HOW NEW TECHNOLOGIES ARE AFFECTING NEWS GATHERING, PRODUCTION AND DELIVERY, A CASE OF GHANA TELEVISION

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DECLARATION

I declare that except for references to other people’s work that have been duly acknowledged, this dissertation is the result of my research conducted at the Department of Communication Studies, University of Ghana, Legon. The dissertation was supervised by Dr. Gilbert Tietaah.

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Date…………………………… Date……………………………
ABSTRACT

There are many studies in Europe, Asia and America on how technology has impacted the media. These studies look at a wide range of new approaches adopted by newspapers, radio and television production and transmission across the world. This study examined how technology has affected newsgathering, production and delivery at Ghana’s state television, GTV. Everett Rogers’ diffusion of innovation theory was used to assess the rate of diffusion of new technologies in the GTV newsroom. The case study interviewed 13 staff of various departments who contribute to newsgathering processing and delivery.

Results from the interviews show marked changes in all three processes of news gathering, production and delivery as well as the degree of success of the diffusion of new technologies in the GTV newsroom.

The study found that news gathering has migrated from using tapes that record 30 to 60 minutes footages, to the use of memory cards that record many hours of an event or process, (depending on memory size) to tell a story. News processing has also shifted from cutting and joining tapes to downloading footages from cards to computers to determine which shots best tell a story. Delivery is done using new technologies that allow access on multiple platforms from analogue television sets, through digital sets to online streaming of television content.

Furthermore, GTV’s introduction of new technologies has improved the processes of news gathering, production and delivery. The study recommends a comparative study of GTV and a private free-to-air television station to help determine the rate of technology adoption by private television stations.
DEDICATION

I dedicate this research to all whose contribution, counsel and support has brought me this far, particularly, my parents Christiana Gomez-Mensah and Severine Gomez-Mensah both of blessed memory and Mr. Abeiku Ephraim-Williams, whose singular intervention saw me back in basic school. I also dedicate this work to my supervisor Dr. Gilbert Tietaah, Dr. Margaret Ivy Amoakohene, Professor Kwasi Ansu-Kyeremeh, Professor Audrey Gadzekpo, Sung Park, Dr. Etse Sikanku, Professor Kwame Karikari and all who have contributed to my knowledge acquisition.
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CHAPTER ONE

INTRODUCTION

1.0 Background to the study

The last generation has been described as the digital age in which technology evolved, bringing in its wake new devices, formats and applications for news production and delivery (Castells, 2009). The evolution is also accompanied by training in human resources to enable them manage the processes. These changes in technology and tasks are observable in the news industry. According to Pavlik (2001) a digital newsroom has every component: text, data, graphics, audio and video, computerised. This provides that news professionals use these components in a nonlinear way; cutting, pasting or manipulating video and audio as easily as a word processor does (Pavlik, 2001). The digital newsroom has introduced major changes in the television news production processes.

The Ghana Broadcasting Corporation (GBC) began television transmission in 1965 using the monochrome technology. Television was transmitted in Accra using three main band I 5kw transmitters at Ajangote in the Greater Accra region, Jamasi in the Ashanti region and Kissi in the Central region and a 500 watt Band III transmitter in Northern regional capital, Tamale (Asamoah, 1985). The station further installed small-power Band I and Band III television transmitters to extend coverage to about half of the country’s geographical area. The microwave links that carried television programme from Accra to the main transmitters were controlled by the post and telecommunications Corporation (Asamoah, 1985). The process of news gathering at the time required that reporters attend assignments with cameramen using cameras for still photography. The Director of Technical Production, Oscar Nchor, in an interview (16th October 2014) mentioned that before the introduction of video
cameras in 1984, still photographs were used for television broadcast. Photos taken were processed through chemicals and projected for transmission. The U-matic cameras introduced in 1984 were part of preparation towards the introduction of colour transmission. According to the Director of Technical Production, GTV replaced the U-matic in 1998 with BETA Cam. The technology, though now outdated, was so durable that the station was able to use it until 2005. BETA Cam was an analogue technology, therefore editing was done by dubbing relevant portions of the footage needed for a story on one BETA discs to be played during the bulletin. News and relevant footages are archived on the BETA discs.

The state broadcaster’s first attempt at digitalisation was the introduction of the XD Cam in 2006. XD Cam uses memory cards that show thumbnails. Therefore, reporters could easily identify the videos they needed for their stories. The video was edited after the data was captured or transferred onto a computer. Reporters used Microsoft Word to type their stories and stored their finished stories on the cards (personal interview with Director of Technical Production).

As at 2010, GTV’s transmitter network was made up of 31 main transmitter systems comprising 30 TV transmitter stations and an FM transmitter network. The TV transmitter network also had additional low power transposer equipment, which served as gap-fillers at Axim, Dunkwa, Obuasi, Somanya, AkimOda, Asamankese, Bawku, Akosombo, Ho and Koforidua to enhance television coverage. The television signal distribution system is composed of satellite uplink in Accra and 31 satellite downlinks or TV Receive Only (TVRO) systems (GBC 75th Anniversary brochure, 2010).
The head of GBC 24, the dedicated all-news channel on GTV’s digital platform Johnny Aryeetey in a personal interview (10th October 2014) stated that GTV introduced the Z5 cameras and Que series software 2010. The software combines properties for writing, editing text, recording and editing voice, playing and archiving video footages and the autocue for reading news on live TV. The Z5 cameras record images onto chips. The video was downloaded onto a computer and edited using Sony Vegas version nine and played on air using the Que series.

It is instructive to mention that commercialisation of electronic media was discouraged from the onset because both the colonialist and the first post-independence government of Kwame Nkrumah used the media solely as a tool for education and information. Apart from its propaganda role, the electronic media was commercialised by the free market oriented National Liberation Council (NLC), that toppled Nkrumah regime that made commerce a feature of broadcasting Ansu-Kyeremeh and Karikari, 1998).

The state remained the only operator of broadcasting services (radio and television), until private broadcasting began in 1995. According to Ansu-Kyeremeh and Karikari, repressive regimes prevented private ownership of broadcast media but invested in the infrastructure of the state facilities to serve as the primary tool for propaganda (Ansu-Kyeremeh and Karikari, 1998).

1.1 Competition and technological change

Ghana Television has always been under state support; government is the major financier of the state broadcaster. Since television was introduced in July 1965, the state had enjoyed monopoly until parliament passed the NCA Act of 1996, (Act 524) which was later repealed.
by Act 769 in the 2008. The NCA Act provided for the establishment of Frequency Registration Control Board (FRCB), a body to receive and vet applications for the allocation of frequencies to citizens and organisations equitably. The work of the FRCB led to Metro TV breaking the state broadcaster’s monopoly in July 1997. However, the station was partly owned by GBC. Again, to access Metro TV’s signals then, television owners needed antennas. Later that year, TV3 launched the first full free-to-air private television station in October 1997. Its coverage was however limited to the southern part of the country (Ansu-Kyeremeh, and Karikari, 1998). Members of the public could contribute to TV discussions through letters, request coupons and in the very recent past, technology enabled (digital) platforms which have made it possible to send text messages to short codes or make phone-ins as forms of feedback or to contribute to discussions. The broadcast media also invited citizens with expertise on various subjects to share their thought on various issues.

1.2 Problem Statement

In order to successfully exploit the advantages of technology and effectively respond to the dynamics of technological change, media institutions must constantly update their equipment and also train their newsroom personnel to enable them use the technology. This becomes particularly important for TV stations in Ghana, as the 2015 deadline for digital switchover draws closer. Ghana signed the Geneva 2006 (GE06) Agreement, for establishing the digital Terrestrial Broadcasting Plan in the bands of 174-230 MHz and 470 a 862 MHz at Regional Radiocommunications Conference (RRC-06) in 2006 (www.nca.org.gh). The agreement sets 17th June 2015 as the deadline for the cessation of international protection for analogue broadcasting transmissions in the said bands. This study sought find out how new technologies are affecting news gathering, production and delivery, using the GTV newsroom as a case study.
GTV was chosen for this study because as a public service broadcaster, it has a universal mandate. According to Obijiofor, public service broadcasters are founded on the principle of universal access to information. (Obijiofor, 2011). In Ghana, this mandate requires that GTV provides content that takes into account the diverse shades of opinions, reaching every corner of the country. The Director of Technical Production indicated that this mandate has not been fully served because of limited resources. He stated that GTV is unable to raise enough resources to equip the state broadcaster to serve that universal mandate. Since its inception, GTV depends on central government and the benevolence of public and private donors to retool to keep pace with the ever-growing technological changes. GTV's advertising revenue is not enough for major financing for equipment.

Financing for public broadcasters in the developed world is different. In the United States, the Public Broadcasting Act of 1967 provides that all Americans have free access to public broadcasting signals. To this end, there is significant federal investment in rural communities throughout America (www.cpb.org). In 2013, sixty public television stations in the U.S. received support from the Corporation for Public Broadcasting (CPB). The CPB is a private nonprofit corporation which acts as steward of the federal investment in public broadcasting to address the challenges facing rural broadcasting stations in providing services to their communities (www.cpb.org). Similarly, the United Kingdom's (UK) five public service television broadcasters receive license fees and have guaranteed access to spectrum and prominence on TV electronic programme guides. Public service broadcasters in the UK are also expected to provide services that give a benefit to the public in the form of news, local programming and cultural content (www.gov.uk). However, there is continuous debate in the UK over whether the BBC must still depend on license fees in the face of multiple channels
that provide similar programmes as the BBC offers (Bourne, 2014). In this debate, the most compelling defence of the BBC, like other public broadcasters, has been the idea of universal access in terms of content and coverage.

In the emerging democratic countries, public service broadcasting is seen as essential for the development of strong and participatory democracy (Obijiofor, 2011).

However, in Ghana the law that establishes the Ghana Broadcasting Corporation, operators of GTV, is the NLC Decree (NLCD 226) of 1978). The Corporation's mandate includes producing content that reflects the national identity and presents this to a wide audience as possible, taking into accounts its technological strength.

According to Oscar Nchor, Director of Technical Production (personal interview 16th October 2014), GTV's mandate to deliver television content to all parts of the country is hampered by limited resources. Lack of resources has made it impossible for the state broadcaster to keep up-to-date with technology that makes it possible to gather, produce and deliver content to every corner of the country. He stated that the meagre TV license fees further deprives the state broadcaster funds retooling. In its current state, GBC spends more resources collecting the TV license than what is received from TV users, dealers and repairers.

The study therefore sought to find out how legislation and funding structure impact how new technologies are affecting news gathering, production and delivery at GTV.
1.3 Objective of the study

The objective of the study is to establish how new technologies are affecting news gathering, production and delivery at Ghana Television. Below are the specific objectives:

1. Investigate the extent to which the emergence of new technology has affected the process of news gathering, processing and delivery at GTV.

2. Explore factors that have influenced the introduction and adoption of technology in the news production process at GTV.

3. Examine the changes in news professionals’ roles since the introduction of new technology in the GTV newsroom.

1.4 Research questions

To achieve the objectives of the study, this research attempted answering the following research questions.

RQ1. How has the emergence of new technologies affected the process of news gathering, production, processing and delivery at GTV?

RQ2. What factors have affected the introduction and adoption of new technologies in the news production processes of GTV?

RQ3. What changes in roles have occurred at GTV newsroom with the introduction and adoption of new technologies in the news production processes?

1.5 Significance of the study

This study provides empirical evidence on how technology is affecting media generally. It shows how technology has impacted news gathering, production and delivery across various platforms. The study investigated the extent of adoption of new technologies in the news
production processes at GTV newsroom. It also highlighted the communication and other challenges arising from the introduction technologies among news professionals. Finally, the study brings to the fore how GTV’s current revenue base continues to hinder the state broadcaster’s ability to keep pace with the ever-growing technological changes in the industry.

1.6 Scope of the study

This study of TV journalism practices aimed at establishing how new technologies are affecting news gathering, production and presentation at the GTV newsroom. The study sought to find out how new technologies introduced by the state broadcaster over the last decade have affected news production processes. It also attempts to establish the rate of adoption of the technologies by the newsroom professionals. This case study interviewed 13 respondents made up of reporters, editors and technicians who have worked in the newsroom for a minimum of ten years. The number of respondents chosen was as a result of the time and resources available to the researcher to complete the work.

1.7 Chapter Summary

This chapter provided the background to the study, focusing on the state broadcaster when it operated as a monopoly. It also highlights the changes in dynamics with legislation that allowed pluralism and introduced private participation in television broadcasting and subsequent changes in technologies. It highlights the objectives of the study, research questions, significance of the study and the scope of the research. This chapter introduces the research and set the stage for review of related literature and the theoretical framework that will guide the study.
CHAPTER TWO
THEORETICAL FRAMEWORK AND RELATED STUDIES

2.0 Introduction

This chapter reviews relevant literature for the study. The first part presents the theoretical framework that guided the study and the second part reviews related studies based on the research questions of the study.

2.1 Diffusion of Innovation Theory

The diffusion theory measures how an innovation is adopted among a population. The model used to measure the uptake of new technology for news gathering, processing and delivery at Ghana Television is Everette Rogers’ diffusions of innovation theory. The theory provides an approach for defining the process of diffusion as well as the elements for ensuring the process runs smoothly. Once an innovation is introduced, the first to adopt are the entrepreneurial individuals and groups. But these individuals or groups are not weighty enough to drive rapid adoption. Opinion leaders or agents of change within the social system may subsequently provide legitimacy to the innovation to allow for adoption by others in the system.

The study adopted the figure below from Weber and Evans (2002) in their study on ‘constructing the meaning of digital television in Britain, the United States and Australia’. The figure shows the rate of adoption of technology by various actors in an organisation.

The above table shows the rate of adoption of technology within a social system. It indicates the various stages in the technology’s introductions and the rate of adoption.
Figure 1: The Stages in the Innovation process of an organisation

<table>
<thead>
<tr>
<th>ADOPTER CATEGORY</th>
<th>% OF USERS</th>
<th>SALIENT VALUE</th>
<th>PERSONAL CHARACTERISTICS</th>
<th>COMMUNICATION BEHAVIOUR</th>
<th>SOCIAL RELATIONSHIP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovators</td>
<td>2.5</td>
<td>Venturesome’, willing to accept risks</td>
<td>Youngest age, highest social status, largest and most specialised operations, wealthy</td>
<td>Closest contact with scientific information with other innovators, greatest users of impersonal sources</td>
<td>Some opinion leadership</td>
</tr>
<tr>
<td>Early adopters</td>
<td>13.5</td>
<td>Respect, regarded as a role model</td>
<td>High social status, large and specialised operations</td>
<td>Greatest contact with local change agents</td>
<td>Greatest opinion leadership of any category in most social systems</td>
</tr>
<tr>
<td>Early majority</td>
<td>34</td>
<td>‘Deliberate’, willing to consider innovation only after peers have adopted</td>
<td>Above average social status, average-sized operations</td>
<td>Consideration contact with change agents and early adopters</td>
<td>Some opinion leadership</td>
</tr>
<tr>
<td>Late majority</td>
<td>34</td>
<td>‘Sceptical, overwhelming pressure from peers needed before adoption occurs</td>
<td>Below average social status, small operations status, small operation, little specialisation, small income</td>
<td>Secure ideas from peers who are late majority, less use of mass media</td>
<td>Little opinion leadership</td>
</tr>
<tr>
<td>Laggards</td>
<td>16</td>
<td>‘Tradition’, oriented to the past</td>
<td>Little specialisation, lowest social status, small operations, lowest income, oldest</td>
<td>Neighbours, friends, and relatives with similar values are main information source</td>
<td>Very little opinion</td>
</tr>
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The table also demonstrates the salient values or traits, personal characteristics, communication behaviour and social relationship within the social system.

As defined earlier, innovations are new ideas, objects and practices that are subjectively interpreted by an individual with the possibility of adoptions. Even in the case of long time lags after discovery or first use, if the idea is new to the individual involved, that makes it an innovation to that individual. Technologies usually have software and hardware components. The software components are the symbolic and hardware components represent the material form of the idea (Rogers, 2003). How new technologies are affecting news gathering, production and delivery relates more to the software form of innovation.

Relevant to this study are the perceived characteristics of the innovation, such as relative advantage over the existing technology: how consistent or compatible its values are to the experiences and needs of those expected to adopt: the perceived complexity or ease of use; how potential adopters are able to try the innovations on limited basis; and the extent to which others in the social system (organisation) can see the results of the innovation. Rogers (2003) complexity is considered a potential negative influence on the likely rate of adoption. According to Rogers (2003) any successful innovation must possess the five properties below and those are the properties guiding this study. Relative advantage refers to the superior qualities that the new innovation possesses over the existing idea and it is measured taking into account its economic benefit. New technologies may not totally replace the traditional methods for news gathering, processing and delivery. Relative advantage is more evident in promotional activities (Rogers, 2003).

Compatibility refers to how an innovation follows in the existing values and known
experiences of the potential users or adopters. If the innovations are compatible with what they know, they are more likely to adopt it. Potential adopters will feel more secured if the innovation makes meaning to them. Therefore, for high rate of adoption an innovation must be compatible with existing experiences of potential users (Rogers, 2003).

*Complexity* deals with how easy or difficult it is to understand or use an innovation. Those that are easy to understand or use are often categorised as simple. Conversely, those that are difficult to use are considered complex. It is important to understand that how simple or complex an innovation is affects the extent to which it is adopted (Rogers, 2003).

*Trialability* is how an innovation can be tried on a limited basis. If potential users or adopters can try the innovation, they are more comfortable with it and can decide whether or not to use the innovation (Rogers, 2003). It is important to emphasise that though laggards will make their adoption decision based on the success of early adopters, the latter may take their adoption decision without a firm basis.

*Observability* looks at whether the results of a particular innovation can be observed by others. If the result is evident, it may lead to easy diffusion than where one cannot easily see the evidence. More observable innovation results will attract those who ordinarily may be skeptical about innovations, to adopt it (Rogers, 2003).

Rogers (1983:132) suggests, the ‘communicability of an innovation, as perceived by members of a social system, affects it rate of adoption’. Messages from one individual to another usually depend on a communication channel. Interpersonal communication is rated as the most effective way of passing on information, including innovation from one person to
another. If significant others whose opinions the potential adopter value are using the innovation, it is more likely to encourage use by the potential adopter (Rogers, 2003f). However, if the message to be diffused incorporates mass media such as newspaper, radio and television, mass media channels are used for passing on the information to others. Interpersonal channels such as face-to-face interaction between two or more individuals have been described as the most effective in convincing individuals to adopt an innovation. Mass media, on the other hand, has a broader reach, is faster and a very effective means for reaching potential users of an innovation. The use of the internet for interaction that leads to diffusing innovation has become very important in communication (Rogers, 2003).

Time refers to the time frame between exposing the innovation to an individual and adoption. It may affect the diffusion of an innovation in the following ways: When one first learns of an innovation and when the potential user or adopter decides to adopt it. It could also measure the speed at which a potential user adopts an innovation. Again, it also measure when others in the social system adopt the innovation because an individual in that social system has adopted the innovation (Rogers, 2003). This research investigates how GTV newsroom professionals adopted new technologies introduced to serve as a reference point for future studies on how new technologies are affecting news gathering, production and delivery. It is however difficult to measure complete adoption or rejection because the adoption process is a continuous one. The process of adoption and related challenges notwithstanding, it is possible for the study to examine whether there has been any change in language use with the introduction of technologies in news production at various stages of diffusion.

This research sought to establish how new technologies are affecting news gathering, production and delivery at the GTV newsroom. The diffusion theory demonstrates how long
it takes to adopt a technology from the time it is introduced till the individual or group adopts it as part of its processes. The researcher therefore wanted to know what necessitated the introduction and adoption of Que series into the news production processes of Ghana Television. In the study of the GTV newsroom, some stakeholders to consider in integrating the Que series into its operations include management, newsroom professionals, technicians, consultants, as well as the government (ministries of information and finance) the financiers for major technologies introduced at the station. The stakeholders interact at various levels and have relationships at different levels.

The study therefore employed the diffusion of innovation theory to investigate the processes by which the state broadcaster introduced new technologies into its news production processes and how news professionals of GTV adopted these technologies.

2.2 Discussion of Related Studies

Diffusion theory has formed the basis for many studies focusing on how new ideas, techniques and procedures can penetrate newsrooms. Diffusion of innovation is “a natural for this field of study” because it “deals with the spread of change through a social system” (Singer, 1998).

Carr (1990) studied the diffusion of computers in local television newsrooms following the diffusion theory course suggested by Rogers and Shoemaker. The study interrogated why stations that adopted computers were convinced of their importance to their work processes whereas others who failed to adopt computers also felt their processes delivered the best outcomes too? He found that the perception that newsroom computers made work easier formed the basis of the adoption decision. Carr’s research revealed that though nearly
everyone knew of computers in the television industry as at 1990, less than a quarter of local US television stations had integrated them into newsroom operation.

Using Rogers, (2003) diffusion of innovation theory, Singer (2004) examined the aspect of newsroom convergence where journalists struggled to adapt to new environment that changed their work practice and their fundamental ideas of what they do and why they do them. She found that journalists can envision that broader advantages in the new policy of convergence despite “culture clashes and other compatibility issues, journalists see clear advantages in the new policy of convergence” (p. 3).

Meier (2007) examined practice in modern newsrooms in Austria, Germany and Switzerland through the framework of the theory of diffusion of innovation. His study focused on the manner of innovation, timely aspects of the process of diffusion, the channels of communication, and the structure on the social systems involved. He noted that the diffusion of innovation theory was the basis for some studies in the United States of America on how new ideas, techniques and work procedures can penetrate newsrooms. Meier’s (2007) study formed part of the justification for this study to use the diffusion of innovation theory to examine how technologies are affecting news gathering, production and delivery at GTV. It notes that “the diffusion of innovation theory has become the basis for some studies on how new ideas, techniques and work procedures can penetrate newsrooms. Finally, Hermida (2009) also examined how the BBC News incorporated blogging in its journalism. The study investigated the external discussions that influenced the adoption of blogs and tracing how they were transformed into a central part of the BBC’s news production. Using Rogers’ diffusion of innovation theory in a case study, Hermida explored the impact of blogging on BBC editorial values and considered how journalists had maintained their authority in a
digital media environment that integrates new form of journalism within the existing norms and practices.

2.2.1 Studies on how media technologies are affecting news gathering, production and delivery

Johnston and Forde conducted two case studies of ‘The Daily Telegraph and The Age’ looked at the online “Breaking News” to track the emerging culture, where media houses receive copy from news agencies, often PR materials, and present them as news items in the mainstream media for public consumption (Johnston and Forde, 2011). The study found that news agency copy was considered by journalists and editors as passing the tests of fact-checking, verification and containing original material. However, the study found that some copy put out by the Australian Association Press (AAP) required further cross-checking and follow ups that usually occur with media releases that come from public relations officers.

Brautovic (2009) using ethnographic method of semi-structured interviews and document analysis also studied the “usage of newsroom computer system as indicator of the media organisation and production trends; speed, control and centralisation” to establish the influences of digitalisation process on work routines, newsroom organisation and journalist-management relationship of the Croatian public broadcaster Hrvatskaradiotelevizija (HRT). The study found that journalists’ tasks have become more complex, leading to resistance by some journalists to the introduction of newsroom computer systems. It also found that journalists no longer had exclusivity to assignment materials. However, the study also found that the system has reduced learning opportunity for younger journalists in their interaction with editors and senior journalists.

Hultin and Skog (2011) investigated how digitalisation and the digital convergence affect common practices and the work situation for employees as newspaper companies utilise new
digital artefacts, platforms and channels in the publishing process.

In order to help explore convergence and track its development in different media environment to see the results, Domingo et al (2007), studied 58 Spanish media organisation, categorising their levels of convergence into four. These levels are; integrated production, multi-skilled professionals, multi-platform delivery and active audience. The study suggests that many national media groups are coordinating, collaborating or integrating strategies within their branches, but this does not affect their national newsrooms.

Looking at new media and its implication for warfare, van Vuuren, van Vuuren and Venter (2012) investigated whether the South African media is at risk of being used as a tool for information warfare. Using an argumentative analytical approach looks at the negative consequences of social media use, especially in cases where untruths could be peddled in that space. The paper suggests that journalists in the mainstream media must overcome the challenge of being used as weapons in the information warfare. Like the Johnston and Forde study this literature highlights some of the negative implications of technology in newsrooms that this study cannot ignore. It points to some approaches to news gathering in the wake of technology that may transmit information that has not been properly verified as truths to audience members.

In his research on convergence’s fundamental question, Quinn (2005, pp. 36-37) enumerates key factors that can affect newsroom convergence. Most of these factors are also applicable to newsroom digitalisation. First on the list of factors is “management buy-in”, where management convinces media professionals that employers support and expect convergence. Management’s own support also becomes a critical factor in the process of newsroom
Again, Quinn emphasises “a change in mindset” another critical factor to the success of implementing newsroom convergence. The study makes reference to a Norwegian editor who said today’s journalist should say: I’m not working in a newspaper but I’m working in news” (Quinn, 2005, p. 36). The researcher also suggests that newsroom managers should know that technology is only “a tool for doing better journalism”, adding that management needs to invest time and money to provide training for the tools to be utilised more efficiently, (Quinn, 2005, p. 37). These words sum up both convergence and newsroom digitalisation.

In all the above studies, the researchers looked at how technology is impacting various forms of newsroom activities. And in many of the studies, newsroom activities have changed with the introduction of new technologies.

2.2.2 Studies on introduction of technologies and changes in job description

Lawson-Borders (2003) consider convergence to be “the window of opportunity for traditional media to align itself with technologies of the 21st century” (p.91). This will enable audience members whose consumption patterns are changing due to their mobility and adoption of technologies, stay in tune with content of media products. In their study of the Croatian public broadcaster found that its technical digitalisation changed editorial and journalistic routines and relationships affected work processes as both journalists and other newsroom staff engaged in activities different from their routines or in some cases, lost their jobs.

Again, Rintala and Suolanen (2005) also studied the implication of digitalisation of radio and television news production focusing on job description, competencies and the quality of
working life. The study found that changes in job descriptions can be as a result of transferring tasks from one area of specialisation to another, by fusing two or more tasks or by adding new tasks to the traditional job descriptions of a media professional. Their findings suggest that changes in job description are prompted by the digitalisation of production technology, changes in job description, the emergence of new media and new working practices.

Also Johnson (2002) studied digitalisation from the perspective of job description, competencies and job satisfaction in the implementation of internet application and video journalism. The study found that technological implementation of video journalism was accompanied by the redefinition of jobs. A job description of video journalist was formed. These included tasks previously performed by journalists, cameramen and video editors. Changes in job description prompted questions about the quality of outputs as well as the amount of workload, remuneration and the stress of work. The changes in job description as demonstrated in this study also have consequences of the future jobs of cameramen and video editors.

2.2.3 Studies on newspapers, wire services and digitalisation

The process of digitalisation has also seen newspapers and wire services introducing measures to enable them produce and deliver their content to consumers on platforms other than the physical newspaper. Johnston and Forde (2011) studied the stories covered by AAP and the angles they choose. This was to understand ‘their clients’ (media houses who subscribe to their services) news decisions. Looking at their online “Breaking News” of two newspapers ‘The daily Telegraph and The Age’ they found an emerging culture, where media houses received copy from news agencies, often PR materials, and presented them as news
items in the mainstream media for public consumption.

In another study, Hultin and Skog (2011) investigated how digitalisation and digital convergence affect common practices and the work situation for employees as newspaper companies utilise new digital artefacts, platforms and channels in the publishing process. Newspaper production was known to depend heavily on artefacts such as the typewriter, which made production process quite laborious. For instance editing scripts of any error required lots of efforts and journalists also depended on typists to get their stories ready for publication. The introduction of computer systems was seen as a measure to among other things, ease the production process. The study found that editing of errors has become easier, reporters now need to highlight the any error identified and delete or insert the omission, where necessary. The findings of these studies show that technology is positively impacting news gathering, production and delivery across media platforms. It has not only positively impacted news gathering and production, but has also made it possible for news content to be delivered using multiple platforms, including online portals that can be accessed on computers and handheld devices.

Hultin & Skog (2011) also found that to maintain revenue generation by newspaper in the face of digitalisation, newspapers only post abridged versions of top stories online, to whip up reader interest. Just as news agencies are keen on producing their copy for revenue from subscribers, newspapers with online presence have also devised means for using their online presence to sell their newspapers.

One must emphasise that though producing and delivering news content is not the same for television and newspapers, technology has provided for both streams of production.
Television reporters now have cameras for high definition (HD) pictures; newspaper reporters also have software that instantly transcribes interviews. Therefore new technology has improved production and delivery for both traditional print and electronic media by introducing new methods for production and platforms for disseminating content.

2.2.4 Journalists training and introducing of new technologies.

The Brautovic (2009) study suggests that for digitalisation to be successful, the process must take care of editors, journalist and other personnel. There must be a deliberate programme to train news professionals so they can function within the new environment. Brautovic indicates that the way to avert resistance from the news team is to provide adequate training for personnel.

Again, Quinn (2005) also indicates that for new technologies into newsrooms to be successful, media organisations need to train journalists to make their transition into using the new technology effective.

Furthermore, the Hultin and Skog’s (2011) study indicates that employees who had worked with Lambda before the introduction of new technology within the last decade referred to the major changes that came in the wake of the digitalised workplace. They recalled the shift from the use if typewriters to computers and the unending possibilities computers presented, saying they made news gathering and production easier. A reporter is quoted as saying “Well, the everyday digital reality so to speak, is the big change. We used to have typewriters, now we have computers and that is a great revolution, as it is certainly much easier to write a text in the way we are doing it today. I mean, it is possible to edit text much faster”. Reporters indicated that writing had become faster; retrieving of information has
become easier. In the words of reporters, ‘the new digital artefacts for doing their work are fantastic’.

In a related study, Vobic (2009) says “commercialisation and cross-media mergers have eroded distinct professional identities of newsrooms and their publications” Vobic (2009:6). It is difficult to maintain a job in one distinct media organisation because, media owners will more likely hire people who can produce content for publishing on more than one platform. This requires media professionals to be dynamic and learn the changes that new technologies bring to their jobs in order to remain relevant to their media organisations.

2.2.5 Multi-skilling and increased pressures on journalists

Francis (2002) identifies the two main managerial themes driving the digital news movement as speed and empowerment. He describes speed as how fast pictures can air, using the now well-known advantage of server-based production. On the other hand, empowerment means allowing everyone in the production chain access to simple but effective tools to carry out their tasks. He further emphasises a process where journalists, producers, camera operators, picture editors, archivists or managers are able to see and manipulate news media at their own desk. He advocates an inclusion of all news professionals in the news production processes by equipping them with the needed skills for news gathering and production.

Hemmingway (2005) examined the implications of the implementation of a new technology known as the Personal Digital Production (PDP) a system that requires TV news journalists to have the ability to report, shoot and edit his/her new material. She argued that PDP system, which was introduced across the BBC’s regional newsrooms, represents a significant technological development of digitalisation and multi-skilling practices because it enables a
single worker to film and edit material for transmission.

2.2.6 Opportunities offered by the introduction of technologies

Hultin and Skog (2011) also found the high cost of distribution has been eliminated with the introduction of the online version of the Lambda newspaper. The online version made the newspaper widely accessible across country. With the advent of technology, journalists’ work has a wider reach with the limitless possibilities offered in the web space. The online newspaper also gave reporters a wider reach. Readers across the globe who log onto the portal of newspaper can access all publications of the newspaper, including archived versions.

Johnson and Forde’s (2011) study found that copy distributed by wire services like the Australian Associated Press (AAP), is considered more credible therefore, is not subjected to the tests of fact-checking, source credibility and follow-up. The assumption is that the news agency may have performed the necessary due diligence, therefore, the story as presented is credible. News houses on that assumption repackage the content and deliver them to their audience members. The study also found that distributing the newspaper before digitalisation was no longer financially viable. Therefore the digitalisation process saved the paper from possible collapse. Again, digitalisation made it possible to also deliver news more than once daily using the World Wide Web. Since it wasn't possible to sell the content online, the website only carried simplified version of articles and teasers, with them aim of attracting readers to buy the hard copies.

According to Domingo et al, (2007) despite the coordinating, collaborating or integrating strategies within many national media groups, it does not affect their national newsrooms.
The study suggests that collaboration is the most enduring practice in media convergence. It states that 60% of local and regional broadcasters do not only share materials for stories, but also sometimes produce programmes for both Radio and TV. For instance, in the case of 20 Minutos and Vocentus in Spain, the editors’ expect journalists to have distinct contents including; mobile alerts as well as video and animated graphics for the web, with the view to keeping up the overall quality standard and avoiding roles and task duplications.

2.2.7 Challenges of digitalisation

Brautovic (2009) suggests the process of digitalisation leaves no room for explaining corrections made to a journalist’s work. This makes it difficult for younger journalists to learn on the job from editors and experienced colleagues. Again, journalists also lose exclusive right to assignment material. Digitalisation takes away the previously held domain to material from a particular assignment by the individual journalist who covered it. This is because all journalists are expected to upload files from assignment onto a central server, to which all other journalists and editors have access.

In his study on convergence’s fundamental question, Quinn (2005, p. 35) mentions a number of factors that impede the convergence process. Key among the factors is trade union concerns about their members’ future. If it is unclear whether the process will lead to loss of jobs, unions are likely to prevent the implementation of media convergence and newsroom digitalisation.

The foregoing analysis represents the various ways in which technology has affected media in various parts of the world. The studies indicate that with the introduction of technology, newsrooms practices have also changed, taking into account aspects that improve news
gathering production and delivery. It is instructive to note that the changes that have occurred in newsrooms did not take place without resistance from journalists and other newsroom professionals.

2.3 Chapter Summary

This chapter critically reviewed research literature on how new technologies are affecting news gathering, production and delivery. It employs the Rogers’ (2003) diffusion of innovation theory in understanding how newsroom professionals of GTV adopted various technologies introduced during the period under review. Rogers is recognized as one of the pioneers in studies on innovation diffusion, especially, the current theories. The study provides a framework for understanding how innovations are adopted by newsroom professionals. The research suggests that one can study the role of new technologies in news gathering, production and delivery, at the macro level, where the focus is on organisation or at the micro level, where the focus is on individual decision-making processes of those in an organisation that adopts new technologies in its newsroom. The study places emphasis on individual decision-making processes within an organisation. The next chapter represents an overview of the research design and methodology employed.
CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.0 Introduction

This chapter outlines the methodology used in carrying out this study. It describes the population of the study, the sample population, study design, data collection instruments and methods, data analysis, quality assurance and ethical considerations.

3.1 Study Design

This was a qualitative study which employed documents analysis, observation and in-depth interviews to gather data from selected respondents. Qualitative research methods ensure understanding and explain why phenomena occur, from the viewpoint of those who take active part in the process. In the case of this study, newsroom professionals who have worked at the GTV newsroom were the most appropriate subjects to provide the needed information. This study sought to find out how technologies introduced over the last decade, have enhanced news gathering, production and delivery at the state broadcaster.

3.2 Population of GTV Newsroom

Ghana Broadcasting Corporation’s television has 62 reporters in the headquarters where the study took place and 12 video editors. The Corporation also has 39 cameramen, with 27 of them, stationed in Accra. There are 11 lights operators in Accra out of a total of 19. Out of twenty 23 sound operators nationwide, 17 work in Accra. All 23 technicians in the Master Control Room (MCR) are stationed in Accra because the transmission studios for television are in Accra (GBC Engineering Administration, 2014). It is important to note that out of the number mentioned four each of cameramen, light operators and sound operators are available to the newsroom each day. This is because the programmes and production departments also
require the services of these technical staff to produce other content for the station’s audience. However, during major events, the number of cameramen, light operators and sound operators are increased to meet demand in the newsroom.

3.3 Sample

Purposive sampling was employed to select respondents for this study. Purposive sampling is a non-probability sampling method. It does not offer every member of the population equal chance to be selected. Babbie (2011) indicates that occasionally, it is appropriate to have a sample selected based on knowledge of the population, its elements as well as the purpose of the particular study. Researchers are expected to collect enough data from the sample population that respond to the issue being investigated (Babbie, 2011). The researcher therefore selected from the population a sample that is capable of providing adequate responses to provide the needed data for the research. Out of the population of 62 reporters, three were selected for this study. Again, three managers, whose roles are critical to the introduction of new technologies, were also interviewed by the researcher. Two out of the 13 respondents were the only females because apart from the reporters, other departments that complement the newsroom had no females who fell within the eight to twelve-year bracket considered as the desired respondents for the study.

3.4 Case study

A case study is “an empirical inquiry that investigates a contemporary phenomenon within its real-life context when the boundaries between phenomenon and context are not clearly evident” (Yin, 2003, p. 13). In a study on the process of adopting multimedia and interactive technologies in newsrooms, Boczkowski (2004) indicated that “variations in organisational structures, work practices and representations of the users are related in different ways to
which newsroom workers adopt these technologies” (p. 198). The study sought to establish whether journalists and other newsroom professionals of Ghana Television who adopted new technologies introduced considered them useful for enhancing their work output or they adopted the technologies in order not to lose their jobs.

Case studies can offer useful information for both management and staff of a newsroom or any organisation. It is therefore necessary to use case studies to understand the impacts of modern newsroom as well as how they impact contemporary journalism (Meier, 2007).

This study investigated how responsive newsroom professionals of Ghana Television were to technologies introduced especially, at a time when the nation was preparing for a digital switchover. The study sought to establish:
(a) The effect of the introduction of new technologies on news gathering, processing and delivery at GTV.
(b) The factors that have affected the introduction and adoption of new technologies in the news production processes of GTV.
(c) The changes in roles that have occurred at GTV newsroom, with the introduction and adoption of new technologies in the news production processes.

One cannot draw any meaningful conclusion on the above without gaining an understanding of why the new technologies were introduced, the extent of adoption by newsroom professionals and how new technologies have improved the work culture of the GTV newsroom. To appropriately answer the above questions, this study interviewed thirteen respondents, whose roles are relevant to this study. The subjects of the study include; the acting Director of Television, Channel Manager for GBC 24, three broadcast journalists (a female and two males). The researcher also interviewed a sound operator, two video
editors, head of the Graphics department, the senior ICT Manager, a technician at the Master Control Room, a cameraman and the Director of Technical Production.

The above listed respondents were selected because of their individual and collective roles in the introduction and adoption of new technologies introduced in the GTV newsroom. The Chanel Manager for GBC 24, the acting Director of Television and the Director of Technical Production are part of senior management who take decisions on replacing or keeping a particular technology. The reporters and technical professionals are the end-users of technologies introduced in their various departments. They are therefore able to tell, whether the technologies introduced are facilitating or inhibiting the progress of their work output. The study therefore selected the named respondents to provide the needed data to enable the researcher determine whether the new technologies introduced have affected news gathering, production and delivery at GTV.

The respondents were sampled purposively because they are directly involved in selecting and using technologies introduced by the state broadcaster. The sample size was small due to the limited timeframe within which the study was conducted. However, the diverse sample ensured that all the major processes in news gathering, production and delivery were covered in the study. In addition to the interviews, the researcher through two weeks of interviewing also spent time observing processes in the newsroom. The reporter consciously arrived an hour ahead of every interview appointment in order to observe the processes. In some cases, the researcher had to wait longer because respondents were busy at the time. The senior Manager ICT, the video editors and the head of the Graphics department showed me changes that have occurred with the introduction of new technologies, as part of my observation of the new work processes. Two reporters also opened the version of Que series for typing scripts to
illustrate how the new technology has enhanced their work processes.

The researcher was also handed some document to enable him appreciate changes that have occurred at the state broadcaster and in some cases, what prompted those changes. Documents are written evidence handed to a researcher by an institution or organisation under study. They save the researcher a great deal of time, the researcher may not need to transcribe, they are carefully developed and require careful planning and thinking to put them together. Above all, the researcher is able to analyse them at his or her convenience (Creswell, 2003, p. 187). On the other hand, documents may be designed in a language that projects the image of the organisation. In this study, the researcher relied on publications of the state broadcaster that focused on technological changes at GTV. These were the 50th anniversary lectures delivered by Professor P.A.V. Ansah and the 75th anniversary brochure both of which had plans for improving not just the technologies but also ways of funding the state broadcaster. The former makes a case for TV license as an alternative source of revenue for consistent retooling of GTV. The latter made a case for acquiring technologies that will enhance both coverage and quality of content. Both documents recognised the challenges to news gathering, production and presentation at GTV. They also proffered solutions for improving same.

3.5 In-depth interviews

The study employed semi-structured interview schedule of open-ended questions. The interviews sought to investigate the extent to which the emergence of new technology has affected the process of news gathering, processing and delivery at GTV.

The interviews also explained factors that have influenced the introduction and adoption of technologies in the news production processes of GTV. The study further sought to examine
the changes in roles with the introduction of new technologies in the newsroom of GTV.

3.6 Observation

Observation occurs “in the natural setting of the activity being observed and can provide data, rich in detail and subtlety” (Wimmer and Dominick, 2003, p. 117). The researcher may notice trends that ordinarily may not be mentioned by the interviewees and this can enrich the study. The observation process is categorised into two (1) the degree to which the researcher participates in the behaviour under review; and (2) the degree to which the observation is concealed (Wimmer and Dominick, 2003, 115). The researcher conducted six of the interviews in the newsroom. The researcher observed processes at the GTV newsroom and other departments by arriving at least an hour ahead of schedule to familiarise himself with the work processes in the newsroom and related departments in order to see the professionals at work. This provided the researcher an opportunity to observe the processes and ask question where necessary. News professionals went about their activities without regard to the researcher’s presence because it was not announced to any shift that the researcher was there to observe their processes. The news professionals of GTV willingly explained their activities whenever the researcher sought clarification.

3.7 Data Analysis

The in-depth interviews were recorded and transcribed by the researcher. Themes were developed out of the responses to aid the analysis. The researcher relied on the cutting and sorting techniques to tease out the major themes and sub themes from the data transcribed. The thematic analysis was done following Ryan and Bernard (2003) four-step sequence, namely:
Familiarisation with data; the researcher read through the transcripts to understand the points made by interviewees and how they are situated within the topic for the study. It

Reducing raw data; the researcher then looked for recurring themes and network of ideas on how interviewees thought new technologies have affected news gathering, production and delivery at GTV.

Generation of textual codes and coding data; the researcher then synthesised all data relating to how new technologies have affected news gathering, production and delivery at GTV. This was done by identifying relevant information in the form of repetitions, and local terms and assigned them to the codes developed. New codes were developed to take care of all new information, if it didn’t fit any of the existing codes. The researcher also looked out for how different or similar statements are to enable him place them.

Categorising codes into themes; the codes were placed in groups, taking into account how they relate to each other. This formed the basis for further analysing the data.

Conclusions from this study have been informed by the themes that emerged from this inductive process.

3.8 Quality Assurance

To ensure that the quality of the data is not compromised the researcher validated the data with the subjects of the study. This was done to ensure that statements attributed to them in the interviews were accurate. The researcher also followed up on respondents for clarification and provided update on progress of work to avoid leaving gaps. All feedback received from respondents was added to the study.
3.9 Ethical considerations

All participants to this study were briefed about the essence of the research to ensure their full cooperation as well as assuring them of anonymity. Respondents were informed of the essence of the study to ensure that they confidently provided the needed responses. The researcher sought to conform to ethical standards.

3.10 Chapter Summary

The chapter discussed the research population and sample, the method for data, instruments and procedures used for collecting data. It also how the data collected was organised and analysed as well as the ethical for the study.
CHAPTER FOUR

FINDINGS

4.0 Introduction

This chapter discusses the findings of the study and provides evidence of how new technologies are affecting news gathering, production and delivery at Ghana Television. The study selected GTV because it is the foremost television network in Ghana. GTV was also working towards migration from analogue to digital television transmission. The chapter presents the factors for introducing and adoption of new technologies, changes in roles that have occurred at the GTV newsroom as well as editorial policy and changes in technology.

4.1 Factors for introduction and adoption of new technology

The acting Director of Television Betty Apau-Oppong (in a personal interview) stated that GTV introduced new technologies because the state broadcaster was committed to providing viewers quality pictures and programme content. According to the acting Director of Television, though new technologies do not always address all challenges of those they replace, they keep the station ahead of competition. Oscar Nchor (in a personal interview) also explained that over the years, the station has introduced a number of new technologies to improve news gathering, production and delivery and above all, ensure viewer satisfaction. The Director of Technical Production further indicated that in order to sustain viewer interest, the station invests in modern technology and equipment. Over the last decade, the station has introduced new cameras to improve picture quality as well as new software writing stories, editing video, sound and text. GTV also currently has a network server for archiving footages. The Channel Manager for GBC 24, Johnny Aryeetey, stated that cameras have changed from XD Cam to Z5 now and the Que series has replaced the different application software for various departments whose work contribute to news gathering, production and
delivery in the television newsroom. The Que series harmonised the operations of the individual units to ensure a coordinated platform. Whereas reporters and video editors believe the primary reason why the state broadcaster over the years, introduced technologies was to improve the picture and programme quality as well as stay ahead of competition, Director of Technical Production revealed that sometimes the station is compelled to introduce new technologies because existing equipment may not have parts readily available on the market. He explained that manufacturers sometimes keep all components of equipment out of market to compel users to abandon them for new models. Oscar Nchor further stated that to remain up-to-date in the industry, the station needs to keep pace with technology. He however, conceded that financial constraints have made it impossible for the station to keep up-to-date with the ever growing changes in technology.

4.2 The GTV newsroom in the last decade

Over the period under consideration, GTV introduced processes with the view to migrate from analogue news production to digital news production. To fully implement the digital newsroom, new equipment and software were procured and newsroom professionals were trained to use both software and hardware to increase efficiency in their work output.

According to Johnny Aryeetey (in a personal interview) the Ghana Television newsroom has gone through about five generations of cameras over its period of existence. The camera technology has moved from eye reflex films to U-matic, BETA CAM, XD CAM and now the Z5. However, over the last decade the station has used two cameras. GTV in the last decade used XD CAM and later switched to Z5 cameras because in the explanation of the Director of Technical Production, Z5 cameras were more compatible with the Que series. EboSackey, a cameraman in a personal interview (13th October 2014) stated that input devices (tapes, discs
and chips) for previous cameras had limited storage capacity, but Z5 addresses those shortfalls. He explained that:

When you cover an assignment with a tape that has only twenty minutes, you need to manage space to capture just the relevant footages for your story. We often needed the printed speeches at assignments to tell an accurate story. This is because we could not record all the speeches of events, given the limited capacity for storing footages. But the Z5 camera has more than eight hours of storage capacity and also offers high quality pictures.

Comparatively, the Z5 cameras are more user-friendly. They are easy to operate and have two input devices, (the mini DV tapes and the chips). According to the Cameraman, using the chip is better because it has bigger storage capacity. The chip is easier to handle and the breaks that occur with video tapes do not occur when using the chip system.

The Channel Manager for GBC 24 stated that changing from one technology to the other was always as a result of management’s desire to keep abreast with changing technology to remain relevant in the industry. The Director of Technical also explained that some of the technologies have been introduced to reduce cost and increase efficiency:

When cost of electricity was increasing the station decided to invest in camera that required less light to produce quality pictures. This was a cost saving measure.

Barbara Gaisie, a reporter (currently a news editor) in a personal interview (11th October 2014) stated that the newsroom migrated from the use of typewriters to computers with Microsoft applications for text processing but since the year 2010 reporters have switched to the Que series, a software that combines various features for processing various aspects of television news stories.

The current software combines properties for processing text, audio and video and also makes the final content available for on-air delivery. The software makes it possible for the editor, reporter and newscaster to access a story in real time. This means when a reporter is working on a story, the editor can simultaneously access the script on the work station.
Even though some reporters were not enthusiastic about the new software because of their limited knowledge in the use of computer-based applications, some in-house trainers, including the editors assisted such slow learners to become familiar with the Que series.

Edward Nyarko, a reporter (Business news editor) in a personal interview (14th October 2014) explained that by the end of video editing, the story is ready for on-air play with the click of a button. The reporter added that the Que series has eliminated the need to physically carry scripts, edited voices and videos footages to either the video editing bench or the Master Control Room (MCR) for on-air play. Until the introduction of the new software, reporters carried hard copies of scripts to the Show Editor for editing before a voice clip is recorded. The audio clip is consequently sent to the editing bench, where the video editor matches the voice clip with the video rashes before it is finally sent to the MCR for onward play, with the click of a button. However, with the introduction of Que series, the process of producing news stories has been simplified. The reporter now downloads the footages gathered from the field onto the server, where it can be accessed by the Show Editor, with the aid of the Que series. Voice clips are also saved under labels and the reporter working on the story then gives the assigned label to the video editor for easy identification. The edited story is sent to the Master Control Room with the click of a button. This process eliminates the need to physically carry elements of a television story to various units within the production process.

A typical instance is where the reporter types the story; sends to show editor for script editing. After the script is edited, the reporter goes through it and records the audio clip. The recorded audio clip is physically forwarded to the video editing bench on an input device (tape, disc or USB drive). The video editor subsequently merges the footages with the voice clip to complete the story. This whole process has been harmonised in the Que series.
The acting Director of Television, Betty Apau-Oppong stated that though the objective of station has been to invest in new technologies to improve the quality of pictures, the Que series has been fraught with many challenges.

The station introduced Que series because we wanted to move with the times. However, though each step brought a level of improvement in output; there have also been many challenges. Despite the technology being modern, video footages sometimes become still on air. The experience is not a pleasant one, especially because the technology is barely five years, the acting Director of Television said.

Melvin Jones, a video editor (in an interview on 11th October 2014) conceded that the Que series offered a unique platform, where, at the click of the button, the edited video story is ready for on air play. The Video Editor explained that:

The XD CAM (the version of cameras used before the Z5 was introduced), was not accompanied by video editing software so we had to record footages in bits and play them in card readers. But the Que series allows for video editing using software. The software makes our work more organised and also eliminates any need to physically carry the edited story to the Master Control Room.

Video editing is no longer cutting and joining of tape or recording parts of video onto another input device to play. Video editing now requires using software to cut and join footage, audio clips and text to tell stories. The new technology also has a server for storing all footage, both raw and edited. In the server for archiving videos, all footages are labeled and categorised for easy identification. This makes it easy for video editors to import any video or audio for editing.
Nutor Bibini Nutor, a reporter, (14th October 2014) stated that the new technologies have
made their work easier. He however, was unhappy that the Station failed to consult the end-
users of the technologies to solicit their input before such technologies are introduced. For
instance, he said the thumbnails offered by the disc of the XD CAM made it easier to locate
footages, but he conceded that the Que series is more user-friendly and more efficient.

Richard Dellali, a supervising video editor (18th October 2014) indicated that video editing
software has made their work easier. He explained that:

For instance, now we are able to easily effect corrections on the edited work. Again,
how we work has changed greatly, the server stores all the stories so I can work with
speed and accuracy. All stories are labeled and sent to the server instantly. The edited
stories are cued on the Show Editor’s line up with a click of a button. The Director
now sees the list of stories running and by the click of a button, a story is invited on
air.

John Ocloo, the Manager of television graphics (19th October 2014) explained that the
department has migrated from physical set design to the use of computer-based applications
for set design.

Over the last decade we have designed sets using software. We can use any design
including the flagstaff house as our set. We only need a photo of it. The current set
design is done using software such as Cinema 4D, 3D, Studiomax, Adobe after
effects. We also use CorelDraw, Illustrator and Photoshop for image enhancement.

The Graphics department is also responsible for webcasting. All news programmes are
content has become possible since the new technology was introduced at Ghana Television.

GTV’s investment in technology was aimed at cutting cost and meeting the global deadline
for migrating from analogue television content delivery to delivering television content to
digital platforms.

The Director of Technical Production explained that:
As we approach the global deadline for digital migration, we expect TV reception to change, end-users will have to acquire new TV sets or use mediated devices for receiving TV signals.

Acting Director of Television also indicated that the job schedule of newsroom professionals has changed. For instance, reporters produce a minimum of two stories during their eight hour daily shifts. Stories have become shorter in length and more precise because edited stories cannot go beyond one and half minutes.

Aside from the changes in software and hardware, there are other changes in the newsroom arrangements to ensure fluidity in their operations. Reporters, for instance, have been assigned to desks such as political, business, entertainment, health, education and sports among others. This was occasioned by the introduction of new technologies and management decision to broadcast every hour, unlike the twice daily news broadcasts.

Furthermore, the introduction of technology has also changed news professionals’ attitude to work. Acting Director of Television explained that:

Until the 24 hour service began, we only came to work at 8:30am, but presently, our first news bulletin is at 7:00am. This means that reporters need to do more, but they have adjusted without any complaints. The same reporters who used to produce one story a day, now produce two stories each, during their eight-hour shifts. The morning bulletin also provides that reporters arrive early each day to work but may leave late when there are trending stories and features that must be produced for the 7am bulletin. However, breaking stories are produced in the morning for the bulletin.

GTV now delivers news in both analogue and digital formats on its omnibus channel. However, it also operates five more digital channels (GBC Life, GBC 24, Obonu TV, GBC Govern and GTV Sports Plus) that are available in Accra and Kumasi. Users of digital television sets in other parts of the country, can access all six channels. According to Augustine Yorke, a Senior Manager ICT, (on the 20th October 2014) with the aid of new
technology, GTV is able to host 15 additional television content providers on its platform. Again, every news item on GTV is also delivered online to a global audience through the station’s online portal.

4.3 Changes in roles at GTV newsroom

Nutor Bibini Nutor stated that reporters are no longer passive observers in the news production process, particularly, editing footages. He explained that reporters now begin editing their stories from the field. “We need to decide the shots that will better tell our story from the field before arriving at the newsroom”, he said. The reporter further stated that news professionals had to produce their scripts using computer-based applications.

Edward Nyarko also mentioned that that reporters are now able to record their audio clips without waiting for sound operators. Reporters claim recording sound previously was not always smooth, especially, when sound operators closed from work or were on break. Reporters needed to wait for them before audio clips could be recorded, this put undue pressure on reporters. However, the situation has improved greatly with the introduction of the new technology.

According to the manager of Graphics, two set designers in the department who were unable to learn computer applications for set design, were moved to another department. Throughout the study, they were the only professionals, whose roles changed with the introduction of Que series in the year 2010. Reporters have become more involved in the process of producing news stories for airing.
According to the Channel Manager for GBC 24, reporters now plan their stories before they set out. They are expected to capture only the shots that enables them tell their stories accurately. This means that footages sent to the editing bench are shorter, because cameramen now take shots relevant to telling a particular story. Reporters also need to work with video editors to ensure that footages tell the story accurately.

Johnny Aryeetey further explained why the twenty four-hour news channel requires reporters to produce more content within the same timeframe. He explained that:

We have a bulletin every hour, hence the need to produce enough stories for every bulletin. Unlike previously when we had only two bulletins, the current structure provides for producing fresh and compelling content for every bulletin.

In all the other departments, the professionals went through training to enable them adjust to the use of the new technologies introduced. He further explained that the newsroom professionals understand what was at stake if the state broadcaster must remain relevant television audience. News professionals know that if they failed to learn the use of new technology introduced, they could lose their jobs. He was certain that many reporters and news professionals learnt to use the new technologies because they wanted to keep their jobs.

4.4 Multi-tasking and Multi-skilling

The Hemmingway (2005) study revealed that the BBC TV news reporters across regional newsrooms learnt to shoot and edit their news stories. But reporters at GTV newsroom still maintain their roles before new technologies were introduced. Even though some reporters have learnt video shooting and video editing, their job description remains the same. Work schedules at GTV also remain the same, despite the introduction of new technologies; however, reporters are now expected to produce at least two stories during their eight-hour
daily shifts. Furthermore, news features production is encouraged and reporters working on features are given enough time and space to research and produce those elaborate stories. Two out of three reporters interviewed in the study indicated that though they can shoot and edit their stories, they are not permitted to do that officially. The state broadcaster still maintains a policy news professionals concentrating on their core jobs. They explained that any attempt by reporters to shoot and edit stories will be seen as invading the professional territory of cameramen and video editors. Edward Nyarko explained that:

Because we are not allowed to produce such stories at work, whenever I want to promote a particular story, I edit them myself and post them on my blog and also share them on social media. Editing and sharing stories on social media gives them more mileage.

The Que series also requires reporters to type their stories. This is a major shift from what existed before computer-based application for processing text was introduced in the newsroom. Nutor Bibini Nutor also indicated that he learnt to shoot video to avoid missing out on big stories if his cameraman blacked-out on the field. He said currently, GTV’s policy provides that newsroom professionals concentrate on being efficient at their core jobs. However, some reporters have created social media accounts to further promote their stories. These accounts serve as platforms to share stories to further promote their work. Sharing of stories via social media has become possible after Voice of America trainers trained GTV reporters on promoting stories through social media.

According to the Director of Technical Production, GTV adopted the gradualist approach to digital migration because media organisations in various parts of the world that attempted full-scale migration failed to carry the professionals along. He said news professionals play an important role in the success of digital migration; therefore, it is important to train them adequately before implementing full scale migration can be implemented. Both the acting
Director of Television and the Director for Technical Production explained that in the coming year, GTV will introduce multi-skilling for multi-tasking. The Director of Technical Production indicated that:

News professionals at GTV have not assumed new roles as yet, however, in the coming year; cameramen for instance, will operate the lights as well. We are looking at a two-man crew covering events rather than the current four-man teams. Elsewhere, we know redefinition of roles is a feature of digital migration.

On the same subject of multi-skilling for multi-tasking, the acting Director of Television conceded that roles have not changed because there is no policy to train people for multi-skilling and multi-tasking. She stated that though some reporters can edit their own videos, video editors continue to edit all stories.

4.5 Editorial policy and changes in technology

GTV’s news gathering, production and delivery processes have changed to reflect the current operations. Until the current system was introduced, reporters in the regions sent their written scripts along with video tapes through public transport. According to the Channel Manager for GBC 24, the all-news channel, tapes sent through public transport could take a number of days, especially, those coming from northern parts of Ghana. Reporters in the regions have now been trained to load their footages onto YouTube so that video editors in Accra can download and edit for bulletins.

Johnny Aryeetey explained that the downside to the new arrangement is that reporters in the regions do not have the opportunity to identify the specific shots that must accompany their stories on the editing bench. However, if reporters limit their shots to the essentials, the editors’ final work is likely to reflect the story regional reporters intend telling with the footages. Internet connectivity was identified as a major challenge to using the FileZilla. The
FileZilla is an internet based storage facility that allows people to share videos. Regional reporters were required to share their stories through this medium until it became more costly and less efficient. Regional reporters now have access to laptops with Internet connectivity to enable them upload their stories to YouTube. Reporters are also encouraged to use other social media tools like Facebook, Twitter and Whatsapp to share footages. These were previously not part of the station’s news gathering, production and delivery processes. The Channel Manager of GBC 24 explained that the station now has many news spots to fill, therefore the need to be more efficient in producing stories. Again, other media houses sometimes cover the same stories, therefore to compete favourably in the competitive television industry, GTV must tell timely stories. Finally, GTV’s mandate of providing voice to all shades of opinions in the Ghanaian society requires that those stories are told to reflect diversity. The 24 hour news cycle imposes a huge responsibility on the station to ensure that it tells stories that are relevant and also reflect our diversity.

Telling stories that reflect diversity requires prompt access to contents for news production. To achieve that, the state broadcaster intends to create bureaus, where stories from the regions will be sent for production and on-air delivery, in the medium term. In the view of GTV management, creating the bureaus will reduce the workload in Accra and make the broadcaster more efficient.

4.6 News Professionals’ roles and policy change

The GTV management insists that daily news conferences must be used to share all information among newsroom professionals. Both the acting Director of Television and the Director of Technical Production stated that all decisions on technology changes and use are taken at the management level, where the newsroom is represented. Therefore management
discounted claims that decisions on introducing new technologies to in the newsroom are taken without consulting the end users. The Channel Manager for GBC 24 explained:

We run three shifts and every shift on duty holds editorial meeting. Decisions on which stories to tell are taken at the editorial meeting. News professionals discuss ideas; follow ups, features and documentaries that need to be done. There is another meeting for top level staff in the afternoon, to hand over to the next shift, to decide on which stories to tell in subsequent bulletins. So, on a daily basis everybody is aware of what is happening. All changes are announced at these meetings. All newsroom staff therefore have the opportunity to raise issues pertaining to the technologies and related difficulties for further consideration by the team.

Although the above arrangement is a routine in most newsrooms, the GTV newsroom adopted this approach after the new technologies were introduced to increase the number of bulletins for a day.

Apart from management staff, all others interviewed stated that management does not consult them before taking decisions on technologies for their departments. Nutor Bibini Nutor explained that:

Members of the newsroom staff have no say in the technologies that are introduced in this newsroom. This is backward because corporations also have democracy, where people take part in decisions that have a bearing on their jobs. The current system that requires reporters and cameramen to limit their shots to the bare essentials, while on the field, can also pose as a challenge to news gathering. I want to place on record that GTV management never shares any ideas with the end users before acquiring any technology. They take their own decision on technologies and dump them on the reporters.

Melvin Jones, a video editor also expressed displeasure over the neglect of newsroom professionals’ in deciding which technology will best enhance their output. He explained that:

When you talk about GBC, no one seeks your opinion, all you see is that new equipment have been installed and you need to learn all about them and work with them.
Management insists that even if members of staff were facing difficulties with software, they may not be in a position to find alternatives that will solve their problems. The acting Director of Television explained that:

Management knows that it is possible for newsroom professionals not to agree with management over new technologies that are introduced. However, sometimes when the unit heads read about a technology and inform management of its relevance to their work, management may acquire it for the unit. Just recently, workers in the archival library informed management about the need to retool to prevent data loss. A new machine was acquired to free up some space on the server.

Management claims when departments and their heads are able to suggest relevant software and justify how useful it will be to their line of work, management will ensure that the software is acquired.

4.7 Training to adopt new technologies

Reporters and other newsroom professionals criticised training programmes that accompany the introduction of technologies. They were displeased that such training programmes are often done after the technology has been introduced. Newsroom professionals believe many of the infractions committed on air could be avoided if training for the use of technology preceded its use by all professionals. For instance, Barbara Gaisie in an anecdote explained that:

It is important for changes in software to be gradual so that news professionals will become familiar before the software is fully adopted. If the training is organised after the new technology is introduced, errors made by news professionals feed into negative perceptions about the station.

The acting Director of Television indicated that the introduction of every new technology is accompanied by training programmes. The training is designed to cater for the needs of various departments. Cameramen’s training will cater for their work within the value chain and the same arrangement is done for all departments of GTV that will use the technology
introduced. When the Z5 and the Que series were introduced, a six months’ training programme was organised to ensure that staff of all departments are given the needed training. Betty Apau-Oppong indicated that some members of staff were also trained as trainers to enable them pass on the knowledge to new staff and interns who will be recruited subsequently. However, newsroom and allied professionals claim the training that usually accompanies newly introduced technologies is not comprehensive enough. Richard Dellali, a video editor explained:

Management waits for the technology to arrive before training is organised. Manuals for equipment are also not released to enable us learn about the equipment on our own to improve our knowledge in the use of software and equipment.

4.8 Challenges to the introduction of new technologies

A few staff in the news production chain switched roles due to the introduction of new technologies. The typists in the newsroom were the first group of staff to leave the newsroom when computers were introduced in the newsroom. With subsequent introduction of technology, two other professionals in the graphics department were the only casualties. They had to relocate to the props department because they could not use the computer-based applications for set design. All other newsroom professionals struggled to use the software when they are introduced. Richard Dellali explained that:

It was difficult from the onset but most people learnt to use the software with time. Now, most professionals are familiar with aspects of the technology related to their jobs.

According to the Director of Technical Production, the introduction of the new technology, was to ensure a single newsroom, where reporters worked for both TV and radio to ensure efficiency. This meant audio could be generated from television footages for radio stories. However, though the broadcaster succeeded in housing the two newsrooms within a common space, there is not much collaboration between them. Oscar Nchor stated that both
newsrooms still send individual reporters to cover the same event, even though one person could cover such assignments for both platforms.

Barbara Gaisie also stated that though radio and TV work in the same newsroom, each department has its own structure, therefore it is not practical to assign a radio reporter to cover a television assignment and vice versa. The news professionals also objected to one director of news and current affairs responsible for radio and television, the two units currently maintain separate hierarchies. She further explained why news professionals were opposed to running a single newsroom for both radio and television with the introduction of the new technology:

We didn’t understand why they wanted to put us together with the radio news team because if you take me to the radio section I can read, but what will the radio person do if you brought the person to the television section? The technology just can’t make that happen.

The original idea was for both television and radio to tell the stories in the same way. But that was opposed by newsroom staff so management did not implement it. Television newsroom professionals stated that because they need photos to tell their stories, it was impossible to tell stories the same way as radio does. The foregoing discussion borders on not just news gathering but also production and delivery. If the arrangement was implemented, all reporters would have used television footages for their stories. Radio stories could either play and record or save the audio channel of the footage and covert to stereo, for radio. Television will then use the footage to tell its stories.

The Director of Technical Production explained the rationale behind merging the two newsrooms:
We in management wanted one team that covers all events to be used by both radio and television. Each could access content from the server to produce their stories and this saves cost, but for reasons best known to the teams, they opposed it.

The biggest challenge to introducing technology into the news production process is raising the needed financing to replace equipment, whenever they breakdown or become obsolete. The broadcaster depends on government for major financing. The existing TV license fees paid by television owners and dealers are not enough to equip the state broadcaster. This means that the station must depend solely on the benevolence of central government to finance major investment in equipment and infrastructure. Management indicated that it is committed to raising more Internally Generated Funds (IGF) to contribute meaningfully to major investments to keep up to date with technology.

According to both management and newsroom professionals, the Que series has on many occasions disappointed the station. Some of the major setbacks include frozen pictures on air, cues that fail to load, among others. This means that tapes and papers still form part of the news production process, even though these were not expected to be a part of the Que series. The acting Director of Television poured out her frustration over challenges with the use of the new technology:

I think the Que series is an improvement over what we had previously but we thought it was going to be problem free and paperless but we ended up using some tapes and papers. The technology is not too old to encounter such problems but they keep occurring. It is not certain whether the system is the same as what everyone else is using.

Again, delays in one department are likely to affect the entire production. If a video editor does not get adequate information from the reporter, the quality of edited work may be compromised. The work must be in a timely fashion too. This requires all departments in the news production process cooperating to ensure efficiency. For instance, the reporter needs to
understand how to use the version of Que series suitable for editing video before he or she can do the final rough cut for the video editor. The sound department complains of the new camera technology because it does not come with cables that will aid their work. Joseph Essilfie, a sound operator the researcher interviewed indicated that:

For instance, in the past new cameras came with cables and microphones but in recent times, the cameras come with no new microphones and cables, so we are compelled to use our own cables for the work.

Management acknowledges that the introduction of the system has not solved all the problems that affect news gathering, production and delivery. The acting Director of television explained that:

I think the Que series is an improvement over the previous technology; however, it has failed to eliminate the use of tapes and papers in the news gathering, production and delivery. Though the technology is not too old, we continue to encounter challenges I'm not sure all other users do.

Both management and staff concede that downloading video footages in real time is a major disincentive to the work of newsroom professionals. News professionals spend the same amount of filming time to download the footages onto the server. This means it takes an hour to download the footage an event lasting an hour, before editing. News professionals consider the time spent to download footages, a disincentive to their work.

4.9 Chapter summary

This chapter presented the findings of the study from the interviews conducted with reporters, management, technicians and operators who contribute to the work output of GBC 24, the station’s dedicated news channel. It reflects how technology has affected news gathering, production and delivery at the state broadcaster.
CHAPTER FIVE
DISCUSSION OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction
This chapter discusses the findings presented in the previous chapter. The discussion is done taking into account the research questions, the theory of the study and the related studies on how technology has affected news gathering, production and delivery. Conclusions are drawn based on the findings as well as recommendations for further studies.

5.1.0 Technologies and the processes of news gathering, processing and delivery at GTV
This study sought to find out how new technologies introduced by the state broadcaster over the last decade, are affecting news gathering, processing and delivery. The findings presented in the previous chapter suggest that news professionals consider the various technologies introduced as very useful to their individual and collective work output. Their positive predisposition to the technologies is predicated on the amount of time currently spent in retrieving footages and editing their stories. The new technologies have made it possible for news professionals to produce more stories within the same timeframe.

5.1.1 Relative Advantage: Attitudes of newsroom professionals
These discussions are done using the indicators of the diffusion of innovation theory. Relative advantage refers to the superior qualities that the new innovation possesses over the existing one and it is measured taking into account its economic benefit. News professionals mentioned that they no longer depended on sound operators to finish their voice clips. They were also excited that their scripts were edited without prompting the Show Editor. The Show Editor on duty edits all scripts produced during the shift. Reporters then record the edited scripts into sound clips. The recorded sound clip can be accessed on the editing bench to
compliment the video to produce the news story. News professionals at GTV indicated that their work output has seen significant improvement with the introduction of the Que series. They said the software does not only offer limitless possibilities in their work but also enhances news professionals’ ability to gather, produce and deliver news content as compared to previous technologies.

Though some newsroom professionals were encouraged by colleagues and editors to learn the use of the technologies, as soon as they become familiar with the new technology, they found them superior to the Microsoft application, previously used to produce scripts. Their attitude supports Rogers’ (2003) suggestion that individuals will expose themselves to an idea if it supports “their interest, needs or attitudes” (171). All interviewees of GTV agreed that the innovation has enhanced their work output.

All reporters were trained to use computers to enable them type their stories without assistance from anyone. Two staff of the graphics department who could not use computer-based applications left the unit to join the props department. Their departure from the Graphics department because they could not use the computer-based software presents them as laggards in the diffusion process. According to Rogers’ (2003) members of the social system who consider adopting a particular technology as high risk are laggards.

5.1.2 Compatibility: How newsroom professionals interpreted the technologies

Compatibility refers to how an innovation follows in the existing values and known experiences of the potential users or adopters. If the innovation is compatible with existing knowledge and experiences of news professionals they are likely to adopt it. Que series did not alter the daily routines news professionals; it rather offered them a seamless platform for
their work. The innovation made it easier and reduced human interaction by replacing it with a more efficient system.

GTV’s mode of introducing technology in the newsroom fits into Rogers’ definition of persuasion. According to Rogers persuasion is equal to “attitude formation and change” on the part of the individual (Rogers, 2003, p. 175). This is because if all the individuals form a positive disposition towards the innovation they are more likely to adopt it. The newsroom professionals who had been introduced to the technology had to decide whether it was useful to their work or not. The decision also occurs at the persuasion stage, where members of the social system are informed about the innovation. Newsroom professionals at GTV found the technology introduced useful to their work, even though they were not happy with the level of consultation before the Que series and the supporting equipment were introduced. They found the innovation not only compatible with their existing experience but it also improved their work output. Professionals who started using the technology earlier found the limited human interventions and combined features of text, voice and video as a new and refreshing way of producing news content.

5.1.3 Complexity: Positioning the innovation in the work of newsroom professionals

Complexity deals with the ease or difficulty in using an innovation. Innovations that are easy to understand are categorised as simple. Conversely, those that are difficult or cumbersome to use are considered complex. The Que series was not considered complex by the newsroom professionals of GTV. This was because all news professionals were familiar with the hardware that carried the new software, therefore news professionals needed to learn to manipulate the software to gather produce and deliver stories. Reporters produced their scripts and audio voice-overs, using the Que series version 1.5, whereas video editors and
master control room operators used Que series version 2.0 for video editing and playing of footages. The version of Que series for typing scripts is also a computer-based application with an interface similar to other text processors; therefore it was not a complete departure from what reporters used previously. It offered reporters a consolidated platform for story production. Again, the innovation made it possible for reporters to remain at their seat, as the Show Editor reviewed their scripts after which they will record voice clips for onward transmission to the video editor to complete the story.

5.1.4 Trialability: GTV reporters adopted the technologies

Trialability refers to how an innovation can be tried on a limited basis. If potential users or adopters can try the innovation, they are more comfortable with it and can decide whether or not to use the innovation (Rogers, 2003). According to news professionals of GTV, once a technology is introduced, they are expected to learn to use it because it will not be withdrawn. The Channel Manager for GBC 24, in his response to whether there was any major opposition to the introduction of new technologies in the newsroom, indicated that the policy of the GTV newsroom is for reporters and other professionals to either learn to use the technologies or lose their jobs. Maybe this is a covert factor to newsroom professionals’ decision to adopt technologies introduced over the years. What reporters consider most important is how the innovation introduced will increase their efficiency and improve their work output. In the study of the GTV newsroom, there was no indication that innovations introduced are tried on limited basis before general adoption. Management indicated that once it is convinced that a particular technology will help increase efficiency and improve output, it will buy the software or hardware, provided there are enough funds. However, reporters were worried that the Que series sometimes fails to function during news bulletins.
For instance, some reporters complained about the Z5 cameras which replaced the XD Cam, because they now had to download their footage in real time. However, these reports only came after the technology had been adopted because news professionals continue to use the technology regardless of the challenges identified. The acting Director of Television, however, explained that the chip of the Z5 has more storage capacity compared to the disc used by the XD Cam. The chip is also able to carry more footage; again, the Z5 system is more affordable to operate, therefore the station’s decision to switch to the chip system of the Z5 cameras. In the case of GTV, though management made it mandatory for reporters and other newsroom professionals to switch to new technologies introduced newsroom professionals also found the technologies useful for their work. Though there was no trial on limited basis, respondents cited the elimination of physically movement of text, voice and edited stories to the Master Control Room and editing suite as well as the elimination of human factor as some of the motivating factors for adopting the Que series.

Interestingly, though Rogers (2003) refers to trials as important to the adoption of technologies, GTV news professionals have adopted all technologies introduced without such trials. The approach used over the years is to introduce the innovation and organise training for news professionals on how to use the technology concurrently.

### 5.1.5 Observability: making the technology work

Observability refers to how the results of a particular innovation can be observed by others. If the result is evident, it may lead to easy diffusion. However, where one cannot easily see the evidence, the rate of adoption is slow. More observable results will attract even skeptics to take up an innovation, (Rogers, 2003). News professionals interviewed found the results of the innovations introduced in their newsroom highly observable. This was because other
news professionals saw improvement in the output of their colleagues who used the new technology. Their output improved greatly telling on the general news production. Reporters who learnt to use the technology earlier, produced their two stories per shift. All three reporters in the study indicated that learning to use the technology greatly improved their output.

The individual or group seeks information actively at this stage to limit possible uncertainties. In the case of GTV, the Que series introduced in 2010 is still in use and has become part of the station’s operations. According to Rogers (2003), when an innovation becomes part of the adopting organisation’s processes, implementation is completed. Conversely, Kamal (2006) suggests that an organisation’s decision to adopt an innovation marks the beginning of actual implementation. From the point of implementation onwards, it becomes important that the innovation is accepted and assimilated. The GTV newsroom professionals found ways to deal with the challenges of the Que series. For instance, news anchors still carry printed scripts of a bulletin to the bridge, to avert software challenges associated with news delivery. Again, to overcome the challenge of storage, old discs are used for archiving stories whenever the server runs out of space for storing news after delivery. Furthermore, reporters have also been encouraged to reduce the amount of footage recorded for a story from assignments. This is to help reduce the download and editing time for stories.

Though some reporters and other professionals have learnt additional skills on their own, the state broadcaster does not allow it reporters to use those acquired skills to tell their stories. However, reporters who have personal cameras and smartphones can shoot footages needed for stories, especially, in breaking news situations but this has not been institutionalised as newsroom practice.
5.2 What factors have affected the introduction and adoption of new technologies in GTV’s news production processes

Introducing innovations in the GTV newsroom had the ultimate aim of ensuring that the state broadcaster remains the market leader and also keeps up-to-date with emerging development in the industry. But management is unable to keep pace with the fast growing development in technology. This is because it lacks the needed funds for replacing outmoded technology. The broadcaster depends largely on central government for major investment, this puts technological advancement at the behest of the ministry of finance. Until government releases funds, no new technology can be acquired. According to the Director of Technical Production, in order to address the challenge of replacing obsolete technologies, management has resolved to raise significant internally generated funds to retool in order to remain relevant in the industry.

Again, though integrating the Que series into GTV’s operation on the outside seems seamless, management’s plan for both radio and TV newsroom to work together is yet to be fully realised. The plan was for one reporter to cover each assignment for both radio and television. Management referred to the difficulty during personal interviews but did not state a clear position on how it will address the stalemate, even though it still nurtures the intention to implement multi-skilling for multi-tasking. If no antidote is found to address this challenge, the plan for multi-skilling for multi-tasking will only remain a bright idea on paper.

Furthermore, though reporters have concerns over the amount of training and the duration of training offered with the introduction of the Que series and other innovations before it, they have not forcefully resisted the implementation or adoption of innovations introduced in the
past. Reporters and other professionals also have concerns over the absence of consultation in the choice of technologies to enhance their output. The acting Director of Television, for instance, believes that though reporters and other news professionals may have concerns with a particular technology, they do not possess the expertise to suggest alternative technologies to be procured. Contrary to her position, a reporter in the newsroom (business news editor) proposed the need for the station to upgrade the version of Que series currently in use at the state broadcaster because it is dated. He also mentioned that the video editing component of the Que series currently used by the station is no longer in vogue in the industry. This could be interpreted as management taking for granted news professionals’ knowledge of new trends in their line of work.

Finally, it is instructive to note that in almost all the literature reviewed on the impact of new technology in newsrooms, one of the cardinal features of introducing new technology in newsrooms is the changes in roles of newsroom professionals. News professionals either add to their tasks or alter their existing tasks to make them relevant to the newsroom. Those who fail to learn new skills lose their jobs; however, professionals in the GTV newsroom still maintain their core functions with the advent of new technology. The closest one can point to are the two older staff in the Graphics Department, who offered to be moved to the props unit because they could not learn to use computer-based applications from scratch.

5.3 Changes in roles at GTV newsroom with the introduction of new technologies

The introduction of Que series and the Z5 cameras at the GTV newsroom has not led to changes in roles for news professionals. Reporters and other newsroom professionals continue to do their core jobs without any additions. However, it is instructive to add that some reporters have learnt additional skills, but they cannot employ them because the station
maintains a policy of specialisation for its professionals. The station’s current policy prescribes that reporters and other professionals in the newsroom concentrate on delivering their core tasks efficiently. Furthermore, newsroom professionals are expected to achieve more, reporters produce at least two stories and cameramen can cover two assignments within a shift. Until the new technology was introduced, GTV produced news for only two major bulletins at 7pm and 10:30pm. The introduction of Que series paved the way for digital transmission of sound and pictures, therefore digital television users access digital signals for all six channels of GTV, again, the number of bulletins on the local news channel have increased. Apart from the existing major news items, the station now has hourly bulletins. This requires more stories and features that will make bulletins refreshing.

To meet the hourly demand for fresh stories, reporters are expected to produce more stories during their daily shifts. They are also expected to produce features to make the bulletins comprehensive. News professionals in this study indicated that their skills have been sharpened to present their stories in a more concise manner. This means each bulletin can tell more stories than was done previously.

Management’s decision to introduce multi-skilling for multi-tasking in the coming year will receive wide acceptance among reporters. Some reporters (deputy news editor, business news editor and video editors) are expectant to apply other skills acquired in their storytelling. It will therefore be interesting to see how the station introduces its programme of adding on to the tasks of news professionals. The Director of Technical Production indicated the stations desire to cut down the number of people who cover assignments. He lamented over workers on the Outside Broadcast (OB) Van whose only task is to attend to power cables while on the field. The acting Director of Television added that the station’s introduction multi-skilling
will have teams of two covering assignments. Pairing up the teams is a clear departure from the current teams of four, made up of cameraman, sound operator, light operator and reporter all of who cover one assignment at a time for the station.

5.4 Limitations of the study

The study relates to the newsroom of Ghana Television, therefore the findings should be considered within that context. The sample size in this study is not representative of the population of the GTV newsroom and the views of the respondents may not necessarily represent those of other professionals in the newsroom. It will therefore be relevant to get the views of others, who were not subjects of this study to verify the findings. Because this is a case study, it will be difficult to generalise the findings of this study.

5.5 Conclusion

This study investigated how new technologies are affecting news gathering, processing and delivery at the newsroom of Ghana Television. The research provides information on the technologies that have been introduced by the state broadcaster. The study found that since the GTV replaced typewriters in its newsroom, computers have become part of the television news production cycle, particularly, since 2006 after the Geneva Convention. The process gradually replaced all equipment in the newsroom and trained news professionals to enable them work with the new technology. Newsroom professionals have since been using computer-based applications for the production and delivery of stories.

The process of introducing digital broadcasting began in 2010, when the GTV introduced Que series software and Z5 cameras. The process replaced the analogue processes of news gathering and production, however, news delivery is currently done both in analogue and
digital formats. The all-news channel (GBC 24) and the website www.ghanatvon.com broadcast all news items produced by the newsroom in digital format, however, the omnibus channel available to both analogue and digital television users, telecasts three major bulletins (2pm, 7pm and 10:30pm). The state broadcaster is set to complete the process of digital migration by switching off the analogue channel, but that will deprive analogue television owners’ access to GTV signals. As the June 2015 deadline beckons, it remains to be seen when the omnibus channel will be turned off to complete the digital migration.

Though reporters are pleased with the new setup for news gathering and production, the time spent downloading footage from the chip, is a major concern to both reporters and video editors. They claim if the chips could produce thumbnails of video footages, the time spent on producing stories will further reduce because both the video editors and reporters can easily identify footage needed for telling their stories.

There is generally a negative feeling among reporters and other news professionals interviewed, about how the station introduces technologies, often without wide consultations among end-users. In all departments there were lamentations of management ‘dumping’ technologies on the professionals. Others also complained about the absence of operating manuals of the equipment procured. Where possible, management must give copies of operating manuals to machine operators to promote ease of use.

The training that accompanies the introduction of innovation does not come in good time, therefore professionals cannot familiarise themselves with technologies before they become part of their operations. If management can introduce future technologies with the training ahead of integrating them into news production, the output could be better from the day of
implementation. This approach to introducing technologies can help minimise production errors that end up feeding into negative perceptions against the station. Generally, news professionals have learnt to use technologies introduced for their processes and there is a high level of satisfaction because the technologies have made their work easier. Video editors for instance, can now correct errors, whenever they are notified and it often takes minimal efforts to make such changes.

The state broadcaster which used to telecast all programmes, including two news bulletins on one analogue channel, now produces content for six out of its twenty one digital channels. It also serves as a host to fifteen television content producers. Again, quality of television pictures has improved remarkably. The pictures of all GTV digital channels are spotless and an refreshing to watch.

Despite successfully using technology to improve news gathering, production and delivery, there are still challenges with the Que series. The software sometimes fails to load during news bulletins. This means the news anchor cannot read the stories on the teleprompter. Though news professionals currently print all stories to prevent the news from ending abruptly, they want management to correct the defect because it is a major setback to fully using technology to deliver news. The situation makes it impossible to describe newsroom as paperless.

GTV has successfully integrated new technologies into news gathering, production and delivery, all the processes in the newsroom have improved with the introduction of new technologies. News gathering, production and delivery have all improved with the introduction of new technologies, despite the challenges listed by respondents.
5.6 Recommendations

The findings of the study make it imperative for the state broadcaster to fully implement the migration from analogue to digital transmission by the global deadline. The next stage of the state broadcaster’s digital migration, is to turn off the analogue signal by June 2015, as provided for by the International Telecommunication Union. GTV has not introduced any devices yet for analogue television users to receive signal when the switchover occurs. If the station is committed to introducing multi-skilling, it must begin training news professionals ahead of the due date. Training news professional in advance will ensure smooth transition when professionals take on new roles.

The technical production department needs to ensure proper diagnosis of equipment to enable them identify the causes of the continuous freezing of images on air. This will help rectify the gaps therein and ensure smooth transmission at all times.

It is also important for the state broadcaster to explore other funding sources including a more realistic television license fees to raise revenue to ensure that it can refit and retool at acceptable intervals to guarantee that equipment and technologies are not used until the parts are no longer available before they are abandoned.

Training for newsroom professionals must be a continuous process; this will ensure that in this era of rapid changes in technologies, news professionals keep up-to-date with developments in the industry. The growing number of television stations in the country today, makes it imperative for a comparative study to be conducted on how technology is affecting news gathering, production and delivery at the state broadcaster and another television
station. This will bring to the fore similarities and differences in approaches used for gathering, producing and delivering news content.

5.7 Chapter Summary

This chapter discussed the findings of the study, taking into account elements of the diffusion of innovation theory, the research questions and relevant literature. The conclusions and recommendation emanated from the findings of the study.
REFERENCES


APPENDIX A

INTERVIEW SCHEDULE

Objectives

To investigate what new technologies have been introduced in the last ten years?

How decisions on introducing new technologies are reached at Ghana Television. How decisions of adopting new technologies are communicated to end users.

What factors have influenced the introduction of new technologies at GTV?

What training accompanies the introduction of new technologies?

How have the new technologies changed news production process?

How have the new technologies changed roles on the newsroom?
APPENDIX B

INTERVIEWER SELF DISCLOSURE

Good day, my name is Kobby C.L. Gomez-Mensah, a student of the School of Communication Studies at the University of Ghana, Legon.

Thank you for the opportunity. I am conducting a research on how technologies are affecting work in the TV newsroom. This interview will help me complete my research for a master’s degree in communication studies. The topic for my research is how new technologies are affecting news gathering, processing and delivery: A case of Ghana Television.

All the information you provide is for academic purposes and will be treated as such. To help me remember your responses accurately I will record our conversation.

Thank you
APPENDIX C

POLICY QUESTION-MANAGEMENT STAFF

- What news technologies have been introduced in the newsroom over the last ten years?
- What is GTV’s editorial policy on introducing new technologies to news production?
- What informed GTV’s decision to adopt its current editorial policy?
- What steps were taken to seek the views of newsroom staff before the new technologies were introduced?
- What in your view was the primary reason why GTV introduced new technologies into the newsroom?
- To what extent has GTV achieved the objectives for which the new technologies were introduced?
- How has GTV’s newsroom arrangement changed in the last ten years?
- How has the introduction of the new technologies affected news production?
- What challenges did you encounter when the new technologies were first introduced?
- How does the current newsroom setting compare to the previous one? (Has the arrangement of chairs changed? Have the equipment changed? Have the processes changed?)
- What training were news professionals given before the technologies were introduced?
- What was the reaction of newsroom professionals when the new technologies were introduced?

Thank you for your time.
QUESTIONS FOR NEWS PROFESSIONALS

- What new technologies have been introduced in the newsroom over the last ten years?
- What is GTV’s editorial policy on introducing technologies to news production?
- What informed GTV’s decision to adopt its current editorial policy?
- What steps were taken to seek the views of newsroom staff before the new technologies were introduced?
- What in your view as the primary reason why GTV introduced new technologies into the newsroom?
- How has GTV’s newsroom arrangement changed in the last ten years?
- What challenges did you encounter when the new technologies were first introduced?
- How has the introduction of the new technologies affected news production?
- How does the current newsroom setting compare to the previous one? (Has the arrangement of chairs changed? Has the equipment changed? Have the processes changed?)
- In what ways have the introduction of new technologies affected work?
- What training were news professionals given before the technologies were introduced?
- What new roles have you taken since new technologies were introduced?
- What changes have occurred in you work since the new technologies were introduced?
- How has your reaction when the new technologies affected your work?
- How have the new technologies affected your professional competence?
• What are the changes in the equipment and tools you work with since new technologies were introduced?

• How in your view have the technologies affected other people’s jobs in the newsroom?

• What new roles have you assumed since the new technologies were introduced?

Thank you for your time.