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An assessment of the economic morality of digital communication technologies in the US and Ghana

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ABSTRACT

Digital communication technologies play important roles in modern communication, and this study explores the concept of "economic morality" in the digital communication systems of two economically disparate jurisdictions: the US and Ghana. Two theories; Technological Determinism and Diffusion of Innovation, provide the context and framework for the study. Secondary data was obtained to study trends in the digital communication systems in the media industries of the two countries and also in their health, agriculture and finance sectors. The study shows marked differences in the adoption and active use of digital communication technologies in the two countries with the US showing more advanced capabilities and usage. Also, the universality and equity in the adoption of digital technologies in the US are more pronounce than in the Ghanaian case signaling superior moral economy of digital technologies in the US. The study also concludes that a global drift towards very advanced digital communication technologies is driving a system globalization, and we argue that the globalisation induces a 'pull factor' that may draw under-developed countries such as Ghana into a digital environment at a cost that can be prohibitive.

Introduction

Digital Technologies

The growth of digital technologies has had various implications for mass media growth and influence (Hongcharu, 2024). From an era of very high influence of traditional mass media channels such as newspapers, television, and radio, new media have today revolutionized the ways in which information is disseminated and received (Wang et al., 2014).

An era of tremendous new media growth has introduced technologies such as the Internet, World Wide Web, social media, news blogs, newspapers, TV, and Radio (Sundar and Limperos, 2013). While the same media technologies have been adopted in low, middle- and high-income economies with different economic cultures and norms, there is the assumption that their impact in terms of the economics of the media are likely to reflect the variations in economic cultures and norms in the various jurisdictions (Fuchs, 2015; Flew & McElhinney, 2006).

Digital technologies are generally described as information recorded in binary code that enables large tranches of information to be converted in forms through a technique of compression to enable preservation, portability and easy transfer (Schafer, 2003). Media organisations have been one of the major beneficiaries of modern digital technology as digital media technology has changed the way information is packaged and disseminated (Arisanty, Wiradharma, & Fiani, 2020). In many facets of media use, there is strong emergence and in some cases dominance of digital content (Ong and Toh, 2023). New media presents some of the forceful representations of digital technology as expressed in forms such as the Internet, CD, World Wide Web, Social Media Wikis and Podcasts (Flew, 2007).

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Emergence of the Internet

Digital technologies in contemporary times are largely defined by the Internet, and both the US and Ghana, digital systems in sectors such as the mass media, finance and health have been significantly influenced by the Internet and the related technologies (Huang and Sun, 2016). The Internet, a global network of computers, has become a common denominator of technological growth across the globe and brought massive transformation to mass media (Küng, Picard, & Towse). From a small computer net in University of California, Los Angeles (UCLA,) the internet has become a phenomenal network of networks, and its importance in social, economic, cultural and political life continue to attract tremendous research (Leiner et al, 2009). There is very little doubt that the Internet is significantly changing the world – perhaps has dramatically changed the world and it is obvious that even in under-developed or developing economies with poor internet infrastructure and serious human resource constraints the Internet is exerting a very strong influence on lifestyles (Bagchi et al, 2015).

The World Internet Project is dedicated to studying how the Internet is changing the world. The initiative which continues to expand in scope linking national teams together to share findings has so far made some impressive findings as to how the Internet is changing the way we live (Cardozo, Guo and Tiago, 2013).

Internet Penetration

Globally, internet penetration stands at about 67.1 percent with percentage of internet access in homes rising from 53 percent in (Petrosyan, 2024). In its 2023 Report, the International Telecommunications Union noted that there were significant disparities in internet use across the globe and this has development implications for low-income economies (ITU, 2023).

The Report notes further that broad connections remain the dominant form of internet connectivity for homes, and offices as compared to mobile internet connections, however, this dominance is not expressed in low-income economies where because of high cost of broad band connections, only one in 100 internet connections is fixed broad band connectivity [ITU, 2023].

The Report explains that while fewer people are connected to the Internet in low-income economies, there is also lesser time spent on the Internet in these economies because of the cost implications.

Moral Economy

As an economic philosophy, the concept of a moral economy is grounded in a system of justness, equity, and goodness (Sayer, 2000). The concept of moral economy is traced to several scholars including Jean-Jacques Rousseau who in 1775 referred to the obligation on government to improve public and private livelihood by instituting systems that ensure balance and equity (Rousseau, 2024); and James Bronterre O'brien who in his criticism of capitalism noted that moral economy had been relegated in preference for a culture "incessant production and accumulation" (Bronterre, 1837). Some scholars and commentators, such as Kant (1785) and Jerusalem (1774), referred to moral economy with interpretations that spanned from social interest, equity, and morality.

More contemporary scholars such as Edward Palmer Thompson began to conceptualise Moral Economy in simpler terms describing it as an economy that resists rogue market activities such as conversion of common land to individually held plots, growth of protectionism and exploitative and unfair price hikes that left many peasants in starvation and drew the ire of rioters in the 1795 food riots (Thompson, 1963; Thompson, 1971). But Thompson's conceptualization of Moral Economy has been criticized by scholars such as Gotz (2015), who describe it as too narrow. Gotz (2015) dismisses Thompson's view that Moral Economy is simply the preservation of the economic rights of the masses, often in low economic strata, rights that hinge on some elements of protectionism and fair pricing. For him, Moral Economy should go beyond the historical and social context inspired by the 1795 crisis that Thompson essentially places it in.

Again, he criticizes the solely moralistic approach to defining moral economy, and argues that "the most promising current approaches appear to be those that consider the moral economy of welfare, humanitarianism, and civil society" (Gotz, 2015, p147). An economy's morality should be expressed in its ability to support all, so that the less privileged can still live equitable lifestyles and the more privileged do not live disproportionately affluent lifestyles (Gotz, 2015; Friberg & Gotz, 2015). Contemporary scholars therefore seem the affirm the view that moral economy as an economic system operates where there is obligation by stakeholders to ensure that economic systems and policies guarantee equal opportunities for all and emphasize a system of fairness in based not on moral obligations and social norms, but also on a pursuit of the ethos of humanitarianism, positive advocacy and general wellbeing of all citizenry (Gotz, 2015; Thompson, 2019).

Moral economy of digital communication technologies

In this study we reflect on moral economy within the context of contemporary digital communication technologies. Moral economy of digital technologies and in this precise study, digital communication technologies is a new concept we intend to propagate to stimulate reflections on how digital communication technologies should be made universally available to help promote better global integration to enhance human development. We conceptualise digital technologies as an economic imperative that should drive change and growth and

improve the livelihoods of people.

The growth of new media technologies has tremendously impacted global development (Locksley, 2009; Pratt, 2000) and we argue that in a digital sense, moral economy encompasses the ability of new digital technologies and systems to foster a culture of access and usage of digital technologies for a common end – improved lifestyles and standard of living.

Equity in the adoption of digital media technologies reflects contrasting trends; the variants as expressed in the Innovators, Early Adopters, Early Majority, Late Majority, and the Laggards present the contrasts (Rogers, 1983; Garcia-Aviles, 2020). One may argue that the extent to which moral economies are reflected in digital technologies depends on the core indicators such as infrastructure, policy, proficiency, and literacy.

Digital Economies of the USA and Ghana

The USA digital economy is estimated to have generated $3.70 trillion in current-dollar gross output in 2021, an increase from the 2020 figure of $3.30 trillion, representing about a 10 percent gross output growth (Highfill and Surfield, 2022). Highfill and Surfield (2022) note that over five years (2016 – 2021), gross output averaged 5.6 percent, which was significantly higher than the overall economic growth of the US economy of 1.9 percent over the same period. The annual growth rate for real gross output averaged 5.6 percent between 2016 and 2021, much faster than the overall economy's growth of 1.9 percent over the same period. Priced digital services accounted for 43.1 percent of total gross output, which was the largest activity in the digital economy. In second and third were Infrastructure (31.5percent) and e-commerce (25.4 percent) respectively (Highfill and Surfield, 2022).

Ghana's has also made significant gains in the bid to attain high levels of digital inclusion to drive the growth of the economy (Adika, 2024; Kemp, 2025). According to Yawson & Mahmoud (2024), Ghana's digital economy is currently valued at about USD One billion and may reach USD Five billion by 2030. Yawson & Mahmoud 2024 note further that digitalization in Ghana is primarily driven by the Service sector, which contributed almost 46 percent of the country's GDP in 2021.

Ghana's quest for digital transformation is expressed in the country's elaborate policies designed to attain higher levels of digital inclusivity (Adika, 2024; Kemp, 2025). In terms of industry estimates, the two top sub-sectors in the Ghanaian digital markets are digital infrastructure, including data centers, fiberoptic cables, etc., estimated at $400 million, and software sales estimated at $ 200 million (International Trade Administration, 2022).

Objectives

The objectives of the paper are in two-fold:

- To study the extent of use of digital communication technologies in the mass media industries in the two countries and other sectors such as health, finance, and agriculture. We explore this objective by focusing on data that examine issues such access to digital news products and services in the mass media; the growth of online news services and the digitilisation of health, financial and agricultural services in the countries studied.
- To establish how contemporary digital communication technologies, reflect a system of justness and equity in access and use of digital communication technologies. We explore this objective by exploring data on the comparative usage in the two countries particularly relative to how digital technologies have fostered change in the countries studied to establish whether prevailing systems and policies are geared towards ensuring equity and fairness in the deployment and adoption of digital communication systems in the two countries studied. In this comparative analysis of secondary data we emhasise issues such as universality and affordability of digital communication systems as indicators of justness and fairness of digital communication technologies.

Problem Statement

Access to modern digital technologies is considered very critical to promoting development in various sectors such as the media, finance, health and agriculture (Bilan et al, 2019). However, issues of affordability, ICT literacy and technology availability and adoption pose significant challenges with issues related to inequitable access and uneven use of modern communication technologies raising questions about the economic morality of digital communication technologies (Onoja et al, 2022).

Concerns about the disruptive impact of modern digital technologies on traditional forms of communication, particularly, in the mass media industry also provide an entry point to exploring the potential impact of new media technologies on equitable access to quality information in both traditional and new media channels (Godwin, 2023).

Literature Review

Related Studies

Moral economy of digital technologies

The strong emergence of digital technologies has spurred research in analyzing the economic morality, so to speak, of digital technologies. Relating the concept of moral economy to digital technologies is a quite novel concept that first appeared in a paper presented by Appiah and Nkrumah (2016) at the Society for the Advancement of Socio-Economics (SASE) International Conference held at the University of California – Berkeley.

Appiah and Nkrumah (2016) noted that "while current

media technology advances and adoption have had positive impacts on media economics on social welfare, development outcomes and labor market efficiency in many advanced countries, there is somewhat limited evidence in many developing countries including Ghana."

As perhaps, the one of the pioneering scholars in relating digital technologies to the concept of moral economy, and directly emphasizing the need for morality of digital communication technologies, Appiah and Nkrumah (2016) also argued that "advances in digital technology alone cannot serve as the "quick fit" for development of media economics in Ghana and many developing economies. Thus, careful impact evaluations of media technology on contemporary media economics are required to better understand their impacts on media economic growth in Ghana."

But long before Appiah and Nkrumah (2016), Dan Schiller in his book Digital Capitalism had proposed the Concept of Digital Capitalism and explained its nature and impact (Schiller, 1999). Schiller was clear in identifying the Internet as a tool that had metamorphosed from its initial purpose of linking academic institutions, government agencies and military units to becoming a viable tool for the corporate world, subject to liberal market forces and policies, driving growth of transnational companies and creating social inequalities (Schiller,1999).

Subsequently, other scholars such as Elder-Vass (2018), have noted that social theory have been slow to respond to the growing dominance of digital technologies in everyday life and argue for a rebalancing of the economic forces brought by the digital forces through a system of norms and values that drive the concept of moral economy. Indeed, Elder-Vass (2015) had earlier alluded to the moral economy of digital gifts that was primarily restricted to the values and norms that guided the distribution and receiving of free digital services and content online.

While there has been some other significant research in the area, they all fail to appreciate explore the issue of potential imbalances produced by digital communication technologies from Third World perspectives, yet, such an exploration is critical to evaluating the real nature of such imbalances, their evolution and the practical impact on development of various economies, if indeed found to be pervasive as detailed by Schiller (1999).

Roughly a decade after exploring the concept of the Moral Economy of Digital Technologies, we revisit the topic in more detail and within more contemporary lenses and data, and explore the gaps that exist in appropriately conceptualizing the concept of morality of digital technologies to help tease out critical themes that will provide foundation for understanding the impact of digital communication technologies on development and advancement of societies.

Theoretical Framework

Two theoretical approaches will provide a theoretical context for the study. They are: Technological Determinism and Diffusion of Innovation.

Technological Determinism

Technological Determinism is traced to scholars such as Karl Marx and assumes the view that technology determines how life is lived (Chandler, 1995; Chandler, 2020). In economics, this is known as a 'technology-push' theory rather than a 'demand-pull' theory" (Hottie, 2023).

The technological determinist view is a technology-led theory of social change: technology is seen as the prime mover in history. In economics, this is known as a technology-push theory rather than a demand-pull theory. According to technological determinists, particular technical developments, communications technologies or media, or, most broadly, technology in general are the sole or prime antecedent causes of changes in society, and technology is seen as the fundamental condition underlying the pattern of social

organization (Chandler, 1995, p 4).

This study explores the fundamentals associated with this view within the context of digital media technology. To what extent does new media technology influence life patterns in the countries studied?

Diffusion of Innovations

Rogers (1983) explains that the theory is about how new ideas, technologies are communicated through various channels in social systems over time. There is emphasis on four elements of the theory, technology/ideas/innovation, time, channels and social systems/societies. Central to the theory has been the course of innovation and adoption of technology relative to different societal groups over a time frame (Rogers, 1983; Garcia-Aviles, 2020).

One of the most researched areas of the theory is the classification of the adopters: Rogers (1983) identifies five groups or categories of adopters. They are (1) innovators, (2) early adopters, (3) early majority, (4) late majority, and (5) laggards (Rogers, 1983).

Social structure, nature of networks, influence of opinion leaders and economic status of individuals have been found to be an important determinant of the Diffusion of Innovation (Burt, 1973; University of Twente, n.d.).

The information flows through networks. The nature of networks and the roles opinion leaders play in them determine the likelihood that the innovation will be adopted. Innovation diffusion research has attempted to explain the variables that influence how and why users adopt a new information medium, such as the Internet. Opinion leaders exert influence on audience behavior via their personal contact, but additional intermediaries called change agents and gatekeepers are also included in the process of diffusion (University of Twente, n.d., p 10).

Study Approach

This is a qualitative review and will address the topic from the analysis of relevant data and documents. We rely primarily on secondary data to explore the issue in four critical areas: mass media, finance, health, and agriculture.

We analyse the digitization of communication and other communication-related activities in the mass media, finance, health, and agricultural systems. We focus on understanding how digitization has transformed processes and activities in these systems and attempt to establish theoretical perspectives to help us understand the evolution of these systems as driven by the digitilization of inherent communication processes and practices.

We purposively select and compare two markedly distinct jurisdictions in terms of economic and technological development: Ghana and the USA, to help us effectively understand how gaps in economic and technological development help to appropriately conceptualise the moral economy of digital technologies in our contemporary world.

Limitations of Study Approach

This study relies solely on secondary data, thus, is unable to address in an exhaustive manner, some specific details required to attain all the desired outcomes of the research. Although, as much as possible, relevant data was sought to help address the research objectives, some of the data was quite broad and lacked the levels of specificity to generate more precise results. Also, some of the data were not very current and thus created an impression of inadequacy in some cases.

Findings

The Mass Media and the Internet in Ghana

The Ghanaian mass media industry has been characterized by plurality and independence following the promulgation and the adoption of the 1992 Ghanaian Constitution. Many contemporary Ghanaian communication scholars laud the country's strides coming from brutal eras of military dictatorship that stifled the press and even hampered journalism education. Over the years, the media has witnessed impressive evolution with press freedom and independence as cardinal hallmarks of the Ghanaian media. According to the 2023 Afrobarometer Report, there were about 121 television stations, more than 500 radio stations, and a handful of daily newspapers. The Ghanaian media space is dominated by the electronic media, with radio having the dominance (Twum and Mensah, 2023). According the Afrobarometer Report, news access and consumption patterns reveal that an overwhelming percentage of 80 percent of respondents listen to radio daily for news with another 12 percent listening a few times or less than once a month (Twum and Mensah, 2023). For television, 71 percent reported watching TV daily news with 12 percent watching a few times or less than once in a month (Twum and Mensah, 2023).

About 49 percent of respondents reported never accessing social media for news. However, 43 percent said they obtained their daily news from social media, and seven percent a few times or less than once in a month (Twum and Mensah, 2023). For the Internet, 51 percent indicated that they never accessed news from the Internet, while 42 percent indicated that they accessed news from the Internet daily with seven percent indicating that they accessed Internet news a few times or less than once in a month (Twum and Mensah, 2023).

Newspapers were the poorest performers with a whopping 83 percent indicating that they never accessed news from newspapers with six percent indicating that they accessed news daily from newspapers while 10 percent indicated that they accessed news from newspapers a few times or less than once in a month (Twum and Mensah, 2023). In Ghana, Internet penetration as of January 2024 was estimated at 70 percent, and there are indications of the rapid increase in Internet use over the years, considering that in 2015, internet penetration in the West African country was only about 19 percent (ITU, 2015).

The chart below shows the various mass media channels used by Ghanaians and their relative preferences in the year 2022. Radio is the dominant in all category of users and Newspapers are the least patronized media.

Internet Access

Ghana's mobile cellular subscription as of 2023 was 98.8 subscriptions per 100 inhabitants (ITU, n.d.i). Comparatively, the US in 2023 had 112 subscriptions per 100 inhabitants (ITU, n.d.j). According to a survey by the National Communication Authority (2023) about 80 percent of individuals, above teenage owned a functional mobile phone. The survey also established that "on average, more individuals own basic phones (47.9%) and smartphones (46.1%) as compared to feature phones (12.8%)." The survey indicated about 40.8 percent of individuals use mobile money (National Communication Authority, 2023).

Mobile Internet represents the most reliable form of

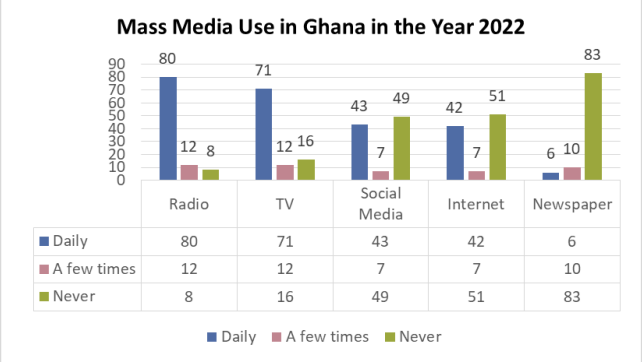

Fig 1: Mass Media Use in Ghana in 2022
Source: Twum and Mensah, 2023

internet access for many Ghanaians (Adika, 2024). Data estimates that many people access their Internet from mobile devices and by the beginning of 2024, around 70 percent of mobile connections in Ghana were broadband ranging from 3G to 5G (Adika, 2024).

Ghana is reputed to have one of the inexpensive mobile data prices in Africa (Sasu, 2025a). As of 2023, it was estimated that the average cost of one gigabyte of mobile internet in Ghana was 0.4 and on average, the cost for one gigabyte (GB) of mobile internet in Ghana stood at 0.4 U.S. dollars with cheapest rate being 0.08 US dollars and the most expensive being 0.08 US dollars (Sasu, 2025a). Yet, Ghana has a serious challenge with access to 5G Internet technology, with less than 20 percent of the population having access to 5G as it is estimated that by 2030, only 19 percent of the internet population will have access to 5G Internet (ITU, n.d.g).

Dominance of Online News Media

In the area of news media, online news media continues to upstage traditional media outlets, and that has continually affected the growth of traditional media channels, particularly the newspapers, and about 43 percent of Ghanaians use the Internet for news (Twum and Mensah, 2023). In Ghana, digital technology's effect on newspapers is expressed mainly in the emergence of a multiplicity of radio stations spurred by modern digital technology (Sasu, 2025b). The erratic emergence and folding up of what have been described as "cottage newspapers" makes it difficult to determine the real number of newspapers in the country (Frimpong, 2020). However, dozens of newspapers continue to publish regularly, with some, including the *Daily Graphic, Daily Guide, Ghanaian Chronicle, and Ghanaian Times* publishing daily ("Ghana Media", 2023).

The Ghanaian media space, like a typical sub-Saharan media space, is still very much dominated by traditional media channels, although new media channels spurred by the new digital revolution continue to provide new pathways for journalism practice and expression (Kemp, 2025). The number of newspaper titles in Ghana has significantly reduced over the years, as noted by Gadzekpo (2007). Most newspapers are not well established and not professionally managed, making profitability almost an onerous challenge. Reliable statistics on newspaper circulation and sales in Ghana are virtually non-existent but the trends indicate that many Ghanaian newspaper publishers and editors lament the poor sales as a result of popular new media channels and a pervasive radio that seems to have been buoyed by modern digital technology making reach, accessibility and reliability strong ("Newspaper Business", 2014)

Even tabloids are struggling to keep their sales up. Managing Editor of *The Republic,* David Tamakloe said his company is unable to "break even. The public's attention is shifting from hard copy to soft copy and we will have no choice but to halt the production of newspapers".

Managing Editor of the National Forum newspaper, Kwabena Bomfeh also lamented about poor sales saying "sadly, we are not making much sales through our hard copies, but we get patronage from both online and social media".

Some people who spoke to Joy Business blamed the dip in newspaper sales on the increased availability of the internet and the emergence of smartphones. They said it was more convenient and faster to access information on the internet, and therefore it was unnecessary to purchase newspapers.

Others also said the newspapers are too expensive as compared to the price of data bundles sold by internet service providers, and thus readers would rather find information on the internet ("Newspaper Business", 2014; para 5-9).

In 2015, the then Chief Executive Officer of the nation's leading newspaper and media Group, Graphic Communications Group Limited, Ken Ashigbey, noted that newspapers had to find an antidote to the 'disruption' of the digital age and called for innovation to make newspapers thrive. He argued further that newspapers would die if they stayed static (Appiah, 2015). That year, the Graphic Communications Group Limited launched a digital version for its newspapers in a move it said was aimed at making the newspaper more accessible to online readers (Appiah, 2015). Data on newspaper circulation and sales figures are usually unavailable and even when they are available, their credibility cannot be vouched for as they are provided by the newspapers which may be tempted to inflate figures to woo advertisers.

However, at Ghana's printing hub, New Town, a suburb in the capital, Accra; many newspapers are printed by commercial printers and the number of copies can be as low as 500 for an edition[1]. Sales also remain abysmal, with some newspapers recording sales as low as 50 copies per edition[2], according to accounts by some newspaper circulators and vendors. The leading brands such as the *Daily Graphic* had in the past reported circulation figures in the tens of thousands sometimes upwards of 50,000 copies daily but generally between 30,000 – 40,000 copies daily according anonymous sources in the organization although a 2019 data indicated that the paper prints 100,000 with a daily readership that was estimated at 1.5 million readers (Klein, 2019). Data on traffic on online portals indicate that the Graphic.com.gh portal has a traffic of about 95k + 15k ranked as the fifth highest in the country after ghanaweb com, bbc.com, myjoyonline.com and aljazeera.com (Ahrefs, 2025). Yet, the *Graphic*, which is the leading newspaper in the country has suffered financially and high turnover rates continue to rock the newspaper (GNA,

1 Interview with newspaper printers

2 Interviews with newspaper sellers and distributors

2025). Like other leading newspapers, their operational strategy has failed to deliver the financial returns required to maintain them as viable brands (Agyeman, 2023).

Mass Media and the Internet in the US

The Mass Media Industry in the USA is the largest in the World, and it is also considered the most developed in the world ("United States", 2023; US International Trade Administration, 2024). It is estimated that in 2024, there were more than 2000 licensed TV stations in the US (Federal Communications Commission (FCC), 2024). In 2022, it was estimated that there were about 15,377 commercial radio stations in the United States, and although this was 12 less than the number in 2021 it was more than double the number of radio stations in the US in 1970 (FCC, 2024; Leu, 2024).

A 2023 study by the Northwestern NWE University's Medill School of Journalism found that there were approximately 6000 newspaper titles in the USA, with about 4790 being weekly newspapers (Adgate, 2023).

The Pew Research Center (2024) notes that a vast majority of Americans obtain some of their news from at least one digital device. In 2022, the average monthly unique visitors for the fourth quarter were estimated at around 27.1 million (Pew Research Center, 2023). Pew Research Center (2024) data shows that comparatively in 2022, 13 percent of respondents reported that they often obtained their news from radio, with 24 percent indicating that they never obtained their news from radio (Pew Research Centre, 2024). For TV, 31 percent indicated that they often obtained their news source from TV, with 21 percent indicating that they rarely obtained their news from TV and 14 percent indicating that they never obtained their news from TV (Pew Research Centre, 2024). The research also indicated that 43 percent of respondents indicated that they usually depended on digital devices for their news sources, while eight percent indicated that they never depended on digital devices for their news (Pew Research Centre, 2024). For print, six percent indicated that they often depended on print sources for news, while 37 percent never and another 37 percent rarely depended on print sources for news (Pew Research Centre, 2024).

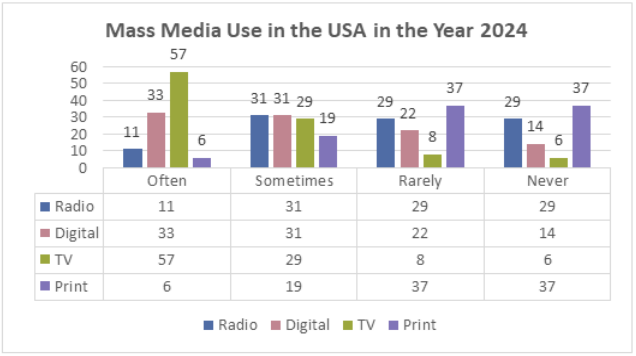

Fig 2: Mass Media Use in the USA in 2024
Source: Pew Research Centre, 2024

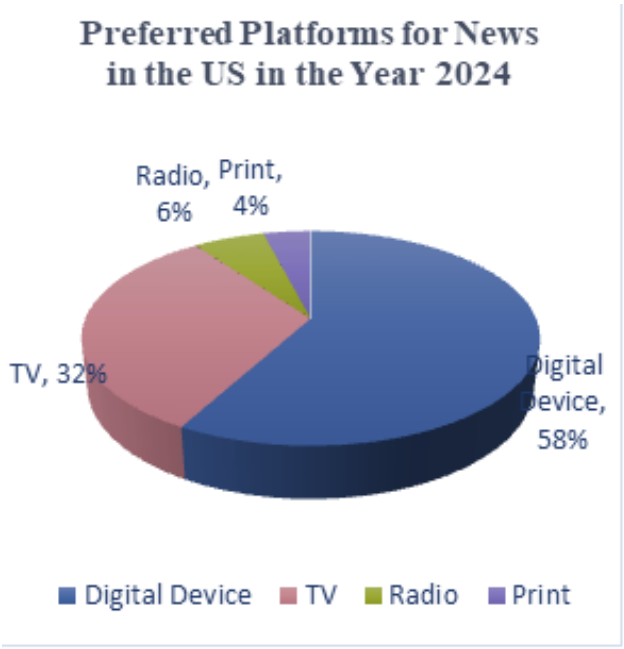

Fig 3: Preferred Platforms for News in the US in 2024
Pew Research Center, 2024

The figure below shows the mass media channels used by Americans and the level of regularity of their use in 2024. Digital receive higher level of regularity in all category of users with the exception of user who Often Use Mass Media, a cohort which has radio has the dominant channel. Print media appears to be the least used media. The figure below shows that level of preferences of various mass media channels by Americans in 2024. Digital devices are the most preferred platforms while print is the least preferred platform.

Internet Access

The USA is considered one of the World's largest online markets, which encompasses the media and has a very high internet penetration rate (ITU, n.d.a). As of 2024, the USA had a near universal access to the Internet with 97 percent of the population with access to the Internet, more than 25 percentage points of 2013 penetration rate (Petroyan, 2024). According to the US Census Bureau (2024; para 1), "most US households had at least one type of computer (95%) and had a broadband internet subscription (90%) in 2021, an increase from 2018 (92% and 85%, respectively)".

Dominance of Online Media

The US mass media industry has also witnessed the digital disruption that has been recorded in other mass media industries (Guttman, 2024). It is estimated that many households are doing away with traditional newspapers,

magazines, radio and TV in preference for digital options (Pew Research Centre, 2024). According to Guttman (2024), in 2017, only 35 percent of adults indicated that they had watched TV programs or films at the time of broadcast on paid channels, an indication of the challenge faced by traditional TV. However, a study in 2024 indicated that 77 percent of adults indicated that they had streamed a show or movie online, another indication of migration to digital platforms (Guttman, 2024). Radio has witnessed similar trends, with online consumption of radio broadcasting on the rise and the emergence of online radio stations such as Pandora and Spotify (Guttman, 2024). As of 2018, it was estimated that about 57 percent of the US population listened to online radio (Guttman, 2024). Relatively, about 88 percent of people aged 12-24 are reached by online radio compared to 33 percent of adults over 55 (Guttman, 2024).

Newspapers have faced serious challenges with the growing popularity of online media. A 2024 report by the Fischer (2023) noted that about 6000 newspaper titles are published in the US, but on the average, two titles are shut down every week. On the contrary, there has been a dramatic shift to online news media. The popularity of digital versions has dramatically outstripped printed version (Pew Research Center, 2024) and for major brands, for instance in the case of the New York Times, as of September 2014, while print circulation was about 650,000 a day, its website and associated apps attracted more than 54 million unique visitors in January 2015 averaging about 1,700,000 visits a day (Watson, 2024). In 2023, the paper recorded an average weekday print circulation of about 279,000 copies, less than half the figure recorded in 2014 (Watson, 2024). In the last quarter of 2024, the New York Times added 350,000 new online subscribers to increase its number of subscribers to 11.4 million (Robertson, 2025). (Interesting. Why did the New York Times add more subscribers, while other newspapers shrank?)

Subscription revenue grew 8.4 percent to $466.6 million in the fourth quarter, driven by an increase from digital-only products.

Total advertising revenue in the quarter was largely flat at $165.1 million, with digital advertising revenue up 9.5 percent year over year and print advertising revenue down 16.4 percent.

Although the number of digital subscribers continues to increase, the number of print subscribers to The Times is declining fast. It fell to 610,000 at the end of last year, down from 660,000 at the end of 2023 and 730,000 at the end of 2022 (Robertson, 2025, para 7-10).

In terms of advertising revenues, generally there was a decrease in ad revenue from the printed newspaper by about 4 percent to $16.7 billion, while digital newspaper ads rose by about 3 percent to $3.5 billion (Robertson, 2025).

Table 1: Fixed Broadband (5G) Prices as Percentage of GNI per Capita in 2012 and 2023.

Country	Rank	%GNI per capita	
		2012	2023
US	3	0.35	0.84
Ghana	141	27.49	9.2

According to Zacks Equity Research (2024) "focusing on premium journalism, personalized content, and strategic pricing, New York Times has strengthened its reader base. Over time, the company has expanded its digital ecosystem to include not only news but also lifestyle, cooking, crossword and more, each contributing to the overall subscription growth".

Internet Access

The USA is considered one of the World's largest online markets, which encompasses the media and has a very high internet penetration rate (Petroyan, 2024). As of 2024, the USA had a near-universal access to the Internet, with 97 percent of the population with access to the Internet, more than 25 percentage points of the 2013 penetration rate (Petroyan, 2024). According to the US Census Bureau report (2024; para 1), "most US households had at least one type of computer (95%) and had a broadband internet subscription (90%) in 2021, an increase from 2018 (92% and 85%, respectively)". The report further noted that while Urban households were more likely to have broadband Internet compared to rural households, they both had comparatively high levels of broadband Internet access: 91 percent and 87 percent, respectively.

Access to 4G Internet is universal, and access to 5G Internet is about 97 percent. The price of fixed broadband as percentage of Gross National Income (GNI)

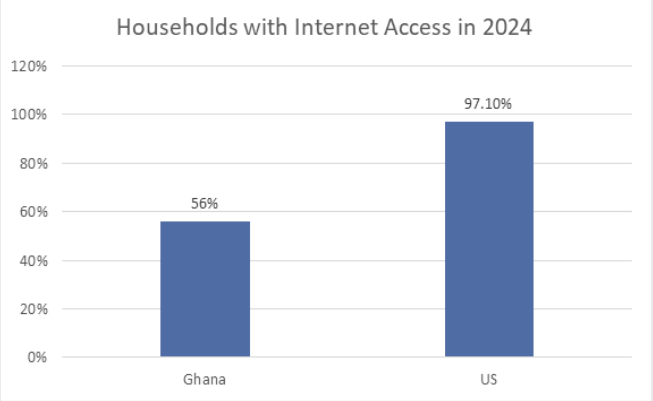

Fig 4: Household with Internet Access at Home in the Year 2024
Source: ITU, n.d.g and ITU, n.d.h.
Source: ITU, n.d.b

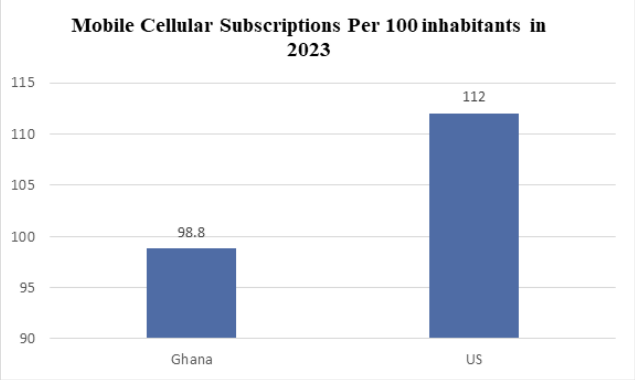

Fig 5: Mobile Cellular Subscriptions Per 100 inhabitants in the Year 2023.
Source: ITU, n.d.g and ITU, n.d.h
Source: ITU, n.d.c and ITU, n.d.d
Source: ITU, n.d.e and ITU, n.d.f

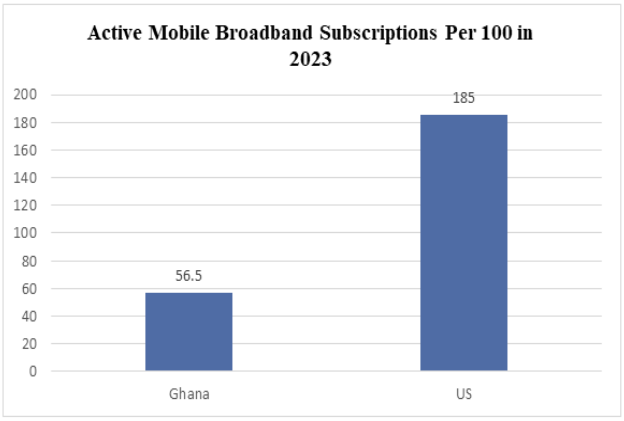

Fig 7: Active Mobile Broadband Subscriptions Per 100 in the Year 2023.
Source: ITU, n.d.b

per capita, from 0.35 to 0.84 percent an indication that fixed broadband Internet consumption has become less affordable over the decade (ITU, n.d.b).

The table below provides an indication of the level of affordability of fixed broadband (5G) Internet in the USA and Ghana in 2012 and 2023. While Ghana has recorded significant improvement in affordability, fixed broadband Internet in the US is still far more affordable than in Ghana.

The figure below shows the relative percentages of the households in the USA and Ghana with Internet access in 2024. The US has near universal Internet access for households why Ghana at 56 percent is far from universal access of households to Internet.

The table below presents the levels of access of various Internet technologies in the USA and Ghana in 2023. While there is near universal access for 3G and 4G, there is very marked difference in access to 5G.

The figure below shows the level of mobile cellular subscriptions in the USA and Ghana. Th US has slightly more subscriptions compared to Ghana.

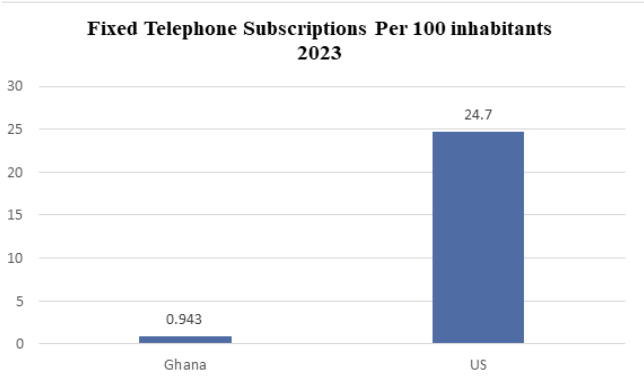

Fig 6: Fixed Telephone Subscriptions Per 100 inhabitants in the Year 2023.
Source: ITU, n.d.i and ITU, n.d.j

The chart below shows the levels of access to fixed telephony for inhabitants of the USA and Ghana in 2023. Ghana has very low fixed telephone subscriptions compared to the US.

The chart below shows the level of active broadband subscriptions in the USA and Ghana in 2023. The US has far greater active broadband subscriptions than Ghana.

The table below presents the level of affordability of mobile data and voice in Ghana and USA in 2018 and 2023. Ghana has a relatively very high percentage GNI per capita signaling far affordability.

Digital Communication in the Financial Sector

Digital communication in the financial sector has become very critical in an era of digital evolution and transformation of economic systems. Righini (2022) notes that the digital transformation has found significant expression in the financial sector, and financial companies have had to rethink their digital communication and systems.

Digitalization in the financial sector has changed many things: it is deciding which players are winning and competitive and which ones are destined to stay behind, it is encouraging the birth of new products and services and finally, it is forcing all companies in the industry to redesign their business model (Righini, 2022, para 2).

Ghana

Ghana's digital growth, perhaps, has seen the biggest expression in the financial sector, where digital technology is fueling the phenomenal growth of the Fintech subsector (Sasu, 2024). In 2020, the Boston Consulting Group ranked Ghana as the third-highest country after China and Kenya for mobile money payments (Creemers et al, 2020; Collins, 2021). This is not very surprising as mobile money payments, which started in Kenya, has accelerated rapidly in West Africa, with the region considered to hold

Table 2:Population covered by 5G in the Year 2023

Country	3G	LTE/WiMAX(4G)	5G
USA	99.9	99.9	90
Ghana	95.8	99.3	N/A (19 Percent estimated by 2030)

the biggest share of the market (Creemers et al, 2020; Global System for Mobile Communications Association (GSMA), 2023). According to data from GSMA (2023), the West African sub region leads globally with the biggest share of registered mobile money accounts rising from 11 percent in 2021 to 33 percent in 2022.

Data show that mobile money transactions have been on the ascendency since 2017, rising yearly from 2.69 million Ghana cedis per day in 2017 to 18.65 million Ghana Cedis per day in 2024 (Sasu, 2024).

According to the Bank of Ghana, in 2022, 20.4 million active users were generating 488.2 million transactions valued at USD9.5 billion, and ranking high in terms of employment outcomes. Additionally, there were an estimated 699,592 registered mobile money agents.

The penetrative power of mobile money technology in ensuring almost universal and equitable access to efficient and available financial services is expressed in the uproar that greeted the government decision to introduce the Electronic Levy that introduced extra charges on the mobile money through the taxing of users who sent and withdrew money from the mobile monies (The Conversation, 2023; Agbenorsi & Dotse, 2022; The Conversation, 2022).

Mobile network interoperability in the country has enabled ease of transactions across different mobile networks, facilitating transactions across networks and different financial institutions. In 2018, the Bank of Ghana launched the country's first mobile money interoperability system in 2018 aimed at eliminating the complexities and inconveniences associated with transfers across the various mobile money networks in the country, according to Alliance for Financial Inclusion (AFI) Network, 2018).

Interoperability reduces the cost of initiating transactions across networks, as customers will no longer need the services of a third-party payment provider to initiate transfers across networks. Customers will be able to send and receive money directly to and from each other, irrespective of the network they are on, allowing them more convenience and security.

The system will further deepen financial inclusion and promote cashless transactions in Ghana. It will also serve as a viable vehicle for financial intermediation; businesses and individuals can accept mobile money from other network users seamlessly (AFI, 2018, para 5-6).

United States

The US maintains a leadership role as a global economic and financial powerhouse, and the US dollar remains the 'global currency', yet there are concerns that failure to lead the global digital evolution may have serious implications in a wide range of areas, including in the area of global security and democratic governance. As noted by Runde et al (2021, para 19) "U.S. supremacy in digital infrastructure offers a first-mover advantage to shape and influence the broader ecosystem for decades." The USA is second to China in terms of the amount of global digital payments, and in 2020, while the US digital payments were less than half that of China, the US recorded faster growth rates in terms of digital payments (Runde et al, 2021).

In 2020, the global digital payments market hit $5.4 trillion in transaction value. Currently, China leads this market, with Chinese firms generating $2.9 trillion of all value. U.S. digital payments firms trail behind, generating only $1.26 trillion in value in 2020—less than half the size of the Chinese industry. That said, between 2019 and 2020, the U.S. digital payments industry grew at a faster rate of 23 percent, compared to the 17 percent growth enjoyed by Chinese digital payment firms during that same period (Runde et al, 2021, para 20).

Runde et al (2021) argue that ~~in order~~ to remain a leader in the sector, the US must make significant investments in infrastructure for digital systems, particularly in retail payment systems and financial technology and services. These may include remittances, e-payments, and insurance. According to the US Treasury Department, AI technologies, together with other fraud detection ICT tools, had contributed to the detection of 4 billion in the fiscal year 2024.

Digital Communication in the Health Sector

Ghana

The expression of digital technologies in Ghana's health sector has not been as pronounced as in the financial sector, although significant milestones have been achieved. In a study, Preko and Boateng (2020) identified "five generative mechanisms of digitalisation in the Ghanaian health sector. These were Standardisation, Convergence and Connectivity, Storage Systems, Financial Transparency, and Data Security". They noted that the first three, Standardisation, Convergence and Connectivity and Storage Systems achieved high levels of digitalization while the other two achieved average levels.

In October 2024, the government of Ghana launched what was described as E-Health, otherwise known as the

Table 3: Mobile Data and Voice High-Consumption Price as Percentage of GNI per Capita in 2018 and 2023.

Country	Rank	%GNI per capita	
		2018	2023
US	51	0.83	0.76
Ghana	113	6.20	3.24

Electronic Health Management System, to create a digital health record accessible across all hospitals in the country. The System is a product of a public-private partnership between the Ministry of Health of Ghana and Lightwave e-Health Solutions, a U.S.-based company specializing in e-health (Quenum, 2024). The full benefits of such initiatives are still pretty much far-fetched. A paper by the Oxford Business Group (2020) noted that while Ghana has made some bold moves in ensuring digitalization of its health sector, challenges ~~still~~ remain. According to the Group, "Obstacles remain to the increased use of digital technologies in providing health solutions. The biggest challenge by far is the lack of credible data. There needs to be further public-private collaboration in terms of data gathering". In November 2024, the government launched the Electronic Health Services Application (NeHSA), a Telehealth System, built to enable people to use digital tools to access healthcare services remotely. A report by the National Health Insurance Authority (2024) quoted the then Vice President, Dr. Mahamudu Bawumia, as stating that:

Our aim is to create a healthcare system that is not only resilient and sustainable but also inclusive and equitable. A system where technology such as Telehealth and E-Pharmacy is are not just a tool, but pillars of health service delivery that support our Universal Health Coverage goals.

Every government health facility across the nation will be connected through this service, ensuring that every citizen irrespective of the geographical location can access quality healthcare (National Health Insurance Authority, 2024, para 4-5).

The project is at the pilot stage and, according to the NHIA (2024), will involve "22 healthcare facilities in the Greater Accra, Volta, Ashanti, Northern, and Western regions. In addition, 150 CHPS compounds, community pharmacies, over-the-counter medicine-sellers, and wellness centers will serve as Vitals Collection Points for this pilot." Additionally, the government launched the Ghana Drone Delivery Service in 2019 to address the challenges associated with medical supplies, particularly in rural areas where poor road networks hamper effective and timely medical supplies. This was done in collaboration with Zipline, an American-based medical drone delivery company.

United States

In the case of the USA, digital expression in the Healthcare system is relatively far more entrenched. As noted by Lawrence S Friedman MD, Associate Dean for Clinical Affairs at University of California San Diego (UCSD) Health Sciences, four cornerstones underpin the digital revolution and adoption in the US healthcare system: "federal government regulation and financial support, the need for transparent and rapidly accessible patient records, the necessity of 'big data' to quantitatively improve healthcare treatment and quality, and the transition of the USA's healthcare providers from a volume-based to a value-based economic model" (Keen, Para 1).

One landmark law that many experts believe was an important catalyst for the revolution was the Health Information Technology for Economic and Clinical Health Act of 2009. President Barak Obama changed the face of healthcare (Kadakia, Howell & DeSalvo, 2021). According to Keen (2018), the law was key as it served to sanction the Health Organisation that failed to introduce digital systems in their information systems for healthcare management, while offering incentives for health organisations that adopted such technologies.

The Office of the National Coordinator for Health Information Technology reports that, in 2008, only 9% of hospitals and 17% of physicians utilised an electronic health record (EHR). By 2015, this had increased to 96% of hospitals and 78% of physician offices (Keen, 2018; para 3).

A report by Harris et al (2022) also notes that the US healthcare system has benefited significantly from the adoption of digital systems following the Covid-19 pandemic. They note that telehealth services were expanded to cover many beneficiaries under medicare. The report further adds that the quality of telehealth services is comparable to in-person medical consultation for managing chronic diseases and treating behavioural health issues. While telehealth services have seen remarkable adoption, other technological areas, such as the adoption of AI in the US health care system, has been deemed to be lagging when compared to other sectors of the US economy. Yet, a study by Nikhil and Brandon (2023) showed that AI in the US health care system was developing and has proved very effective, and affirms that if the adoption of AI is enhanced, healthcare access and quality would improve.

AI adoption in health care delivery lags behind the use of AI in other business sectors for multiple reasons. Early AI took root in business sectors in which large amounts of structured, quantitative data were available and the computer algorithms, which are the heart of AI, could be trained on discrete outcomes — for example, a customer looked at a product and bought it or did not buy it. Qualitative information, such as clinical notes and patients' reports, are generally harder to interpret, and multifactorial outcomes associated with clinical decision making make algorithm training more difficult. Another

challenge is embedding AI output into the already complex clinical workflow. Furthermore, in our experience, the environment in which some health care organizations operate often leads these organizations to focus on near-term financial results at the cost of investment in longer-term, innovative forms of technology such as AI (Nikhil and Brandon, 2023, para 2).

Comparatively, while phenomenal strides have been made in the attainment of almost very high levels of digital inclusivity in the financial sector, the health sector lags behind both in terms of the establishment of digital systems and the adoption of the digital systems by Ghanaians.

Digital Communication in the Agricultural Sector

Ghana

There has been increased interest among Ghanaian farmers in the area of digital communication in the agricultural sector (GNA, 2025). This is driven by a Government of Ghana Rural Development Policy that seeks to promote the use of ICT to improve livelihoods through enhanced rural economies, and the digitalization of communication in the country's agricultural sector is part of a broader national digitization policy (NITA, 2003). Under the agricultural digitilization drive, the country introduced the E-Agriculture Programme that consisted of E-Field Extension, E-Farm Information Programme, and E-Learning and Resource Centres (FAO, 2017).

Addison et al (2024) note that these efforts have resulted in the improvements in agricultural practices and production through the provision of timely and current information on crop and animal production, early warning systems, price information, enhanced market linkages through e-commerce platforms, agricultural extension and advisory services, traceability of financial services, particularly via computers, mobile phones, web portals, radio frequencies etc.

They state further that while there have been some notable gains in the area of the integration of ICT into the activities of rural farmers, there has been limited influence of more advanced technologies such as Blockchain, Artificial Intelligence, and Robotics in the country's agricultural practices and production. Their study established that it showed a low level of adoption of digital technologies among small holder farmers in rural areas, with users of digital technologies recording improvements in their livelihood outcomes and assets over five years accentuating the key importance of integrating ICTs into rural agriculture.

Approximately 44% of the smallholder farmers indicated usage of the digital device for the chosen purposes. Among the users, it is found that more than half of them use digital technologies to access price information (61.6%), extension services (61.6%), agricultural inputs (57.1%), weather information (53.6%), and to learn to improve farming practices. Others (26.3%) also reported the use of digital technologies to obtain business or agriculture-related updates.

Concerning livelihood outcomes, 58.5%, 33%, and 21% of users testified to experiencing improvement in their agricultural production, health/well-being, and resilience (reduced vulnerability) to shocks/stressors, respectively. In contrast, less than 20% of the non-users reported positive changes in these livelihood outcomes over the recall period. Lastly, the average monthly household income is also found to be significantly higher for users (GH'471.96 or US$65.6) than non-users (GH'385.3 or US$53.5) (Addison et al. 2024, p. 7).

United States

The US National Institute of Food and Agriculture under the US Department of Agriculture (2024) notes that the country's agriculture is markedly influenced by digital technology and, as a result, is distinctly different from what pertained decades ago. Unlike the Ghanaian case, the Institute, particularly, identifies the influence of "robots, temperature and moisture sensors, aerial images, and GPS technology. These advanced devices and precision agriculture, and robotic systems allow businesses to be more profitable, efficient, safer, and more environmentally friendly.

McFadden et al (2023) note that digital agriculture is key to addressing challenges such as climate change, labour costs and rising production costs facing US agriculture. They explain that over a period of about 23 years spanning 2006-2019, there have been considerable uptake of digital technologies by US farmers.

The adoption of precision agriculture technologies—basic to the ongoing digitalization of U.S. agriculture—has been rising steadily over the past two decades. The use of auto-steer and guidance systems now occurs on well over 50 percent of U.S. acreages planted to corn, soybeans, winter wheat, cotton, rice, and sorghum—up from roughly 10 percent of planted acres (or fewer) in the early 2000s. Adoption rates of other technologies (such as GNSS-based yield and soil maps, VRT, and drones) have been far less than 40 percent of planted

acres, with the exception of their use in corn (in 2010) and soybeans (in 2018), the most recent years for which data are available. For winter wheat, cotton, sorghum, and rice, the adoption of these other technologies has been lower (between 5 percent and 25 percent of total U.S. planted acreage, depending on the year), though their use with these crops has still generally increased over time (McFadden et al, 2023, p 37).

Discussion

Digital Technologies in Ghana and the US

As noted in the study, while the US presents an impressive expression of digital technology growth, adoption and usage, Ghana's case is not necessarily abysmal; yet, there are striking challenges, such as the very poor roll-out and adoption of 5G, which starkly contrasts with the US case. Data on access to 5G, access to fixed telephone subscription, active broadband subscription, household internet, affordability as expressed in prices of mobile data and voice-high consumption as percentage of GNI per capita indicate marked disparities in the two countries these disparities challenge any notion of equitable adoption and use of digital communication technologies.

While Ghana's digital revolution has been pretty nascent, and reflect a system of the laggards or at best late adopters. American digital culture reflects the philosophy of the Innovators or Early Adopters. Digital technology in Ghana has not witnessed as much practical relevance as expressed in developed economies such as the US. From the findings, it is evident that new media has transformed the culture and economy of the U.S. but the lack of relevant data on new media influences on traditional mass media in Ghana in no small way aptly enforces the view that the relevance of new media in transforming the culture and economy of the Ghanaian media is still under-studied; perhaps, not profound enough to attract academic attention. This perhaps also shows that Ghana's digital communication technologies reflect less morality compared to that of the US. The drive for innovation reflects a strong economic culture that places a premium on simpler, cheaper and more effective ways of life.

The impact of digital communication technologies on defining news forms of life has been well studied. It has been noted that linkages among culture, economy and technology are explicably close. In a sense, inherent in society is a culture, and the culture reflects the society's economic behavior. Concepts such as Culture of Technology, emphasises the view that culture is penetrated by technology (Slack & Wise, 2015).

Morality of Digital Technologies

If moral economies should reflect just economic systems, then digital technologies and, in this regard digital communication technologies, may not necessarily reflect a perfect system of economic morality in a globalised world, yet, there has been remarkable progress towards attaining a just and equitable system. It is the usual trend to consider the impact of a system within the context of its maximum or close to maximum growth. Thus, in assessing the moral economy of digital technologies, we examine the nature of the variations in the adoption of digital technologies in two economies that reflect markedly different levels of growth, and reflect, perhaps, two economic systems that could be described as developed and developing economies.

We examine this within the context of various established theoretical approaches notably as already espoused, two well-studied theories: Technological Determinism and Diffusion of Innovation. Technological Determinism, a cross-disciplinary reductionist theory, with roots in economics, has helped to project an understanding of socio-economic development, and its relation, in this regard, was first espoused by the renowned economist Karl Marx. In Marxist philosophy, economics and technology are closely related and they form a fulcrum around which a society will develop (Smith & Marx, Merrit Roe & Leo, 1994). In one breath, the findings of this study enforce this view; in another, this philosophical approach can be challenged. We discuss this in later paragraphs.

The other theory is the Diffusion of Innovation. In this study, we reflect the categorization of users of new technologies, otherwise originally conceptualized as "Innovations" based on the adoption and active use of the Innovations, and relate it somewhat to the technological determinist view that Technology is powerful and independent in its altering of social life. How well does this position challenge the position of Diffusion of Innovation that social, economic and cultural currents are required for the adoption of new (technological) innovations (Rogers, 1983)?

These two theories, from media and economic perspectives, give us a basis to explore the concept of globalization, which is one effect of digital linkages brought by new media technologies. There is no doubt that digital communication technologies are exerting a big influence on how human activities are conducted, and this is evidenced in the adoption of digital communication systems in all the facets and jurisdictions studied. That is ample evidence that technology does indeed has significant influence on how we live. The emergence of social media as a new culture of interaction is ample evidence that society today lives beyond the traditional forms of social interaction. This is in sync with the propositions of technological determinists, under the Technological Determinism Theory, who believe that invariably our lives are determined by emerging technologies; that we are bound to live by the social, cultural and economic influences induced or exerted by prevailing technologies. In examining the interplay between the two theories, we analyse the direction of influence: does technology, the "powerful and independent" force that technological determinists argue it is, influence socio-cultural dynamics or systems or does the socio-cultural dynamics, predispositions or systems determine the level of adoption and/or influence of technology in a society? We argue that from the evidence, the power and independence of technology is not always assured unless there is a prevailing Economic Morality that ensures that adoption is adequately pervasive; otherwise the effect of technology may not be felt, even after years of deployment.

The Ghanaian example shows that the diffusion of digital communication technology is partly dependent on the level of economic morality of the technology. Technology is not that "powerful and independent", and Laggards and Late Adopters at the lower end of the economic spectrum demonstrate systems that have low economic morality of digital technologies. A dominant and powerful technology that determines the evolution of social and cultural systems has to respond to acceptable standards of equity, norms and values otherwise societies may show unequitable and dysfunctional adoption of the technologies, otherwise its effect may be blunted.

Passive News Consumers

The era of digital technology has contributed to producing news consumers who perhaps can be described as passive news consumers. They do not form a critical commercial niche for both advertisers and newspaper producers, and it is very obvious that such people perceive news reading as a passive activity that does not require a lot of time. This view probably receives some confirmation if one analyses the time spent on the digital platforms, and there is reason to suggest that such people dominate the news consumer market of digital platforms. Further research may seek to explore the demographics of such news consumers to adequately help make projections about what future trends may be.

Globalisation and the 'Pull Factor'

There is some discernible tension between the expressions of moral economy of digital communication technologies in the two countries studied. The contrast seen in the two digital economies confronts long-held theoretical approaches: As discussed earlier, while the US expresses a profound sense of the Technological Determinist view as expressed in the Technological Determinism theory, the laggards in Rogers Diffusion of Innovation challenge a wholesale application of the Technological Determinism approach. Technology does not necessarily determine how we live and do not inevitably lead to a media dependency syndrome. While digital technology-imposed globalization may challenge the view that technology does not necessarily determine the way we live, we argue that globalization is nothing but a "pull factor", thus, while it may exert some influence in the global digital media space, its influence may have far greater impact in urban and affluent societies, but it fails to address the basic foundations required for a far-reaching digital communication revolution in developing countries.

For instance, mobile phone penetration in Ghana is impressively high; partly because of multiple cell phone ownership and what we term the 'pull factor' exerted by a globalised world. Yet, the reality of this trend is that such a pull factor as expressed in high mobile phone penetration does not reflect digital communication awareness or proficiency. The reality is that the bane of illiteracy and poor infrastructure limits the use of digital communication devices and systems in the Ghanaian digital space. Thus, the mobile penetration in Ghana, high as it may seem, is but just a reflection of the globalization-imposed pull factor that does not necessarily reflect a well-pronounced moral digital economy as may be expressed in the case of the US. Moral economy of digital communication technologies in Ghana may not be as just as it is in the US, yet, in a global communication culture heavily influenced by the developed world and digitalization, there has been an impressive "catching-up" and indeed in some cases, innovation, as demonstrated in the Ghanaian Finance and Health sectors that show quite advanced digital communication capabilities.

While the finance sector demonstrates the capacity for advanced digital communication capabilities, this is usually at the institutional level or predominantly restricted to elite users or customers who are in the minority.

Conclusion

The concept of economic morality applied to digital communication technologies describes the level of fairness, justness and universality in the deployment of the technologies. Invariably, the media economics of the two jurisdictions reflect prevailing economic models in the two countries. Both countries operate liberalized market systems providing very liberalized digital communication systems although growth of digital communication are at different levels.

Digital communication technologies are not independent and powerful, as Technological Determinists may believe them to be, as digital communication technologies demonstrate the required potency and effect if their deployment and usage meets standards and norms of equity, universality, affordability and ease of access. The diffusion of digital communication technologies, therefore, is not only a function of the power and independence of the technology but also, a function of the economic morality of the technologies.

Globalisation introduces a 'pull factor' pulling in developing countries into a digital environment, and in response developing countries tend to find ways to survive, though at relatively less affordable rates.

Disclosure of Interest

The authors report there are no competing interests to declare)

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