clarity. Also considered in the present chapter is the notion of 'tradition'. Tradition (which perceptively implies the way of thinking about a phenomenon within specific context) in scholarship is critical to the analytical function of theory in research (Craig and Muller, 2007). The word 'tradition' can furthermore be described as relating to 'waves of ideas' in scholarship, which may be unique to a historical epoch, theme or any other peculiarity (Craig and Muller, 2007). As observed, the context could be historical and or time bound among other issues (Tichapondwa, 2013). Observed is that people had unique ways of expressing views about a phenomenon. Specific avenues of thoughts form, endure and eventually die over time, as they outlive their usefulness and lustre in engaging and describing

life occurrences (Tomaselli, 2012). The established and cultivated ways of 'thinking' and 'talking' about an issue in terms of knowledge, relate to a 'tradition' in knowledge and discourse analysis (Halliday, 2012). Therefore, a reflection of the historical trajectory of communications theory literally involves the engagement with layer upon layer of successive traditions, which constitute discourses about the sector.

The desire for a credible plan to shore the electronic industries, and thus the broadcasting sectors of these countries, lay in the potential for growth that the sector had demonstrated in the emerging markets of Japan, India and China during the same period. Ironically, whilst the picture about the electronic industry was bad in the USA and Western Europe, in Japan, India and China the story was different. These nations had overnight become giants based on investments in information and communications (Yoon, 2013). A monograph discussing the transparency revolution – sensory communication, computing – concludes that effective control of space by one state would lead to planet-wide hegemony (Mowlana, 1997). It is from views such as these that it is widely viewed that US efforts in the information and communications sector has shifted attention on militarising yet another natural feature of the planet lying beyond the effective sovereignty of the nation state – the electromagnetic spectrum (Deudney, 1983; Mowlana, 1997)

It is against this drapery of events, that digitisation was conceived at the global level primarily as a strategic instrument for harnessing additional capacity utilisation (Galperin, 2004). Therefore, digitisation in the broadcasting sector was perceived as generally capable of revolutionise the ailing electronic industries of America and Western European countries soon after the war as observed above (Foroohar, 2005). It is also against this tapestry of events that the revolution in electronics has also occurred within the context of the neoliberal drive of Thatcher and Regan. Therefore, revolution in the information and communications sector drew its political and economic precincts from the liberal ideology. As earlier stated, the ideology hinged on the opening up of a country's politics and markets (see Smith, 2006). It is against this view that the transition to digital, later to assume an international outlook, would in the views of Galperin, help the electronic companies in America and Western Europe with a guaranteed market (Galperin, 2004).

It is therefore, not by mere coincidence that most of the countries in Region 1, to which African countries belong, have adopted the European standards for digitisation technology. This can be perceived as part of this grand scheming and planning by industrialised nations whose interest is to protect their economies, that digitisation has become the programme it is today (Galperin, 2004). Also to be observed is that in digitisation lay another potential to fend off competition from Japanese and other Asian electronic markets (Galperin, 2004). In my view digitisation would create a huge market for digital products, whose quest for

satisfaction would remain unquenchable at least for the foreseeable future (Cuilenburg, 2003; Hamel, 2009). Today, billions if not trillions of Set Top Boxes would be required in small African countries such as Zimbabwe where most of the television sets in use are old and are thus not readily equipped with digital components. As a result an external convertor, which is a small independent gadget, known as a Set Top Box would be required for the old television sets to work after the switch-over (Duncan, 2012). In this regard, a market far exceeding the supply for digital products worldwide has been created. Herein lay the opportunity even, for Africa to set up industries to produce some of the digital components through strategic partnerships. But the question is: Will Africa seize the opportunity?

The most common and acclaimed reason for the switch over in literature is the issue of dealing with spectrum scarcity (Cuilenburg, 2003). Also as noted, the ever expanding volumes of information traffic in communications have led to the global resolve to expand communication channels (Castells, 2004). Given the critical role of the information and communications sector to modern economies, the proposition behind this study is that the search for additional spectrum capacity can no longer be viewed as an American or European issue, but a global issue especially in light of the surging volumes of data now being communicated (Hamel, 2009). The miraculous rise of the Asian Tigers and countries such as China and India based on heavy investments in ICTs should demonstrate to small African countries the strategic role the sector can play to development. The liberal nature of the ideological underpinnings of digitisation as highlighted in the preamble of the present chapter is critical to the understanding of the study's approach as explained earlier.

A perceptive engagement with broadcasting in Zimbabwe was achieved through a contextualisation of the country's entire information and communications sector. Although at first this appeared ambitious given the limited time within which study need to be completed, an overview of the information and communications sector was viewed critical to the understanding of DBM in the country.. Such an overview was considered a precursor to the history of broadcasting in Zimbabwe. Since the research is mainly about the developments in the broadcasting sector in Zimbabwe, the study traced and outlined the history of the sector from its humble beginnings in the 1930s.

A general discussion on broadcasting and its linkages with the information and communications industry in Zimbabwe is provided in this chapter. The roots of broadcasting in the country are traced to other sectors of the information and communications industry, such as telecommunications, aviation and railways. More often than not, the linkages with broadcasting with other sectors in the information and communications are

taken for granted (Yeung and Hui, 2003). Therefore, in outlining and discussing the above issues, the present study attempted an entire perturbation of DBM in Zimbabwe. Evaluated also in Chapter 4 were the 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 study 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.

Observed during the study was that 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 (Nyahwedegwe, 2014). Despite being a late comer to broadcasting in the Southern African region, Namibia has since migrated to the digital platform (*The Herald* 9 July 2015).

Also to be observed was that except for anecdotes and memos found in archives, material on the history of the information and the communications sector in Zimbabwe is difficult (Frederiske, 1990). Furthermore, the information and communication sector in Zimbabwe is so fluid so much so that newspapers may pop-up overnight, only to disappear the next day. The internet continues to force changes on the sector daily presenting many opportunities and challenges.

However observed is that the lacuna in literature alluded to above is even worse regarding broadcasting in the country (Mudzengi *et. al.*, 2003). Generally, the paucity in literature in terms of the information and communications industry in Zimbabwe could be linked to the lack of scholarship in the area (Chirume, 2005). Although not unique to Zimbabwe, the paucity of literature on the information and communications sector in the country deserves attention in a research. Since it is imperative to discuss the overview of the information and communications sector in Zimbabwe, the issues about the lack of literature in the sector will be revisited later. Comparatively young to South Africa's, Zimbabwe's information communications sector boasted of a relatively vibrant and diversified media in terms of the size of the country, economy and nature of politics (IMPI report, 2014).

Unplanned Findings

On a general note, delving into the 'character' of Zimbabweans in relation to their attitude towards research funding as discussed in chapter 1 is something that simply caught my attention because it is something that became apparent during the study. Sourcing for additional funding for the study is something I could not

avoid due to the costs linked to studies at this level. As I attempted to source for financial support for my study the responses I got were revealing as highlighted in chapter 1 sub section 1.18. Through the responses to my request I observed the triviality the private sector considered not only research funding but the gamut of manpower development. At the national level very little if anything, was devoted to research. As a result, I concluded that research was the least considered aspect of the Zimbabwean academic culture. This was rather ironic for a nation with the highest literacy rate on the continent.

The discussion of the internet the mobile sector and other telecommunication platforms was not deliberate, but a result of the convergence of the media as by Golding, (2008). The linkages between broadcasting and other platforms is a phenomenon of the moment in as much as it is of history. Convergence which was viewed in bad taste alongside such tendencies as monopoly and oligopoly for students of media economics not long ago, has became a naturalised aspect of the evolution of current media (ibid.).

The observations that as a people we were deeply divided and suspicious of each other were critical to the study as the reflected on the manner in which DBM would be implemented and also whether the country would succeed in implementing the programme. Discussed below therefore are some of the recommendations to emerge from the study

8.5   Recommendations of the Study

As part of the study's recommendation a central feature to come out of the study, was the proposal for the setting up of an all stake-holder committee for the country that would research around the strategic issues at the ITU. The proposal came about due to the growing strategic role of the information and communications sector in the economy. Observed was also the need for a strategy, which defined the mechanisms of growing the information and communications sector of small countries at both the continental African Union and national Zimbabwean levels. This could be achieved through the promotion of research and development around the strategic issues of DBM. The study observed the need to explore mechanisms through which weaker nations could possibly combine resources to overcome some of the challenges, in transforming their broadcasting sectors.

Ideally, this could result in a continental or even regional strategies regarding DMB as the current approaches are ineffectual. A credible, robust and practical strategy was thus required for Africa to become a giant in terms of information and communications. It is within the context of such proposals that although with an ulterior motive, the proposals by a Chinese firm Star Times Communications, for the sharing of

infrastructure between Zimbabwe and Tanzania, provides for a possible model upon which small countries could share digital broadcasting infrastructure.

Star Times Communications was the first international company engaged by the government of Zimbabwe to implement the digital programme. The project proposals by Star Times Communications were rejected by the Zimbabwean government because the company did not want to invest in the country, but to exploit the infrastructure they had already invested in Tanzania. They also wanted 60 percent of the cake and as observed during interviews this meant 60 percent of all subscriptions fees going out of the country.

Another proposal made during the study, was for Zimbabwe to consider the 'reverse - engineering' of set top boxes (STBs) as a way for the country to cut on the costs for importing these gadgets, but most importantly also for the country to cash in on the windfalls to be realised from the sale of such gadgets and other electronic devices linked to DBM. Notably, at the time of the study the government of Zimbabwe was still grappling with the logistics of distributing some 400 000 set-top-boxes (STBs) acquired to test the completed phases of the digital system. Besides, the 400 000 STBs acquired at a cost of US$18 million were a drop in the ocean. In simple terms, STBs could be considered the equivalent of a decoder as they enable reception of the digital broadcast signal.

Proposed also was the need for a technological policy that would specify how the country needs to handle issues of technology in terms of research and development and also in terms of procurement. Due to corruption many times government officials have procured incompatible or obsolete equipment which have been rendered useless upon arrival.

Furthermore, questions about STBs arose on whether government should subsidise or issue them out for free to the people. Zimbabwe has a Scientific Industrial Research and Development Centre SIRDC which could explore the possibilities of this idea. In simple, reverse-engineering involves building a gadget, copying from the prototype. Obviously this entails a once off cost toward copyrights. Apart, from SIRDC, the country boasts many universities, who if properly funded could also be interested in engaging in such ideas.

8.6   The study's final conclusion

Digital broadcasting migration in the case of Zimbabwe can be considered as a phenomenon in search of perspectives. Some of the academics who were interviewed for the opinions about the programme

struggled to make meaning of the programme. One academic openly admitted to the lack of knowledge about DBM. Ordinarily academics are considered opinion leaders in society especially in the areas of specialisation. By extrapolation if lectures communications lacked knowledge about DBM the situation with the ordinary citizens could even be worse. The Zimbabwean broadcasting sector was undercapitalised and in need of a major facelift in terms of the policy framework, technological investment, content among other issues. Most fundamentally, the country needs policies that adapt change

8.7   Further Research

The roll-out of digital broadcasting migration in Zimbabwe is an on-going process. Therefore, new insights about the programme are needed. The information and communications sector has become dynamic, just as the technology upon which the sector is based. New insights, in terms of theory are required. Most importantly, an area for further research concerning technology in Africa would be its relations with the 'ordinary' people in the streets and some of the country's remote areas rather that the perspectives of the erudite such as scholars and government officials. It appears the area of spectrum management is still under-researched. For instance there is need to engage with views about how greater radio frequency utilisation a direct consequence of digital broadcasting migration can benefit people in remote rural areas in Zimbabwe? How are the current reforms in the information and communications sector as a result of DBM altering or integrating the traditional forms of communications in the Zimbabwean mediascape. Also since the study employed a purposive sample to obtain views about the programme which ultimately involved the opinions of the erudite, the views of the ordinary are needful. Zimbabwe's broadcasting sector is a sector in need of rethink in terms of the aspects highlighted above. It remains the least developed in the region yet the first to be established in terms of many benchmarks.

BIBLIOGRAPHY

Books, Book Chapters and Journal Articles

Adda J. & Ottaviani M. (2005). *Digital TV* CEPR, CES, MSH

Ake, C. (2005). *The feasibility of democracy in Africa,* Codesria: Daka,.

Allen, R. C. (2003). *Channels of Discourse, Reassembled: Television and Contemporary Criticism.* Routledge: London.

Altheide, D. L. (1996). *Qualitative Media Analysis.* Thousand Oaks: Arizona State University, Arizona, London, New Dheli.

Appiah, A. K. (1989). *Necessary Questions: An Introduction to Philosophy.* Prentice-Hall: Englewood Cliffs.

Appiah, A. K. (1992). *In my Father's House: Africa in the Philosophy of Culture.* Oxford University Press: Oxford, New York, New Delhi, Toronto, Cape Town, Singer Pore, Hong Kong, Nairobi, Karachi, Madras, Delhi, Bombay, Dar es Salaam.

Arsenault, C. D. and Morrison-Beedy, D. (2004). *Focus on Research Methods Maintaining your Focus in Focus Groups: Avoiding Common Mistakes.* University of Buffalo: State University of New York, Buffalo, NY.

Atkinson, M. (1998). *Our Master's Voice: The Language and Body Language of Politics.* Methuen: London, New York.

Ayoade, J. in P. H. Coetzee (2003). *The African Philosophy Reader.* Routledge: New York.

Babbie, E. (2008). *The Basics of Social Research.* Thompson Wadsworth: Toronto.

Balarabe, S. (2013). *Digitisaion of television broadcasting in Nigeria review.* World academy of science, engineering and technology international journal of social, management, economics and business engineering vol,7 No:10,2013.

Barker, C. (1999). *Television, Globalisation and Cultural Identities.* Open University Press: Buckingham, Philadelphia.

Baxter, P. and Jack, S. (2008). *Qualitative Case Study Methodology: Study Design and Implementation for Novice Researchers.* McMaster University: West Hamilton, Ontario, Canada.

Bayart, J. F. (1993). *The State in Africa: The Politics of the Belly.* Harlow Longman: London.

Bell, D. & Kennedy, B. M. (2007). *The Cybercultures Reader*. 2nd Ed. Routledge: London.

Berger, G. (2010). *Challenges and Perspectives of Digital Migration for African.* Rhodes University.

Berger, G. (2012). *Challenges and Perspectives of Digital Migration for African Media.* Panos Institute of West Africa: Dakar.

Berwanger, D. (1987). *Communication Manual; Television in the Third World: New Technology and Social Change.* Media and Communication Department: Friedrich – Ebert – Stiftung.

Bishau, D. (2010). *Reign with Him for Thousand years (Rev 20:6) A Socio-Hermeneutical Exposition of Biblical and Contemporary Millerianan Movements in Zimbabwe as Radical Exposes to Deprivation.* University of Bamberg Press.

Blanche, T. M. and Durrheim, K. (2006) *Applied Methods for the Social Science.* Juta: Cape Town.

Blaxter, L. (2006). *How to Research.* Open University Press: London.

Bodunrin, P. O. (1975). 'The Question of African Philosophy'. Philosophy, Vol. 56, 1956, 1981, in O. Odeku, *The fundamental principles in the question of African Philosophy'* in Wright, African Philosophy. Second Order, Vol. No. 1 pp. 44-45.

Booth, K. (2007). *Theory of World Security.* Cambridge University Press: London.

Bordens, S. K. & Abott, B. B. (2008). *Research Design and Methods: A Process Approach.* McGraw: Hill International Edition.

Bowen, G. A. (2005). *Preparing on Qualitative Research: Lessons Learned.* Western Carolina University: Cullowhee, North Carolina.

Boyd-Barrett, J. O. & Newbold, C. (eds) (1996). *Approaches to Media.* A Reader: London, Arnold.

Braman, S. (1989). *Defining Information: An Approach for Policymakers.* Butterworth and Company (Publishers) Ltd: London.

Braman, S. (2003). *The Emergent Global Information Policy Regime.* Houndsmills, UK: Palgrave Macmillan: London.

Braman, S. (2004). *Where Has Media Policy Gone? Defining the Field in the Twenty-First Century, Communication Law and Policy,* 9:2, 153-182, DOI: 10.1207/s15326926clp0902_1.

Braman, S. (2009). Globalising Media Law and Policy in D. Thussu (Ed.), *Internationalising Media studies.* Routledge: London.

Briggs, A. & Burke, P. (2009). *A Social History of the Media.* From Gutenberg to Internet.3rd Ed. Polity Press.

Brown, A & Picard, R. G. (2005). *Digital Terrestial Television in Europe.* Lawrence Erlbaum Associates Publishers: Mahwah, New Jersey.

Brown, D. (1998). *Africa' s Choice: After thirty years of World Bank.* Boulder Colorado: Western Press.

Brugger, N. (2003). *Theories of Media and Communication: Histories and Relevance.* University of Aarhus: Denmark.

Burns, J., Marks, P., Leborgue, F. & Rudd, R. (2004). *Study on Spectrum Management in the field of broadcasting: Implications of digital switchover for spectrum management.* Aegis Systems: Brussels, Luxemburg.

Cabral, A. (1966). *The Weapon of Theory.* Conference Paper: Havana

Calabrese, A. (1999). *The Information Age According to Manuel Castells.* International Communication Association University of Colorado at Boulder.

Candel, S. R. (2007) *The migration towards digital terrestrial television (DDT):Challenges for public and public broadcasters.* Routledge: London

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

Carter, M. S. & Miles, L. (2007) *Justifying Knowledge, Justifying Method, Taking Action: Epistemologies, Methodologies and Methods in Qualitative Research*. Sage Publications. DOI: 10.1177/1049732307306927.

Casimir, A. K. G. (2005). *African Philosophy: The Great Debate and End of Controvesy in the Light of Professor Maduabuchi Dukor's Theistic Humanism.* Institute of African Studies, University of Nigeria: Nigeria.

Castells, M. (1996). *The informative age: economy, society and culture. Volume 1: the rise of the network society.* Oxford: Blackwell.

Castells, M. (2004). An Introduction to the Information Age in F. Webster, (ed), *The Information Society* Reader: London, Rutledge.

Cavana, R. Y. *et. al.*, (2000) *Applied Business Research: Qualitative and Quantitative Methods.* Brisbane: John Wiley and Sons, Australia

Cave, M. & Nakamura, K. (Eds.) (2006). *Digital Broadcasting Policy and Practice in the Americas, Europe and Japan.* Edward Elgar Cheltenham: UK. Northampton, MA. USA.

Cave, M. (2007). *New spectrum using technologies and the future of spectrum management: a European Policy Perspective*. University of Warwick: UK.

Chari, T. J. *et. al.* (2003). *Media and Communication in Zimbabwe and Africa.* Module BAMS301 ZOU Fidelity Printers: Harare

Chikoore, M. (2001). *An examination of the Zimbabwean music industry 1965-1985 with special reference to African popular music.* unpublished BA(h) dissertation: University of Zimbabwe

Chirimuuta, C.*et. al.,* (2014). *Research Methods Module.* SHCM 453 Zimbabwe Open University, Harare.

Chirume, C. (2005). *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.

Chirume, C, (2012). *Globalisation and the Role of the African Intelligence Service in Development: A Literature* Review. Women's University in Africa: Harare, Zimbabwe. Unpublished Master of Science Dissertation Women's University in Africa, Harare.

Chirume, Enesiti (2010) *Texts in Dialogue Intertextuality in Advertising in Botswana.* University of Botswana: Gaborone

Chirume Erasmus, (2008). *A study of Educational Leadership: The Principal s' and Teacher s' Perceptions of Teacher Leadership Dynamics in Southeast Ohio.* College of Education, Ohio University: USA, A Published Doctor of Education study, Ohio.

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

Chomsky N. (2013) *on MisEducation.* Rowan and Littlefield Publishers: Oxford London

Chun, W. H. K. and Keenan, T. (2006). *A history and Theory Reader New Old Media.* Routledge Taylor and Francis Group New York, London.

Cogburn D. L. and Nyaki A.C. (2001) *Prospects for the Digital Economy in South Africa: Technology, People and Strategies.* United Nation University (UNU) World Institute of Development Economics Research (WIDER)

Collins, R. and Murroni, C. (1996). *New Media, New Policies.* Polity Press: London.

Considine, M. (2005). *Making Public Policy*: *Institutions, Actors, Strategies*. Polity Press: London.

Cooper, M. (2004). *Expanding the Digital Divide and Falling Behind on Broadband: Why Telecommunications Policy of Neglect is not Benign.* Consumer Federation of America: Consumers Union.

Coetzee P. H. (2003), *The African Philosophy* Reader Routledge, New York.

Craig, R. T. and Muller, H. L. (2007). *Theorising Communication: Readings Across Traditions*. Sage Publications: London. New Delhi. Los Angeles. Singapore.

Craig, R. T. (1989). Communication as a practical discipline, In B. Dervin, L. Groosseg, B. J. O'Keef, & E Wartella (Eds.) *Rethinking Communication:* Vol.1 Paradigm issues (pp 97-122) Newbury Park, CA: Sage.

Cramer, J. M. (2009). *Media, History, Society*: *A Cultural History of U.S. Media.* John Wiley & Sons Ltd Publication: New York.

Creswell, J. W. (1994). *Research design: Qualitative and Quantitative approaches.* Thousand Oaks, CA: Sage, New York.

Creswell, J. W. (2003). *Designing and Conducting Mixed Methods Research* Thousand Oaks: Sage, London.

Creswell, J. W. (2007). *Designing: Qualitative, Quantitave and Mixed Methods approaches.* Thousand Oaks: Sage, London.

Creswell, J. W. and Plano Clarke, V. L. (2007). *Designing and Conducting: Mixed Methods Research* Thousand Oaks, CA: Sage. London.

Creswell J. W. (2009). *Research Design.* Sage Publication: London.

Cuilenburg, V. J. and McQuail D. (2008). *Media Policy Paradigm Shifts: Towards a New Communications Policy Paradigm.* Sage Publications.Com. DOI: 10.1177/0267323103018002002.

Dahlberg, L. (2006). *Extending the Public Sphere through Cyberspace: The Case of Minnesota E-Democracy.* Firstmonday: Minnesota.

Denscombe, M. (2007). *The Good Research Guide.* Open University Press: London.

Denzin, N. K. (2000). The Practice and Politics of interpretation in N. Denzin and Y. Lincoln (Eds.), *Handbook of Qualitative Research (2nd ed)*. Thousand Oaks, CA: Sage, London.

Denzin, N. K. (2009). *Qualitative enquiry under fire.* Wallnut Creek: Left Coast Press.

Denzin, N. K. and Lincoln, Y. S. (2003). *Strategies of Qualitative Inquiry,* Thousand Oaks, CA: Sage, London.

Deudney, D. (1983). *"Whole Earth Security: A Geopolitics of Peace,"* World watch Paper. Washington DC, Worldwatch Institute.

Diop, A. C. (1974). *The African Origin of Civilisation Myth or Reality.* Lawrence Hill and Company: New York. Westport.

Downing, S. (1996). *Internationalising Media Theory: Transition, Power, Culture:* Sage, London.

Drummond, P. and Paterson, R. (1985) ed *Television and its Audiences.* London British Film Institute.

Dubberley, S. J. (2010) *A Qualitative Study of the Duke of Edinburgh's Award and Young Offenders in the Secure Estate.* University of Wales UK.

Dukor, M. (2002). *Theistic Humanism, African Philosophical Tradition.* 1st published in a journal of India Council of Philosophical Research, Volume Xiii No. 3 pp47-76. The Abstract Appeared in Philosophers Index Vol. 36 No. 2, 2002 of the Philosophy Information Centre, Bowling Green State University, Ohio U.S.A. pp. 195. Cosmological explanations of life-thereafter (page 83).

Dukor, M. (2005). *African Philosophy: The Great Debate and End of Controversy in the Light of Theistic Humanism.* University of Nigeria: Lagos.

Duncan, J. (2000). *Broadcasting and National Question: South African broadcast Media in an Age of Neo-liberalism*. Freedom of Expression Institute: Johannesburg.

Duncan, J. (2007). Neoliberal economic and broadcasting: history and theory in J. Duncan. *Broadcasting and the National Question*. FXI: Johannesburg.

Duncan, J. (2012). *Unpacking South Africa's Digital Broadcasting Transition.* South African Civil Society Information services (SACSIS).

DU PLooy, G. M. (2006). *Communication Research: Techniques, Methods and Applications.* Juta and Company Ltd

Durham, G. M. and Kellner, M. D. (2006). *Media and Cultural Studies.* Blackwell Publishing: Australia, Carlton.

Durham, M. G. and Kellner, M. D. (2007). *Media and Cultural Studies: Key Works.* Blackwell Publishing: London

Elliott, R., and Jankel – Elliott, N. (2003). *Using ethnography in Strategic consumer research, Qualitative Market Research* 6(4), 215.

El-Ojieli, C. & Hayden, P. (2006). *Critical Theories of Globalisation*. Palgrave McMillan.

Fanon, F. (1963). *The Wretched of the Earth.* Grove Press: New York

Federiske, J. (1990). *None but Ourselves: Masses vs Media in the making of Zimbabwe*. OTAZI in association with ANVIL Press: Zimbabwe

Feltoe, G. (1997). *A Guide to Press Law in Zimbabwe*. Legal Resources Foundation: Harare

Fetterman, D. M. (2010). *Ethnography Step by Step 3rd ed.).* Thousand Oaks: Sage. London.

Feuer, J. (1983). *The Concept of Live Television: Ontology as Ideology in Regarding Television: Critical Approaches, an Anthology,* edited by E. Ann Kaplan: Los Angeles.

Fischer, H. (2006). *Digital Shock: Confronting the New Reality*. McGill-Queen's University Press: London.

Fooden, G. (2005). *Africa a Modern History.* Atlantic Books: London.

Foroohar, (2005). *How New Technology Will Revolutionise What You See and How You Watch Newsweek*. 38- 87.

Foucault, M. (1975). *Discipline and Punish.* Gallimard: France.

Fourie, P. J. (2007). *Media Studies: Volume One Institutions, Theories and Issues.* Juta, Pretoria: South Africa.

Freedman, D. (2008). *The Politics of Media Policy*. Polity Press.

Freire, P. (1921 – 1997.)

Fukuyama, F. (1992. *The end of history and the Last Man.* Harper and Collins: London

Furguson, M. (1992). *The mythology about Globalisation,* European journal of communication no.7

Gaghardi, M. (2013). *Does Cultural Imperialism Exist Today? A Critical Analysis of International Communication.* Sage Publications

Gallagher, K (2008). *The Methodological Dilemma: Creative, Critical and Collaborative Approaches to Qualitative Research.* Routledge Taylor and Francis Group: London and New York

Galperin, H. (1999). *Cultural Industries Policy in Regional Agreements: the Case of NAFTA, the European Union and MERCOSUR in Media, Culture and Society*. Vol. 21

Galperin, H. (2004). *New Television, Old Politics: The Transition to Digital TV in the USA and Britain.* Cambridge University Press: London

Gates, B. (1999, August-September). *Interactive TV arrives.* Commonwealth Broadcaster, Issue no.122.

Gill, J. and Jameson, P. (1997). *Research Methods for Managers*. Paul Chapman: London.

Gillham, B. (2000). *The Research Interview.* Continuum: London and New York

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

Goleniewski, L. (2007). *Telecommunications Essentials.* Addison-Wesley: New York

Gono, G. (2008). *Zimbabwe's Casino Economy: Extraordinary Measure for Extraordinary Challenges*. ZPH Publishing: Harare.

Graham, A. (1998). *Broadcasting Policy and Digital Revolution.* Blackwell Publishers: Oxford.

Graham, M.; Hake, S. A. & Stephens, M. (2011). *Geographies of the World's Knowledge.* London: Convoco! Edition. Retrived from htt:/www.oii.ox.ac.uk/publications/convoco-geographies.en.pdf

Gralla, P. (2007). *How the Internet Works.* Que: USA.

Gramsci, A. (1971). *Selections from Prison notebooks,Buttigieg,* J.A. (ed) (1992), Columbia University Press, New York.

Gray, A. (2003). Research Practice for Cultural Studies. Sage: London.

Grisprud, J. (2010) *The Digital Public Sphere: Challenges for Media Policy.* Nodicom

Guba, E.G. (1990). *The Paradigm Dialogue*. Newbury Park, CA: Sage Publications Inc.

Guba, E. G. & Lincoln, Y. S. (1994). *Completing Paradigms in Qualitative Research,* eds N.K Denzin & Y.S Linclon, Sage: Thousand Oaks, London

Guion, L. A. (2002). *Triangulation: Establishing the Validity of Qualitative Studies*. Institute of Food and Agricultural Science: University of Florida.

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

Gyekye, K. (1987). *An Essay on African Philosophical Thought: The African Conceptual Scheme.* Cambridge University Press: Cambridge.

Habeck, M. R. (2003). *Storm of Steel.* Cornell University: New York.

Habermas, J. (1989). *The Structural Transformation of the Public Sphere.* Massachussett Institute of Technology: USA.

Haddow, I. (1999, November-January). *Satellite for Africa.* Africa Film and TV Magazine. Vol.14

Haddow, I. (1999, February –April). *The future of African Broadcasting Technology vs Economics*. Africa Film and TV Magazine Vol. 38

Hall, S. (1997). *Representation. Cultural representations and signifying practices.* Sage in association with The Open University: London

Hallett, L. and Hintz, A. (2009). *Digital Broadcasting – Challenges and Opportunities for European Community Radio Broadcasters.* University of Westminister: Harrow and Central European University: Budapest.

Halliday, M. K. (2012). *Introduction to Systemic Functional Linguistics for Discourse Analysis.* Mich O'Donnell Universidad: Antonoma de Madrid.

Halloway, I. & Wheeler, S. (2002). *Qualitative Research in Nursing (2nd ed).* Blackwell: Oxford

Hamm, B. and Snondych, R. (2005). *Cultural Imperialism: Essays on the Political Economy of Cultural Domination.* Broadview Press: London.

Henry, J. (2006). *Convergence Culture.* New York University Press: New York.

Hart, C. (2007). *Doing a Literature Review: Releasing the Social Science Research Imagination*. SAGE Publications: London.

Herman, E. S. & McChesney R. W. (1997). *The New Missionaries of Corporate Capitalism.* Casell: London.

Herman, E. S. (2012). *Popular Media in Africa*. Casell: London.

Herman, W. (ed.) (2012). *De-Westernising Communication Theory: The Potential and Challenges of "popular" Media in Africa.* Casell: London.

Holloway, I. & Wheeler, S. (2002). *Qualitatitve Research in Nursing (2nd ed).* Blackwell: Oxford.

Hountondji, P. (1983). *African Philosophy: Myth or reality.* Bloomington: Indiana University Press.

Hwei, P. (2003). *Theory and Problems of Analogue and Digital Communications*. McGraw-Hill: New York USA.

Ibagere, E. (2010). *Spectrum Management.* Panos Institute of West Africa: Dakar .

Jackson, M. (2009). *Neo-Colonialism, Same Old Racism: A Critical Analysis of the United States Shift toward Colourblinders as a tool for the protection of the American Colonial Empire:* 11 Berkeley J. Afr.-Am. L. & Pol'y 156 (2009).

Johnston, K. (2011). *The influence of cultural selection on strategic communication (A thesis submitted in accordance with the requirements for the degree of Doctor of Philosophy)* Queensland University of Technology.

Kadenge, L. (2003). *Critical voice : Emerging in times of crisis.* ESS Chairperson.

Korten, D. (1995). *When Corporations Rule the World.* Wayne Visser: London.

Krasnow, E. G and Longley, L. (1978). *The Politics of Broadcast regulation.* St. Martin's Press: New York.

Krug, G. (2005). *Communication, Technology and Cultural Change.* Sage Publication: London.

Kuhn, T. (1996). *The Structure of Scientific Revolutions.* University of Chicago Press, Chicago

Kuhn, T. (2005). *What is a Model?* Darmstadt University of Technology: Darmstadt, Germany.

Kwame, S. (1992). *How not to teach African Philosophy* APA Newsletter 91 (1).

Leedy, P. D. & Omrod, J. E. (2010). *Practical Research*: *Planning and Design.* Amazon Company.

Lesame, N. C. *New Media Technology and Policy in Developing Countries.* Van Shaik: Pretoria.

Lester, S. (2014). *An Introduction to Phenomenological Research.* Stan Lester Developments: Tauton

Lieber, P. S. (2004). *Public Relations Ethics: A cross-cultural analysis.* Louisiana State University: Louisiana.

Lister, M. *et. al.,* (2003). *New Media A Critical Introduction.* Routledge Taylor and Francis Group: London and New York.

Livingstone, W. (2001). *Reconsidering Cultural Imperialism Theory.* Transitional Broadcasting Studies Archives no. 6.

Locke, J. (1632-1704).

Lofland, J.; Snow, D.; Anderson, L. & Lofland, L. (2006). *Analysing social setting.* Beslmont, CA: Wadsworth Thomson.

Lozano *et. al.,* (2013). *A Bandwidth-Efficient Service for Local information Dissemination in Sparse to Dense Roadways.* University Carlos 111: Madrid.

Mackenzie, J.M. (1984). *Propaganda and Empire: The Manipulation of British Public Opinion,* Manchester, Manchester University Press

Madikiza, (2011). *Broadcast Digital Migration Policy in South Development* Bank of Southern Africa, South Africa
DOI:10.4018/978-1-61520-847-0.ch003

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

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

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

Mararike, C. G. (1998). *The Role of Culture and History in Human Factor Development: A Comparative Analysis.* Vol. 4. Harare.

Marshall, C. and Rossman, G. B. (1999). *Designing Qualitative Research* 3rd Edition Sage Publications

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

Mattelart, A. *et. al.,* (1979). (eds). *Communication and Class struggle,* Volume One, New York.

Mattelart, A. (1994). *Mapping world communication*, University of Minnesota Press.

Maxwell, J. A. (1996). *Qualitative Research Design: An Interactive Approach*, Thousand Oaks, CA: Sage

Maxwell, J. A. (1997). *Designing a Qualitative Study in L. Bickman and D. G. Rog (Eds) Handbook of Applied Social Research Methods*. Sage Publications, London.

Mazango, E. M. (1990). *Telecommunication Policy and Regulation.* Unpublished dissertation for MPhil, University of Oslo, Oslo.

McKay, S. L. and Hornberger, N. H. (1996). Sociolinguistics and Langauage Teaching, Cambridge University Press, Cambridge

McChesney, R. W. and Herman, E. S. (1998). *The Global Media: The Missionaries of Global Capital.* Casell, London

McDaniel, P. (2014). *What does a Research Assistant Do?* Synonym Com. London

McLuhan, M. (1964). *Understanding Media: The Extensions of Man,* Signet Books, New American Library New York.

McQuail, D. (2005). *McQuail's Mass Communication Theory* Sage: London.

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

Medeisis A. (2009). *Case Studies of Spectrum Management in Developing Countries: Sierra Leone and Zimbabwe,* Vilnius Gediminas Technical University, Luthuania

Melkote, S. R. and Steeves, H. L. (2001). *Communication for Development in the Third World: Theory and Practice for Empowerment*. Sage: London

Meredith M. (2005). *The Fate of Africa: A History of Fifty Years of Independence* Public Affairs New York

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

Michael, E. P. (1998). *Competitive Advantage: Creating and Sustaining Superior Performance,* The Free Press New York

Mignolo, D. W. (2007). *Epistemic Disobidience and the Decolonial Option: A Manefesto,* Duke University North Carolina

Mignolo, D. W. (2009). *Epistemic Disobedience, Independent thought and decolonial freedom* Princeton University Press, London

Mignolo, D. W. (2011). *The Darker Side of Western Modernity: Global futures, decolonial options* Duke University North Carolina

Mignolo, D. W. (2012). *Local Histories/Global designs: Coloniality, Subaltern Knowledges, and border thinking* Duke University North Carolina

Milan, S and Hintz, A (2012) *Struggling for open information environments: civil society initiatives for media policy change* Toronto Canada

Miller, M. (2013). *Content Consumption in the Digital Age: A Speech Delivered to the Royal Television Society,* London.

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

Mills, W. (1951), *The Politics of Truth Selected Writings* Oxford University Press, Oxford

Mkandawire, T. (2005). *Maladjusted African Economies and Globalisation in Africa Development,* Vol. XXX Nos. 1 and 2, 2005 1-3 Council for Development of Social Science Research in Africa. CODESSRIA, Dakar.

Mohammadi, A (1997). *International Communication and Globalisation A critical Introduction* SAGE Publications London *Radio and Television Studies.* Thousand Oaks. New Delhi.

Moores, S. (2005). *Media/Theory: Thinking about Media and Communications* Routlege, Londom

Morna, C.l and Khan .Z. (2001). Southern Africa media training needs assessment, NSJ Trust (http://journ.ru.ac.za/staff/guy.sadac.sadctrain.htm)

Morrison, T. and Varan, D. (200). *Digital Television in Australia* Austrian Broadcasting Authority Sydney

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

Mouton, J. (2009). *How to succeed in your Master's & Doctoral Studies*: A South African Guide and Resource Book. 11th Ed. Van Schaik Publishers Pretoria.

Mowlana, H. (1997). *Global Information and World Communication* Sage Publications, London; Thousand Oaks, New Delhi

Muchena, E. (2013). *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.

Muchena, E and Butu, K (2010). *Rural Reporting Module*, Zimbabwe Open University

Mudzengi, E. *et. al.,* (2003). Zimbabwe Open University, Harare, Zimbabwe

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

Newman, J.H. (1996). *The Idea of a University, Yale University Press,* New Haven and London

Nilene, O. A. (1994). *African Pride from the other side* NOA international, New York

Ninsin, A. K. (1999). *Globalisation, Libarilisation and Africa's Marginalisation,* African Association of Political Science (AAPS) Print Source, Harare

Nzongola-Ntalaja, G. and Lee, M. (1998). *The State and Democracy in Africa,* African Association of Political Science/Africa World Press, Harare.

Obijiofor, L (2013). *To join or not to join: Africa's dilemma in the age of technology*. University of Lagos, Lagos

Obonyo, L. (20011). *Towards a theory of Communication for Africa: The challenges for emerging democracies.* Communicatio 37 (1): 1-2.

Olwal, T., Masonta, M., Mfupe, L., Mzyece, M. (2013). *Broadband ICT Policies in Southern Africa: Initiatives and Dynamics Spectrum Regulation* www.IST-Africa.org/Conference

O'Dawyer, B. (2004), Qualitative data analysis: Exposing a process for transforming a 'messy' but 'attractive' nuisance. In C. and Lee, B. (Eds.) *A real life guide to accounting research.* Elsevier: Oxford.

Padgett, (2004). *The Qualitative Research Experience* Sage, Thousand Oaks, London

Palys, T. (2008). Purposive Sampling. In L. M. Given (Ed.) *The Sage Encyclopaedia of Qualitative Research Methods (Vol. 2).* Sage. Los Angeles.

Parton, M. Q. (2002). *Qualitative Evaluation and Research Methods.* Thousand Oaks, CA: Sage Publications, inc.

Perkins, J. (2006). *Confessions of an Economic Hit Man.* Plume Books, USA.

Pfukwa, C. (2005). *Multimedia Communication Module,* Zimbabwe Open University

Polkinghorne, D.E. (2005). *Language and Meaning: Data Collection in Qualitative Research. Journal of Counselling Psychology*. Vol.52 (2). 137-145.
DOI: 10.1037/0022-0167.52.2.137.

Pongweni, A. J. C. (1982). *Songs that Won the Liberation War.* College Press: Harare.

Potter, E. H. (1998) *Economic Intelligence and National Security.* Carleton University Press: Canada.

Powell M.K. (2002). *Broadband Migration111: New Directions in Wireless Policy.* University of Colorado

Prahalad, C. K. (2006). *The Fortune at the Bottom of the Pyramid.* Wharton School Publishing: Pearson Education University of Pennsylvania.

Puttman, D. (1993, April – June). *Is there a worldwide future for public services Broadcasters* Commonwealth Broadcaster. Issue no. 99.9.

Quiggin, T. (2007) *Seeing the Invisible* Nanyang Technological University: Singapore.

Raboy, M. (1997). *Comparative Media Histories in Developing World*, University of Leicester: London.

Raboy, M. (2002). *Rethinking Broadcasting in a Global Media Environment.* University of Montreal: Canada.

Raboy, M. (2003). *Rethinking Broadcasting Policy in a Global Media Environment.* University of Leicester: London.

Rancy, F. et. al., (2011). *Transition to Digital TV and Digital Dividend*. Telsiks: ITU.

Ranger, T, (2005). *The Rise of Patriotic Journalism in Zimbabwe and its Possible Implications.* Westminister Papers in Communication and Culture, Special Issue November 2005: 8-18

Reddy, M.J. (1979). The Conduit Metaphor: A Case of Frame Conflict in our Language about language about Language. In Ortony (Ed.), Metaphor and thought Cambridge, Uk: Cambridge University Press.

Rickleger, S. (2011). *Globalisation vs Glocalisation.* Word Press.Com. Site

Ritzer, G. (2010). *Rethinking Globalisation: Globalisation and soothing /nothing*, Sage Publications: London

Ritzer, G. (2004). *In: Encyclopedia of Social Theory* Thousand Oaks: Sage Publications. London.

Rubin, H. & Rubin, I. (1995). *Qualitative Interviewing: The Art of Hearing Data*. Sage Publications: London.

Sauko, P. (2003). *Doing Research in Cultural Studies: An Introduction to Classical and New Methodologal Approaches.* SAGE Publication: London, Thousand Oaks: New Delhi.

Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research Methods for Business Students* (5thEd.). Prentice Hall: New York.

Saunders, R. (1991). *Information in the Interregnum: The Press, State and Civil Society in the Struggles for Hegemony, Zimbabwe 1980-1990.* Unpublished Ph.D. Thesis, Carlton University: Canada.

Schulzinger, R. D. (1990). *American Diplomacy in the Twentieth Century*. Oxford University Press: New York, Oxford.

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

Shannon, C. E. & Weaver, W. (1949). *The Mathematical Theory of Communication.* Illinois: University of Illinois Press.

Sir Karl Raimund Popper (1902-1994)

Smith, A. (2006). *The Wealth of Nations.* W. Straham and T. Cadell: London

Smith, T. (2014). *Universal access or corporate gain? Researching infrastructural roll out of the South African digital migration.* Unpublished MA dissertation, University of Witwatersrand: Johannesburg.

Snoddy, R. (1999). August-September). *The Digital Opportunities Ahead.* Commonwealth Broadcaster, Issue no. 122.

Starks, M. (2010). *China's Digital Switchover: International Context* International Journal of Digital Television Volume 1 Number1.

Stork, C. & Kanyangela, R. (2009) *Digital TV Switch Over: Economic Impact Assessment.* ICT Consultants: Gaborone, Botswana.

Struwig, F. W. & Stead, G. B. (2013) *Research Planning, Designing and Reporting.* Pearson: Johannesburg.

Stuart, A. G. (2001) *The Education of Journalists* Carleton University: Ottawa.

Swedberg R. (2010). *From theory to theorising* Cornell University.

Teer-Tomaselli, R. E. (1989). *Broadcasting in the era of Information Capitalism,* Critical Studies Group Seminar Papers. University of Natal: Durban.

Teer-Tomaselli, R. E. (1992). *The Politics of Discourse and the Discourse of Politics: Images of Violence and Reform on the South African Broadcasting Corporation's Television News Bulletins-July 1985-November 1986,* University of Natal: Durban, South Africa.

Teer-Tomaselli, R. E. (1994). *The mediaisation of culture:* John Thompson and the vision of public service broadcasting', S.-Afr.Tydskr.Wysb.1994, Vol.13, No.3.

Teer-Tomaselli, R. E. and Tomaselli, K. G. (1996). Reconstructing public service broadcasting: Media and democracy during transition in South Africa in M. Bruun Andersen, (ed) *Media and Democracy*. University of Oslo: Oslo.

Teer-Tomaselli, R. E. (2005). The Role of the Public Broadcaster in A. Hadland (ed.) *Changing the Fourth Estate: Essays on South African Journalism.* Human Science Research Council: Capetown.

Teer-Tomaselli, R. E. (2009). Global Trends and National Dilemmas in Broadcasting in H. Wasserman, E. Louw & S. Sesanti (eds.) *At the end of the Rainbow: Power, Politics and Identity in Post-apartheid South African Media*. HSRC Press: South Africa.

Thompson, K. (1997). *Media and Cultural Regulation*. SAGE Publication.

Tichapondwa, S. M. (ed) (2013). *Preparing your Dissertation at Distance: A research Guide. The Virtual University for the Small States of the Commonwealth* (VUSSC) SADC Centre for distance education, Gaborone.

Tindall, N. T. J. (2007). *Identity, Power and Difference: The Management of Roles and Self among Public Relations Practioners. (An unpublished thesis submitted in accordance with the requirements for the degree of Doctor of Philosophy).* University of Maryland.

Tomaselli, K. G. and Louw E(1991). *Studies on the South African Media* (The Alternative Press in South Africa). Anthrops, Belvile, Cape.

Tomaselli, K.G. (1999). 'Cultural Studies in Africa: Positioning the difference' Critical Arts: A journal of Cultural Studies, Vol. 13, No. 1.

Tomaselli, K.G. and Teer-Tomaselli, R.E. (2008). *New Public Spheres: The Digital Age and Big Brother*. In Mudhai, O.F; Tettey, W. and Banda, F. (eds.) African Media and the Digital Public Sphere Palgrave MacMillan, London and New York

Tomaselli, K.G. (2012) *Alter-egos: Cultural and Media Studies*,Critical Arts: South-North Cultural and Media Studies 26:1, 14-38,

DOI: 10.1080/02560046.2012.663158, http://dx.doi.org/10.1080/20560046.2012.663158.

Tomlinson, J. (2005). *Cultural Imperialism.* Continuum London. New York.

Trend, D. (2007). *Reading Digital Culture,* Blackwell Publishing, Oxford

Trochim, W.K. M. (2001). *The Research Methods Knowledge Base* Cornell University

Tusa, J. (1993, April-June). *The Satellite Age its Challenges and Opportunities.* Commonwealth Broadcaster, Issue no. 99.

Ubayasiri, K. (2006). *Internet and the Public Sphere: A glimpse of You Tube,* Queensland University.

Ukadike N. F. (1994) *Black African Cinema,* Berkeley, University of California Press

Ulrich, W. (2011) *Towards A Taxonomy of Research.* Werner Ulrich's Home Page. Ulrich's Bimonthly November-December 2011.

Underhill, G. (2006). *Conceptualising the Changing Global Order* Taylor and Francis, New York.

Unluer, S. (2012). *Being an insider researcher while conducting case study research.* Anadolu University, Eskisehir, Turkey.

Valdivia, A.N. (2006). *A Companion to Media Studies* Blackwell Publishing. London

Vambe, M. (2001, 2003) *Introduction to Film Studies* Module BAMS 416 /BAMS 202, ZOU

Vaughn, L. (2008). *Doing Ethics: Moral Reasoning and Contemporary Issues* W.W. Norton and Company, London.

Wulff, S. (2000). 'Access to a closed world: methods for a multilocle study on ballet as a career', Amit, V. (ed), Constructing the Field Ethnographic Fieldwork in the Contemporary World Routledge: London

Walsh, M. (2003). *Eaching Qualitative Analysis Using QSR NVivo.* Keene State College, Keene, New Hampshire, USA.

Walter, J. (1986), Development Journalism Zur Entwicking eines neuen journalistischen Berufsverstandnisses, Bonn.

Warren, C. & Karner, T. (2005). *Discovering Qualitative Methods: Field Research, Interviews and Analysis.* Roxbury Publishing Company: Los Angeles.

Weatley, A. (2013). *Spectrum Management* Authority of Jamaica, Kingston, Jamaica, West Indies

Weber, I. (2010). *Commodifying Digital Television in China: A Socio-Linguist Analysis of Media Discourse, Technology Deployment and Control Sage London* http.//nms.sagepub.com/content/12/289 DOI: 10.1177/146444809341442

Webster, F. (2004). *The Network Society* (In Webster, F. (ed.), *The Information Society Reader.* London: Routledge.)

White, A. (2000). *Reconsidering Cultural Imperialism theory* Florida State University, USA.

Williams, R. (1976). *Communications, 3rd ed.* Penguin Books: London.

Willig, C. (2001), *Introduction to Qualitative Research in Psychology: Adventures in theory and method,* Open University Press Buckingham

Windrich, E. (1981). *The Mass Media in the Struggle for Zimbabwe,* Mambo Press, Zimbabwe

Windrich, E. (2010). *Broadcasting in Zimbabwe: An historical perspective,* in Moyo D. and Chuma W. (eds) (2010) Media Policy in a Changing Southern Africa: Critical Reflections on Media reforms in the Global Age, Pretoria: Unisa Press.

Wiredu, K. (1980). *Philosophy and African Culture,* Cambridge University Press, London

Womersley, R.V. (2003). *Digital Switchover: Possible propagation based solution to the lack of spectrum,* The institute of Electrical Engineers, Stevenage, SGI 2AY.

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

Yoon, H. (2013). *Lessons from Digital Switchover in South Korea.* Sage, Soul
DOI: 10.1177/152747641348781

Yosef, A. A. (1988). *Africa: Mother of Western Civilisation* Black African Press

Young, D. (2003). *Discourses on Communication Technologies in Canadian and European Broadcasting Policy Debates* European Journal of Communication. Vol. 18. (2). Pg 209.
DOI: 10.1177/0267323103018002003

Zaffiro, J. (1984). *Broadcasting and Political Change in Zimbabwe.* Department of Political Science. Central College. USA.

Zikmund, W. G. (2003). *Business Research Methods*. Sage Publications: London.

ZBC CHANNELS *on* AIR House Magazine for the Zimbabwe Broadcasting Corporation (2002) Volume 3/1 December to 1-January (Mlambo)

Internership report on Star FM 2014, ZOU, Harare, Mukotekwa Z. O.

Internership Report on ZBC and New ZIANA 2014, ZOU, Nyahwedegwe D.

Government Policy Papers, Newspapers and relevant Legal Acts and ITU guidelines and other Reports

Access to Information and Protection of Privacy Act 2000 (AIPPA)-Government of Zimbabwe

Broadcasting Digital Migration Made Easy.

CQ Press (2008). *Transition to Digital TV*. CQ Press., A division of SAGE Publications

Digital Broadcasting Migration in West Africa: Ghana research report 2011. Association for Progressive Communications and Balancing Act.

DTT: Analogue to Digital Migration in Africa – Strategic Choices and Current Developments (August 2013)

Expanding the digital divide and falling behind on broadband Consumer federation of America.

Focus on Research Methods and Maintaining Your Focus in Focus Groups: Avoiding Common Mistakes.

Guidelines for the transition from analogue to digital broadcasting ITU 2012 Regional project –Asia-Pacific

Guidelines for the Transition to Digital Broadcasting ITU 2006

ITU Regional Radiocommunication Conference – 2004

ITU Regional Radiocommunication Conference – 2006

ITU World Radiocommunication Conference – 2007

Laying the Foundation for the Expanded Mobile Service (2003)

MISA Zimbabwe: Submission and Position Paper on Broadcasting in Zimbabwe (2001)

National Survey on Broadcasting in Zimbabwe July-September 2003 (Broadcasting Authority of Zimbabwe)

Official Secrets Act 1973 (OSA)-Government of Zimbabwe

Proposed Amendments to the Broadcasting Services Act 2001 MISA – Zimbabwe

The Fifth SADC Digital Broadcasting Migration Forum report (2003)

The Media Ethics Committee Report 2000 – Government of Zimbabwe

The Herald, Zim Limps to digitalisation 17 June 2015

The Herald, 'Zim complies with ITU switch-off deadline'18 June 2015

The Herald, 'Zim to meet digitalisation deadline' 19 March 2015

The Herald, Govt to meet digitalisation deadline 11 May 2015

The Herald, Zimbabwe: The nation that can't audit 12 April 2014

The Herald, Sadc ministers meet over digitisation, TV, 1 July 2015

The Sunday Mail, Digitisation The full Story, 27 September 2015

The Financial Gazette Lack of skills delay Zim Digitalisation 19 February 2015-08-11

The Flame 30 April – 6 May 2015

The Patriot the African Focus, 12 -18 August 2015

Banks won't help ZBC partners The Horizon December 1997

Transmedia Issue No. 33: Zimbabwe seeks $64 million for equipment

USA Congressional Report on the general uses of spectrum frequencies 2011.

Primary Sources: Conference, Papers, and Notes

Transition to Digital TV: CQ Press, Sage

Digital Future: Social media management workshop, 2014

Machengete, K.: Notes on business research methods. Faculty of Commerce, Bindura University of Science Education, 2014.

SADC: Draft plan of action for Digital Broadcasting Migration in SADC.

The debate papers: Forum for open discussion in Southern Africa.

Varan, D. and Morrison, T.: Industry survey on digital television in Australia prepared for the Australian Broadcsating Authority, 2002.

Channels on Air, (2002). House magazine for the Broadcasting Corporation

ICT Solutions (2014). Key to unlock ZIM-ASSET.

Speeches

Vital Speeches International (2013)

Websites

Chakravartty P. (2008). *Modernisation Redux? Cultural Studies and Development Communication: Television New Media*, published October 2008.

DOI:10.1177/1527476408325730

http://www.sagepublications.com.

http://sociology. About. com./od/Research/a/Purposes-Of-Research.html

Retrieved on 19/12/2013

Thomas J. (2003). *Dodd Papers website.* http://www.lib.uconn.edu/DoddCenter/ASC/dodphot1.htm. Accessed

2/05/03.

Available at: http://scholarship.law.berkeley.edu/bjalp/vol11/iss1/10

Hamel J. Y. (2009). *Information and Communication Technologies and Migration* UNDP, Munich. Online at http://mpra.ub.uni.muenchen.de/19175/ MPRA Paper No. 19175. Posted 13. December 2009 07:02 UTC

http://www.gseis.ucla.edu/faculty/kellner/kellner.html

APPENDICES

Appendix 1: Bumptiousness Model: A Glossary of Key Issues on DB

As part of the study's conclusions appended to the chapter, is a glossary of conclusions containing questions about why digital migration matter for Africa? As observed during the study, Africa's digital transition in broadcasting has the potential to improve both the quantity and quality of broadcasting and the content for both TV and radio. Therefore, below is a short primer on the basics of the technical issues and a policy issues linked to DBM.

What is the digital transition in broadcasting?

The digital transition in broadcasting can be considered as a global process, which involving the switch from analogue to digital broadcasting signals.

Who decided the digital transition should happen?

Because the process of the digital transition in broadcasting involves re-allocating frequencies, it is agreed through an international framework facilitated through the ITU. African countries supposed to have migrated to digital broadcasting by June 17, 2015.

Is the digital migration standard the same across the world?

No. Different regions use different standards in terms of technology much as they do for analogue television transmission.

What will it cost?

The digital transition in broadcasting is a costly process (both for Government and citizens). There are costs for digital production equipment, for digital transition equipment and for set-top boxes and digitally-enabled TVs.

What are the differences between analogue and digital broadcasting?

There is a worldwide transition to digital broadcasting which is a more efficient way of transmitting sound and pictures and which offers a number of potential benefits.

Who is affected by the digital transition?

The transition from analogue to digital impacts television viewers, media companies and TV channels in different ways

What are the direct benefits and difficulties of the digital transition?

The transition yields new spectrum for broadband wireless as the digital broadcast signal can be compressed. This result in spectrum being freed up and this can be sold to communications operators who want to provide better wireless broadband services. Because of the compression of data into small bits, broadcasters will be able to offer several channels of programming in spectrum that previously was only able to transmit a single analogue channel. Therefore, viewers are likely to be offered a wider range of channels subject only to the broadcasters finding a business model to make the channels financially viable.

Further, television viewers will get improved picture and sound quality. However, those at the edge of signal coverage areas who currently get a poor quality signal under the analogue regime will get no picture at all under the digital signal. Digitisation in the broadcasting sector enables broadcasters to offer High Definition (HD) programmes to viewers. Digital broadcasting offers the possibility of more channels which can include those in vernacular language. Digital transition provides the opportunity to extend the signal coverage area within a country so that more people can share the same television programmes.

The challenges to the programme are the costs involved and the need for a new policy environment which challenges have often proved daunting for most African Governments. Regarding regulation, the transition involves numerous negatives chief among which being the prohibitive cost of STBs. These receive digital TV signals.

What Are The Potential Indirect Benefits And Difficulties Of The Digital Transition?

The digital transition raises questions around on who will get access to the new channels created. It offers a moment to reflect on what African public interest broadcasting might be and the business models that could be used to underpin its public interest purposes. The digital transition offers an opportunity to review the effectiveness of local production quotas and of Government schemes that support local production.

Broadcasting and telecommunications are in many African countries treated as separate, vertical markets. However, digital convergence means that telecoms operators have become involved in broadcasting and broadcasting companies are looking at how they might deliver Internet and voice services.

Appendix 2:   Informed Consent

<table>
<tr><td colspan="4">Please note that this document is produced in duplicate – one copy to be kept by the respondent, and one copy to be retained by the researcher.</td></tr>
<tr><td>Researcher</td><td>Mr. Clever Chirume</td><td>0774531186</td><td>cleverchirume@yahoo.co.uk</td></tr>
<tr><td>Department</td><td>Centre for Culture and Media in Society (CCMS)</td><td>+27-31-2602505</td><td></td></tr>
<tr><td>Institution</td><td>University of KwaZulu-Natal (UKZN)</td><td>Howard College Campus, Masizi Kunene Ave, Glenwood, Durban, South Africa.</td><td></td></tr>
<tr><td>Supervisor</td><td>Prof. Ruth Teer-Tomaselli</td><td>+27-31-2601813</td><td>teertoma@ukzn.ac.za</td></tr>
<tr><td>Chair, UKZN Human Sciences Research Committee</td><td>Dr Shenuka Singh</td><td>+27-31-2608591</td><td>singshen@ukzn.ac.za</td></tr>
<tr><td colspan="4">Please do not hesitate to contact any of the above persons, should you want further information on this research, or should you want to discuss any aspect of the interview process.</td></tr>
</table>

Research Consent Statement

This research is a PhD study being conducted to develop insights on the migration from analogue to digital broadcasting. The research investigates the dilemma associated with the digital migration programme in Zimbabwe. Data will be gathered through interview and document analysis in order to ascertain the current state of broadcasting vis-à-vis digital migration in the country regarding the global environment; and the understanding of the digital migration programme from a policy and technological dimension, as well as the opportunities for content development, entertainment and the diversity of voice contributing to greater

democratic potential. The population for the interviews include lecturers in media and communication studies, government officials, media analysts and critics in Zimbabwe.

Data for the study will be kept securely for five years for purposes of verification.   Should you request for, any electronic copy of the final thesis this will be sent to you on completion.

Signed consent

• I understand that the purpose of this interview is solely for academic purpose. The findings will be published as a thesis, and may be published in academic journals.	Yes ☐ No ☐
• I understand I will remain anonymous. (Please choose whether or not you would like to remain anonymous.)	Yes ☐ No ☐
• I understand my name will be quoted. (Please choose whether or not you would prefer to have your remarks attributed to yourself in the final research documents.)	Yes ☐ No ☐
• I understand that I will not be paid for participating but a souvenir will be given.	Yes ☐ No ☐
• I understand that I reserve the right to discontinue and withdraw my participation any time.	Yes ☐ No ☐
• I consent to be frank to give the information.	Yes ☐ No ☐
• I understand I will not be coerced into commenting on issues against my will, and that I may decline to answer specific questions.	Yes ☐ No ☐
• I understand I reserve the right to schedule the *time* and *location* of the interview.	Yes ☐ No ☐
• I consent to have this interview recorded.	Yes ☐ No ☐

* By signing this form, I consent that I have duly read and understood its content.

_____   _____   _____
Name of Participant   Signature   Date

_____   _____   _____
Name of Researcher   Signature   Date

Appendix 3:   Gatekeeper Permission Letter

TOPIC: Rethinking Policy in the Global Environment: Zimbabwe's Digital Migration from Analogue to Digital Broadcasting

Correspondence with interviewees: Letter of invitation to participate in the study

Dear Sir/Madam

My name is Clever Chirume I am collecting data to complete a study on broadcasting digital migration in Zimbabwe. The study is conducted under the supervision of University of KwaZulu-Natal Centre for Culture and Media in society (CCMS). I am writing to request your participation. The importance of this study is to identify and develop insights on the migration from analogue to digital broadcasting and explore the dilemmas associated with the programme in Zimbabwe.

The study seeks to clarify the concept and practice of digital migration with regard to the entire value chain. Focus will mainly be devoted to the exploration of the challenges in Zimbabwe's migration programme and its perspectives. This study aims to contribute significantly to the corpus of knowledge on some of the critical issues on digital change in the broadcasting sector in African countries in general, and Zimbabwe in particular. In so doing, the study may further clarify on the opportunities, constraints, and possible alternatives of the programme to society. It will also critically explore the importance of this programme and the need to adopt appropriate strategies and initiatives to maximise the country's benefits and limit risks.

Participation in this study is voluntary. The data will be kept securely for five years for purposes of verification.

Should you request for an electronic copy of the final thesis this will be sent to you on completion.

Your willingness to participate in this study will greatly be appreciated.

Details of the researcher and institution of research:

Researcher	Mr. Clever Chirume	+263-77-645586 (Zimbabwe) +27-73-5444481 (South Africa)	cleverchirume@yahoo.co.uk
Department	Centre for Culture and Media in Society (CCMS)	+27-31-2602505	
Institution	University of KwaZulu-Natal (UKZN)	Howard College Campus, Masizi Kunene Ave, Glenwood, Durban, South Africa.	
Supervisor	Prof Ruth Teer-Tomaselli	+27-31-2601813	teertoma@ukzn.ac.za
Chair, UKZN Human Sciences Research Committee	Dr Shenuka Singh	+27-31-2608591	singshen@ukzn.ac.za
Committee Clerk, UKZN Human Sciences Research Committee	Ms P. Ximba	+27-31-2603587	ximbap@ukzn.ac.za
Please do not hesitate to contact any of the above persons, should you want further information on this research, or should you want to discuss any aspect of the interview process.			

Signed consent

• I understand that the purpose of this interview is for solely academic purpose. The findings will be published as a thesis, and may be published in academic journals.	Yes ☐	No ☐
• I understand I may choose to remain anonymous. (Please choose whether or not you would like to remain anonymous.)	Yes ☐	No ☐
• I understand my name will be quoted. (Please choose whether or not you would prefer to have your remarks attributed to yourself in the final research documents.)	Yes ☐	No ☐
• I understand that I will not be paid for participating but a souvenir will be given.	Yes ☐	No ☐
• I understand that I reserve the right to discontinue and withdraw my participation any time.	Yes ☐	No ☐
• I consent to be frank to give the information.	Yes ☐	No ☐

• I understand I will not be coerced into commenting on issues against my will, and that I may decline to answer specific questions.	Yes	☐	No	☐
• I understand I reserve the right to schedule the *time* and *location* of the interview.	Yes	☐	No	☐
• I hereby consent / do not consent to have this interview recorded	Yes	☐	No	☐
* By signing this form, I consent that I have duly read and understood its content.				

Appendix 4:   Colloquium Panel

UNIVERSITY OF KWAZULU-NATAL

INYUVESI YAKWAZULU-NATALI

HIGHER DEGREES DISSERTATION/THESIS PROPOSAL REPORT FOR RESEARCH MASTERS AND PhD STUDENTS

(This report is to be completed by the appointed scribe or Postgraduate Administrator after the proposal panel has met and thereafter submitted to the Supervisor)

DATE OF ORAL PRESENTATION: 29 October 2013

NAMES OF CHAIRPERSON AND PANEL MEMBERS PRESENT:

Prof D McCracken (Chair)

Prof K Tomaselli (CCMS)

Prof R Peacock (CRIM)

Dr N Mboti (CCMS)

STUDENT NAME: Clever Chirume

STUDENT NUMBER: 213565024

DEGREE: PhD

DISCIPLINE: Culture Communication and Media Studies

SHORT DESCRIPTIVE TITLE

Zimbabwe's Broadcasting Policy in the digital Age: A study of National interest and Security Imperatives.

SUPERVISOR/S: Prof R Teer-Tomaselli

ETHICAL CLEARANCE CODE: ORANGE

GREEN: *No human subjects*

ORANGE: *Human subjects but research not of a sensitive nature*

RED: *Human subjects and research of a sensitive nature:*

Appendix 4: Renewal of Visa Permit

UNIVERSITY OF ™
KWAZULU-NATAL

INYUVESI
YAKWAZULU-NATALI

The Centre for Communication & Media Studies
School of Applied Human Sciences
College of Humanities
Ground Floor, Room G006a, Memorial Tower Building
Howard College, Mazisi Kunene Ave
(formally King George V Avenue), Durban, 4041, South Africa
Tel: +27 (0)31 260 1813
Email: Strong@ukzn.ac.za
Website: www.ukzn.ac.za/ccms

17 December 2014

TO WHOM IT MAY CONCERN

This note confirms that **Mr Clever Chirume** (ID/Passport Number: BN660992) is currently registered for a Doctor of Philosophy (Human Science) in the Centre for Communication, Media and Society, School of Applied Human Sciences, Howard College Campus at the University of KwaZulu-Natal, Durban. He will need to be re-issued with a study permit for the Academic year of 2015. He needs to complete his studies during this academic year.

Yours faithfully

Professor Ruth Teer-Tomaselli
Academic Leader
The Centre for Communication, Media and Society
Howard College Campus
University of KwaZulu-Natal
Durban
South Africa

Appendix 5: Permission to Interview

The Centre for Communication & Media Studies
School of Applied Human Sciences, College of Humanities
Ground Floor, Room G006a, Memorial Tower Building
Howard College, Mazisi Kunene Ave
(Formerly King George V Avenue), Durban, 4041, South Africa
Tel: +27 (0)31 260 1813
Website: www.ukzn.ac.za/ccms

RESEARCH: TO WHOM IT MAY CONCERN

Dear Sir/Madam

I write to confirm that the bearer of this letter, **Mr. CLEVER CHIRUME** is a full time student of the University of Kwa-Zulu Natal, Durban, South Africa. Clover's registration number is **213565024.** Clever, wishes to conduct interviews with you and/or some members of your staff. This has become necessary to enable the researcher to collect data for research as a PhD candidate of the Centre for Communication and Media Studies (CCMS) of the above University. The title of the thesis is: *Spectrum Management in the Global Age: Negotiating Zimbabwe's Transition from Analogue to Digital Broadcasting*. In data collection, issues of ethical considerations as stipulated in the consent agreement would be strictly adhered to. This research has been endorsed by the University so do not hesitate to contact us should you have any queries.

I would be grateful if your organisation could assist him to conduct his research.

Attached are copies of 'research consent form' and a 'clearance certificate' issued by the university to mandate the candidate to carry out this study.

Yours sincerely

………………………………………….
PROF. RUTH TEER-TOMASELLI
(Head, CCMS & Supervisor)
teertoma@ukzn.ac.za

Appendix 6: Timelines for the Study

STEPS	DATES
1. Submit Proposal for Approval	November 2013
2. University Ethical Clearance	December 2013
3. Data Collection	February 2014 to submission
4. Data Analysis	August 2014 to date
5. Writing of Thesis	September 2014 – Date
6. Submission of first draft of the Thesis	31 October 2015
7. Submission of Thesis for Examination and Preparation for Viva	November 2015

Appendix 7: The budget for the Study

ITEM / ACTIVITY	QTY	COST (USD)
Reams of A4 Paper	10	30
Note Books	4	10
Laptop	1	400
Printer	1	400
Digital Camera	1	400
Voice Recorder	1	400
Memory Sticks	2	40
Transport		1 000
Lunch		600
Accommodation		5 400
Binding of six copies of thesis	6	300
Contingency		1 000
TOTAL		**9 380**

Appendix 8: The Interview Schedule

Below are the **four** research questions informing the study: The four questions are accompanied by a series of sub-questions that clarify the study:

- **The Central Research Question is:**

A.   What is the current state of broadcasting vis-à-vis digital migration in Zimbabwe in the context of the global environment; and what is the understanding of digital migration from a policy and technological dimension, as well as the opportunities for content development, entertainment and the diversity of voice contributing to greater democratic potential?

Sub Research Questions are:

B.   Why should Zimbabwe migrate?

C.   How should Zimbabwe migrate?

D.   What challenges and opportunities face Zimbabwe in its future digital migration roll out?

To clarify the above research questions are a series of sub-questions categorised in three sections; the general, technical and theoretical questions:

- **General Questions about Zimbabwe's Digital Broadcasting Migration**
1. What is digital broadcasting migration?

2. How is digital migration to benefit Zimbabwe?

3. What is the role of your Ministry/Organisation in the migration process?

4. Why should Zimbabwe migrate?

5. What are the effects of the digital broadcasting transition for ordinary Zimbabweans?

6. How can digital broadcasting migration succeed?

7. What are the policy implications for digital migration?

8. What are the prospects for Zimbabwean businesses concerning digital broadcasting migration?

9. What is the country's readiness for the migration?

10. What are the plans, vision and strategy for the country to move from analogue to digital platforms?

11. What are the major challenges and opportunities in Zimbabwe's digital migration?

12. What has been done in Zimbabwe to digitise to date?

13. Where will the resources for the digital migration found?

14. What is the date for Zimbabwe's digital migration?

15. Will the country meet the deadline for the digital migration?

16. What are the possibilities of broadcasting being offered on mobile phones?

- **The Technical Questions:**

17. What is spectrum management?

18. Why is spectrum management important?

19. What is the level of Zimbabwe's capacity in spectrum management, control and monitoring?

20. What is the country's level of expertise in monitoring and control of the usage of frequencies?

21. What is spectrum policy?

22. What is the radio frequency spectrum plan for Zimbabwe? Who deliberates on it and why?

- **Questions Pertaining the Theoretical Framework of the Study**

Events in life need to be viewed through certain filters or lenses in terms of theory. Below are questions relating to the theory of study?

23. What lenses in terms of theory should be used to best account for the emerging media in Africa in the digital age?

24. Define theory in research?

25. What lenses in terms of theory, can be used to analyse digital broadcasting migration

26. In your view what is the place of African philosophy in analysing the current digital migration?

27. How do researchers adopt theories for their studies?

28. How is convergence viewed in contemporary media debates?

29. Where do we place the role of the nation state in light of the global media environment?

- **Questions about the quality of study based on the interview schedule and possibility for improvement**

30. Are issues of spectrum management and digital migration worthy of study at this moment in the digital age?

31. How can the study be improved, based on your assessment of the questions in this schedule?

32. Could there be other issues we should remove or include to improve the study?

33. What do you think should be done in order for the study to be useful to Zimbabwe's needs?