

ASSESSMENT OF DIGITAL COMMUNICATION TECHNOLOGIES (DCTS) IN NEWSPAPER PUBLISHING IN NIGERIA

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Abstract

This paper, Assessment of Digital Communication Technologies (DCTS) in Newspaper Publishing in Nigeria, examines how DCTS have influenced newspaper publishing in Nigeria. The paper is anchored in the Technological Determinism Theory (TD) and Technology Acceptance Model (TAM). The paper identifies the forms of DCTS in newspapers to include e-mail, phone calls, instant messaging, video conferencing, video, blog, podcast, streaming, and online newspapers. This paper has shown that areas of usage of DCTS cut across newsgathering, news processing, and news dissemination. The effects of DCTS on newspaper publishing in Nigeria are identified to include time saving, better access to news material, fast and easy editing, better sound quality, and rise to a high productivity and efficiency at a reduced cost. The paper identifies the challenges associated with DCTS to capital intensiveness, epileptic power supply, poor network, and susceptibility to virus attack. The paper suggests that these challenges could be surmounted through improved power supply, robust antivirus installations among other things.

Keywords: Media, Publishing, Newspaper, Technology, Digital Communication

Introduction

The advent of digital communication technologies (DCTS) has, no doubt, influenced communication across the world. The coming of digital communication technologies (DCTS) has brought tremendous innovations in all spheres of mass communication (Anorue, Etumnu, Onyebuchi, Obayi, 2022). This fashion of communication, in the long run, represents a brand new epoch in the different facets of mass communication including print and broadcasting.

It is evident that the emergence of DCTS has impacted newspaper publishing. Several newspaper organisations commenced both print and online operation which make report of events more believable as readers can easily verify such reports, use of interactive features which allow audience to register their opinions about topical issues, provide photos and video clips to accompany news stories and advertisements, feature user-generated contents (Hassan, Azmi & Nasidi, 2019). DCTS have boosted the demand for information because they have become one of the most popular sources of news.

DCTS have no doubt informed digital transformation in numerous ways of information sharing and exchange. Turow (as cited in Hassan, Azmi & Nasidi, 2019) points out that newspaper

websites encourage their audiences to engage with the site in numerous ways. For example, you can email a reporter whose story you have read or join a community of readers to discuss particular news topic and create a blog around any topic you like. The rises of the Internet and other technologies have completely changed how news is produced and diffused (Hassan, Azmi & Nasidi, 2019).

DCTS have affected the whole process of newspaper publishing in Nigeria. Purveying information is the cardinal focus of newspapers. Therefore, it is going to no longer be an exaggeration to mention that the radical adjustments introduced in the realm through DCTS revolution are certain to affect the newspaper more than every other industry (Ezugwu, 2011). The adoption and absorption of DCTS are being executed in the newspaper industry by using bringing efficiencies in all the purposeful wings including newsgathering, production, editorial and advertising if you want to gain aggressive gain.

All over the world, newspaper publishing is affected by changes brought about by the changing times, changes in socio-cultural traits in different societies, demographic changes which

inform new audiences' taste for news, economic challenges, advent and application of DCTs (Jones & Salter, 2012). Nigerian newspapers are part of the world's press ecology; hence they are not insulated from these global trends.

There are a number of studies globally including Nigeria on the influence of ICTs and DCTs on journalism. For instance, Patel (2010) did a study entitled "the Survival of the Newspaper in the Digital Age of Communication in America." Zangana (2017) carried a study entitled "the Impact of New Technology on the News Production Process in the Newsroom Iraqi--Kurdistan."

Furthermore, Omenugha (2019) did a study entitled "media management and disruptive technology: The Nigerian newspaper industry. Despite the evidence of existence of research works on the effects of DCTs on the mass media and journalism, there appears to be a dearth of studies investigating the effect of the phenomenon on newspapers in Nigeria going by the literature reviewed.

Against this background, one could, therefore, consider the Nigerian newspaper industry as one whose peculiar experience desires to be examined vis-à-vis the use of DCTs on its publishing process. Thus, the current study seeks to fill this gap by probing the extent to which DCTs has affected newspaper publishing in Nigerian newspapers with specific focus to: 1. Identify the forms of DCTs used in newspaper publishing in Nigeria, 2. Determine the areas of usage of the DCTs in newspaper publishing, 3. Establish the effects of the usage of DCTs on newspaper publishing in Nigeria, 4. Ascertain the challenges associated with DCTs application in newspaper publishing in Nigeria.

Conceptual Review

Digital Communication Technologies

It is incontrovertible to contend that DCTs have evolved to become a critical phenomenon in human life. The world is in the midst of digitisation (Norwegian Ministry of Foreign Affairs, 2020). The place of DCTs in the contemporary society cannot be over-underscored. The advent of the DCTs has marked a tidal wave of revolution in the 21st Century (Nguyen, 2017). The use of digital technology facilitates the coverage of computer, telecommunication, audio and visual and consumer electrical and electronic gadgets.

Digital communication is perceived differently. Digital communication, which refers to any form of communication taking place through technology and electronic mediums, has marked a tidal wave of revolution in the 21st Century (Nguyen, 2017). It can be simply put as an electronic exchange of information (Kaul, 2012). Digital communication is the physical transfer of data over Point-To-Point or Point-To-Multipoint communication channel.

Digital communications and information systems infrastructure comprises a variety of communication and computation systems which provide the transmission, processing and storage of digital information. This includes: (i) legacy and fibre-optic cable networks; (ii) mobile, satellite and wireless networks; and (iii) data storage and processing centres (Oughton, Tran, Jones & Ebrahimi, 2018).

DCTs infrastructure in newspaper is composed of a variety of new communication systems which provide the gathering, processing, transmission, storage, and retrieval of information. DCTs are a tool for renewal, simplification and improvement that must be incorporated into the approach of transformation (Norwegian Ministry of Foreign Affairs, 2020). The potential of DCTs in facilitating information technological transformation and eventually development should no doubt be good news.

Newspaper Publishing

The emergence of newspapers has changed the way people exchange ideas. Newspaper publishing provides an efficient and effective way through which knowledge and information are produced, shared and stored. Nielsen, Cornia and Kalogeropoulos (2016) note that the advent of the newspaper helped to increase the level of knowledge and engagement in the population, while holding people accountable for their actions through reporting.

There are social factors influencing journalism. "Throughout the twentieth century as politics, economics and technology changed, journalism changed as well" (Anderson, Downie & Schudson, 2016, p.162). In this context, Griffiths (2015) argues that the new technology is an essential element of the requirement of the contemporary newspaper production and this aspect has become a great part of the contemporary system of journalism. Hence, technology changes have impacted the content

and the form of newspapers and also affect the professional practice of the journalists within their everyday environment.

The DCTs evolved newsgathering, processing, and dissemination. Jones, Layer and Osenkowsky (2013) contend that digital workflow provides media managers with the capacities to manage news production practices. Particularly, through digital integrated media technologies like digital cameras, smartphones, email services, lightening tools and audio mixers journalist can communicate scenarios to the news crew in the news control room, bringing speed to information dissemination to the audience.

Moreover, these new approaches provide journalists with more flexibility to work, manage their responsibilities, and conveniently conduct their media practice. New media technologies provide benefits for media managers within the newsroom, including in newspaper production management workflow. Hence, the digitisation of the newsroom offers innovative approaches to the production, dissemination and storage of news product as well as management practice. These innovative approaches make the news reporting task easier and more efficient, so that the news production workflow is simpler and more manageable (Booth, 2016).

Literature Review

Mass Media and Digital Communication Technologies (DCTs)

Journalism is changing because of advances in media technology and newspapers around the world are undergoing transformation. Some people—including journalists—have predicted the demise of the newspaper as we have known it for decades. With the development of the Internet in the late 1980s came a new phase in global communication and a new approach to journalism and the aggregation of news (Onuma, 2018).

The Internet has redefined news gathering and distribution, blurring the boundaries in terms of access by both givers and receivers of news and information. With the ease and unrestricted access that the Internet offers and the ever expanding platforms for sharing news and information, many traditional newspapers have joined the race for visible online presence (Onuma, 2018). Beyond the need for digital presence and the desire to respond to the changing habit of readers, newspapers have also found the digital platform

appealing, considering that they do not have to worry about such problems as printing and distribution costs associated with traditional newspapers.

Digital media provides rapid access to information especially breaking news. Groups or interests that feel marginalised by the traditional media see online media as a wonderful opportunity. The new digital environment is also redefining the role of the media as the Fourth Estate and the purveyors of democracy (Nmodu, 2013). Some journalists say that DCTs have enhanced the quality of their work.

There is no such thing as the news industry anymore. The Internet has redefined journalism and journalists need to get used to the New Media World Order (Anderson, Bell & Shirky, 2014). There used to be one, held together by the usual things that hold an industry together: similarity of methods among a relatively small and coherent group of businesses, and an inability for anyone outside that group to produce a competitive product.

Theoretical Framework

After reviewing theories that are related to the work, two theories are selected to anchor the paper on, particularly the Technological Determinism Theory (TD) and Technology Acceptance Model (TAM).

Technological Determinism (TD) Theory

TD theory was propounded by Marshall McLuhan in 1962. According to Singh and Peer Drew (2023), technological determinism is the idea that technology shapes social change. It determines our future. Technological determinism believes that advancements in technology are the moments that bring on each new phase in human history. Like Neil Postman, those who strongly maintain this view, see generation as the idea or the figuring out force of all human endeavours (Omenugha, 2015).

The theory is not bereft of criticisms. Singh and Peer Drew (2023) enumerate some of the criticisms to be that of the reduction of a complex, multilayered phenomenon to a neat, oversimplified narrative. Like environmental determinism, technological determinism overlooks the role that human free will plays in the use of technology.

The effects of DCTs may be perceived as a technological advancement of society this is sure to manifest time beyond regulation. This could be visible as a technological development of society. The utility of the DCTs in newspaper publishing is shaped and inspired by the technological breakthroughs of the moment. The influence of DCTs on publishing in newspaper organisations in Nigeria is determined by the technological advancement of the moment. This explains why Nigerian newspaper organisations are integrating different DCTs such as web edition, e-edition, podcast, Facebook, e-mail and other devices in publishing.

Technology Acceptance Model (TAM)

Originally proposed by Fred Davis in 1985 as a doctoral thesis at the Massachusetts Institute of Technology, current literature indicates that TAM is a highly cited model. Chuttur (as cited in Mugo, Njagi, Chemwei and Motanya, 2017) argues that the wide acceptance of TAM is based on the fact that the model has a sound theoretical assumption and practical effectiveness.

The output from the adjustments was a more refined model essential for anyone willing to interrogate the theory around technology acceptance and its utilisation in learning. The model has been designed to show how users come to accept and use a technology (Mugo, Njagi, Chemwei & Motanya, 2017).

The theoretical basis is built on the premise that when users are presented with a new technology, three major factors influence their decision on how and when they will use it. The first determinant is its perceived usefulness (PU), the second is the perceived ease of use (PEOU), while the third determinant is user attitude towards usage (ATU). Davis (as cited in Mugo, Njagi, Chemwei and Motanya 2017) perceived usefulness (PU) is the degree to which a user believes that using a particular system would enhance his or her job performance. On the other hand, perceived ease-of-use (PEOU) is the degree to which a user believes that using a particular technology would be free from effort.

This theory appropriately applies to this work that traces the use of DCTs and in the business of newspaper publishing. The acceptance and adoption of DCTs in newspaper publishing is based on how useful they are perceived. It is also relevant in the aspect of the

perceive easiness of the application of the technology. The publishers of Nigerian newspapers may resort to the use of DCTs in publishing as a result of their perceived usefulness (PU), the ease of use (PEOU) of the DCTs, and their attitude towards usage (ATU) the DCTs.

Methodology

The paper relied on a methodology to present its argument. The methodology of the study centered on the literature review, concept development, and critical analysis to expose the dynamic nexus between DCTs and the newspaper industry in Nigeria.

Newspaper Publishing in Nigeria and DCTs

The new media's emergence in Nigeria is rooted in the revolution in the Nigerian telecommunication industry traced back to the enactment of Act 75 of 1992 that established the Nigerian Communications Commission (NCC). The NCC is a technical body that regulates telecommunications in the country; a responsibility hitherto shouldered by a government ministry known as the Ministry of Information (Emerah, Oyedele & David, 2013). The NCC Act has also enabled the body to fully deregulate the sector, allowing for active private sector participation.

The impact of the deregulation of the sector was immediate and transforming. It led to a "phenomenal degree of telephone and internet penetration" in the country (Jawah, 2011, p.3). In 1996, NCC licensed the first internet service providers (ISPs) in Nigeria. By January 1997, Linkserve Limited commenced operations became the very first internet service provider in the country.

As it stands today, the traditional newspaper industry in Nigeria appears to have fully embraced the new media. National dailies and other less prominent newspapers now publish online. Their online versions are updated round-the-clock and social media platforms and mobile technology enable these contents to be widely shared. Thus, what the newspapers cannot achieve with their hard copies in terms of news timeliness and speed, they make up for with their online versions. Even many of the newspapers that do not publish daily in hardcopy now leverage the Internet to ensure that they are read daily (Okorie, 2017).

Today, Nigeria newspapers have online versions of their newspapers that break news. According to Haruna (2010), *ThisDay* newspaper was the first newspaper in Nigeria to introduce full-colour printing from its own presses in 1997. It is also the first newspaper in Nigeria to use satellite-enabled networks to print simultaneously at three printing plants, in Lagos, Abuja, and Agbor, ensuring that the newspaper offers the same breaking news, on the same day, at the same time, across the entire country. Many others have followed the lead enhancing the aesthetic beauty of Nigeria newspapers.

Also, *The Punch*, *The Nation*, and *Vanguard* newspapers use computer-to-plate (CTP) machines. These machines eliminate negatives for plate making; the planned pages are sent through the Internet to the computer room for final quality check and input, and thereafter sent directly for digital plate making. There are some newspapers publishing houses that use robots for carrying newsreels, some use digital printing machines which perform several functions such as self-loading of news reel, printing, cutting, collating, counting and arranging newspapers.

Today, most of the widely circulated national newspapers in Nigeria, especially *The Sun* and *The Trust* newspapers, are moving to complete digital page assembly and streamlining workflow processes, while ensuring improved quality of newspaper. Salman, Ibrahim, Abdullah, Mustaffa and Mahbob (2011, p. 7) posit that “new communication technology has greatly improved the production of the online newspaper, causing it to be fast, colourful and borderless.

Simultaneous printing has revolutionised the printing and distribution of print newspapers in Nigeria. Digital technologies allow formatted pages of a newspaper to be uploaded at the head office and downloaded at distributed printing presses located in different parts of the country where the same edition of newspaper is printed simultaneously (Geetika & Tripathi as cited in Emeka, 2016). In times past, most of the newspapers had only one printing press located at the head office. From there, they transport printed newspapers across the country mainly by road. The process was tedious, costly, and time consuming. Newspapers get to only cities that could be accessed within a limited time and many cities in Nigeria read newspapers 24 hours late.

To be first on sale with the latest news is the goal of every news medium, and to achieve this news organisations need speed and accuracy

in delivering their reports, this can be done through the use of the social media. For instance, Twitter is very handy when breaking news is to be reported, after that the conventional media takes over from there. Online newspapers are also enjoying the advantages of convergence, that is, the merging of varied strategies being into one platform (playing with video, text and graphics etc.) (Ani, 2015).

Forms, Areas of Usage, Effects and Challenges of DCTs in Newspaper Publishing in Nigeria

DCTs come in different forms and are applied at different stages in newspaper publishing.

Multimedia form of journalism has a new dimension to news gathering, news processing and news distribution (Guanah & Ojo 2018). DCTs which are in a variety of forms have brought great convergence to newspaper publishing. Sarokin (2015); Davis, Deil, Rios and Canche (2014) identify the forms of DCTs in newspaper publishing to include email, the Internet, web blogs, social blogs, micro blogs, wikis, podcasts, photographs, streaming audio and video, chat rooms, online communities, and web advertising, and the use of cellphones for newsgathering.

In the areas of the usage of DCTs in newspaper publishing, it could be argued that it perhaps cuts across the entire value chain of newspaper publishing. According to Talabi (2011), as DCTs changed the face of communication, journalists are beginning to have a new way of getting, packaging and disseminating news to the public. He further submits that DCTs are pushing journalists to learn how add content to a web site, blog and create hypertext links, leading journalists to basically know photographic skills such as how to take digital pictures and upload them to a computer or add them to a blog and website. Internet has made it easy for journalists to research on any subject.

The effects of DCTs are manifest in a number of ways. According to Hasan (2013), this universal interconnected network of audio, video and electronic text communications has blurred the distinction between interpersonal and mass communication and between public and private communication. Statistica (2017) identifies more of the effects to include faster and easier, economy of paper, longer times storage of

messages, cheaper, better access to news material, immediate access to all audio and video, simultaneous and multiple use of audio and video, fast and easy editing, better sound quality, and others.

Still, cost is one of the immediate impacts of ICTs on news gathering, as the cost of gathering news has drastically and significantly reduced with the advent of information and communication technologies. Mugo (2006) is of the view that the telephone has bridged the time between the reporter and the source, reporter and editor, saving costs such as travel logistics as news can be reported from any location and at any given point in time. New technologies enable increased mobility for field reporters in Nigeria, and ensures regular updates and keep the public well informed, to the extent that. Texts, videos, photos and podcasts can now be sent from the spot and in view cases emailed to or uploaded into the headquarters' server from thousands of miles away (Olaito, 2016).

There are advantages associated with the use of DCTs. Adamu (2008) lists the advantages derivable from digitisation in the mass media to include "better access to news material, immediate access to all audio and video, simultaneous and multiple use of audio and video, fast and easy editing, better sound quality, and no use of tape or transportation of tape. All these, he says, means new methods of newsgathering, new production methods, new programme formats, new information channels to audience and staff re-organisation.

The advantages of DCTs are further identified. Statistica (2017) identifies the advantages of digital communication to mean: Being fast and easier, economy of paper, the messages can be stored in the device for longer times, without being damaged, unlike paper files that easily get damages or attacked by insects, digital communication can be done over large distances through internet and other things. It is comparatively cheaper and the work which requires many people can be done simply by one person as folders and other such facilities can be maintained. It removes semantic barriers because the written data can be easily changed to different languages using software and it provides facilities such as video conferencing which save a lot of time, money and effort.

There are some challenges associated with the use of DCTs in newspaper publishing.

The technology is capital intensive in when it comes to the issue of the technical knowhow required to build a web site, access a server space, or publish any information, Also, speed of access also limits the ability of the Internet to be a channel for all forms of media, the epileptic nature of electricity supply can hinder the smooth work of journalists using technologies (New Media Book Project, 2016). More of the challenges are enumerated. Olise and Tebekaemi, (2014), mention the challenges of DCTs in newspaper publishing to include poor network functionality, the high cost of services and the inability of telecommunication service providers to cover the length and breadth of the country (Nwanne, 2016). The high cost of the media technologies, especially sophisticated phones and equipment suitable for journalism practice, is a challenge to journalists and the journalism profession.

Conclusion

It is observed that DCTs are in the forms of video conferencing, video, blog, podcast, streaming, which are not well utilised as email, phone call, instant messaging and online newspapers. The usage of DCTs in newspaper publishing cut across newsgathering, processing, and dissemination. The effects of DCTs on newspaper publishing in Nigeria are identified to include time saving, better access to news material, fast and easy editing, better sound quality, and rise to a high productivity and efficiency at a reduced cost. The challenges affecting DCTs in newspaper publishing are identified to include capital intensiveness, epileptic power supply, poor network, and susceptibility to virus attack.

Recommendations

The study made the following recommendations:

1. Publishers of Nigerian newspapers should improve on the use of other forms of DCTs such as video, podcast, streaming, and others.
2. Management of newspaper organisations should invest more in electricity supply for optimum productivity.
3. Journalists should endeavour to install antivirus to avert incidents of virus susceptibility.
4. Telecommunication service providers should boost and enhance their network to make more robust and expansive for efficient DCTs publishing.

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