FROM MOTOROLA DYNATAC TO APPLE IPHONE 10 PLUS: RESPONSES ON THE USE OF MOBILE TELEPHONY TECHNOLOGY FROM A UNIVERSITY COMMUNITY

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Summary. The study focuses on the evolution of telecommunication in Ghana and examines the social, economic, religious and academic impacts that mobile phones have on the Ghanaian society and Kwame Nkrumah University of Science and Technology (KNUST) in particular. It adopted a qualitative approach. Data was collected using questionnaires and interviews. Simple random sampling and convenience sampling were both employed in the selection of participants for the study. The results show that most phone users prefer to use their phones to make voice calls than to send text messages. Observations and responses from the respondents showed that students and general users of smart phones had easy access to information. The use of smart phones had positive and adverse impact on some of the people within the university community and on the studies of students in particular.

Keywords: Mobile Phones, Phone Calls, Text Messaging, Browsing, Surfing, Kwame Nkrumah University of Science and Technology (KNUST), Ghana

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Introduction

Mobile phones, also known as cellular or wireless phones, are devices that enable communication over long distances. They are connected to wireless communication networks that make use of radio waves or satellite transmissions. They provide voice communications such as Multimedia Message Service (MMS), Short Message Service (SMS), and newer phones such as the smart phones may also provide internet services such as web browsing, e-mail, twitter, Facebook and many more. Most mobile phones have a number of features in common such as their battery, which provides a power source for the phone's functions, a screen that displays the user's typing, shows text messages, contacts and more, a Subscriber Identity Module (SIM) card which allows an account to be swapped among devices and lastly, these devices are uniquely identified by an International Mobile Equipment Identity (IMEI) number.[1]Mobile phones are almost always an inexpensive and fast way to communicate, especially when broadband fixed-line phones used to connect to the internet are underdeveloped and rely upon an expensive infrastructure.[2] Prior to the arrival of mobile phones, most people only had limited experience with telephones. People used to communicate by walking to their destinations or writing letters.

On March 10, 1876, Alexander Graham Bell made the first telephone call in his Boston laboratory, summoning his assistant from the next room. Boston was the first city whose citizens benefited in 1877 with the first installed telephones. Initially, subscribers were paired and could only speak to one another. Later in 1973, Martin Cooper stood near a 900MHz base station on Sixth Avenue, between 53rd and 54th streets in New York City, and placed a call to the headquarters of Bell Labs in New Jersey.[3] This was the beginning of the mobile phone industry in 1973. In 1997, South Africa launched the first telecommunication company "Telkom". The use of mobile phones since then has transformed from a very slow rate, with ten percent (10%) of Africans using mobile phones throughout the 20th century, and statistics from the Afro-Barometer reported that seventy-five percent (75%) of Africans owned a mobile phone in 2013.[4] Africa is home to over three hundred and fifty million mobile phone users and their numbers are rising faster than any other place in the world.[5] In 1992, when the first mobile telephone service provider, Millicom Ghana Limited, launched its service under the brand name Mobitel (now Tigo), the Ghana Telecom Company was the only communication service provider providing fixed-line services. Telephone penetration in that period stood at

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1   Scourias, J. Overview of the global system for mobile communications. University of Waterloo, Ca. 4, 1995.

2   Smith, D. Africa calling: mobile phone usage sees record rise after huge investment. *The Guardian*. 22 October 2009, [interactive] [accessed 14 October 2015] <http;//www.guardian.co.uk/technology/2009/oct/22/Africa-mobile-phones-usage-rise>

3   Cooper, M. Encyclopedia of World Biography. 2008. Encyclopedia.com. [interactive] [accessed 6 September, 2015]< http://www.encyclopedia.com>

4   Etzo, S. and Collender, G. The Mobile Phone 'Revolution' In Africa: Rhetoric or Reality? African Affairs 1-10. Oxford University Press. 2010.

5   Ibid.

zero point three (0.3%) according to the World Bank country data statistics.[6] The lack of investments, project delays and the capital intensive nature of fixed-line communications and the low quality of service were factors that contributed to this low telephone penetration.[7] Telecommunications in Ghana were still extremely inadequate. In 1995, only thirty-seven (37) of the one hundred and ten (110) administrative districts of the country had telephone exchange facilities, and there were only thirty-five (35) payphones in the entire country, with thirty-two (32) in Accra.[8] As of 2010, the mobile coverage stood at seventy-four percent (74%) and Ghana was Africa's ninth largest mobile market and West Africa's second largest by subscription count after Nigeria.[9]

The use of mobile phones has helped in increasing the Gross Domestic Product (GDP) of many African states as a result of mobile penetration, resulting in increases in connectivity and the availability of information. As a result of Africa being an agricultural-driven economy, mobile phones have helped in connecting rural areas. This has allowed farmers to keep track of price fluctuations in crops and agricultural equipment, which has also dealt with the issue of local monopoly. "We cannot imagine life now without a mobile phone" has become a frequent response when Africans are asked about mobile phones.[10] They have become part and parcel of the communication landscape in many urban and rural areas of Africa and the growth of mobile telephony is amazing: from one (1) in fifty (50) people being users in 2000 to one (1) in three (3) in 2008.[11] Such growth is remarkable, but it does not even start to tell us about the various ways in which mobile phones are being used by Africans and how they are transforming or are being transformed by societies in Africa. Mobile phones now have become more important to the economic, social, religious and educational lives of Ghanaians. With the proliferation of mobile phones on Ghana's market, it has helped Ghanaians in many ways to build strong relationships between family members who are far away from each other, and economically, mobile phones have become a source of facilitating business due to the advantages they provide for advertising and marketing.

In less than a generation, information and communication technologies (ICTs) have transformed the planet. Inventions like the internet, electronic mail, computers, Personal Digital Assistants (PDAs), and mobile phones have transformed the lives of many people throughout the world, mostly for the better. This extraordinary progress has happened

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6   Ahorto, C.R.K. Regulatory impact in Ghana. Institute of Statistical Social and Economic Research, University of Ghana. Paper prepared for the conference on Regulatory Impact Assessment: Strengthening Regulation Policy and Practice. Chancellors Conference Centre University of Manchester, Manchester, UK 26&27 November 2003.

7   Alhassan, A. Development communication policy and economic fundamentalism in Ghana, Unpublished Ph.D. Thesis, University of Tampere, 2004.

8   Ibid.

9   Tobbin, P. Understanding the Ghanaian Telecom Reform: An Institutional Theory Perspective. Paper presented at 21th European regional ITS conference Telecommunications at new crossroads: Changing value configurations, user roles, and regulation, København, Denmark. 2008.

10   De Bruijn, M. Mobile phones: The new talking drums of everyday Africa. African Books Collective. 2009.

11   Ibid.

even in regions where other kinds of social and economic developments have lagged behind, and Africa is one such region. While it is true that relatively few Africans have access to the internet and computers, some types of ICTs have thrived on the continent. Even though mobile phones, in Africa and Ghana in particular, have impacted lives and progressed steadily, there have been both positive and negative impacts and also the under-utilization of them. The study broadly examines the use of mobile phones in Africa with a great focus on Kwame Nkrumah University of Science and Technology (KNUST) and how it has helped students in their studies, along with its concomitant impact on the social, economic and religious lives of the people within the KNUST community and its ramifications on the larger Ghanaian society.

Approach

The researcher collected and analysed data from persons including students living in the Kwame Nkrumah University of Science and Technology (KNUST) community in the Ashanti Region of Ghana. This design enabled the researcher to explore and solicit various opinions, perceptions and ideas of people with respect to the impact that mobile telephony has on the study population. The researchers used archival data, literature study, face-to-face interviews and also participant observation and the issuing of research questionnaires to the respondents to gather qualitative data for this paper. The primary and secondary data used for this study were both obtained from two major sources. Data was collected from workers of telecommunication networks such as Ghana Telecom, MTN, Tigo, Vodafone and other people who have fair knowledge on the use of mobile phones. Information was sought through interviews based on the interview guide and observations. Moreover, minutes, receipts and drafts of companies such as Vodafone Ghana, Franko phones, a mobile distribution and sales outlet, were useful along with other knowledgeable sources. The other sources included articles, journals, textbooks and websites.

Questionnaires were used to collect data from thirty-eight (38) people in the study area. The thirty-eight respondents consisted of students and workers who are primary users of mobile phones and fit into the interview schedule. Additionally, data was collected from twelve interviewees consisting of seven students and five other persons within the KNUST community. To facilitate the data collection process, both closed and open-ended types of questions were incorporated in the drafting of the questionnaire. The close-ended questionnaire asked the respondents to provide their responses in brief by merely ticking the spaces such as age, sex and occupation among others. This enabled the respondents to provide quick responses. The open-ended questionnaire enabled the researcher to gather responses on the views, perceptions, and ideas that they had about mobile phones. The closed and open-ended questionnaires were both found to be very helpful, since they assisted many respondents in providing extensive information for the research. It also enabled the researcher to get a general overview of the attitudes, views and perceptions, as well as the various experiences of the respondents concerning their use of mobile phones. The information that was obtained from the sources was thematically pieced together to write a narrative which encapsulates the emergence, use

and impact of mobile phones on people in general and students and other persons within the KNUST community in particular.

Discussion

The discussions have been categorized into four sections. The first section deals with the discussion of relevant literature on mobile telephony and related issues. The second section deals with a historical overview of the study area with great attention focused on how it relates to the economy, geography, population, and cultural systems within the chosen scope of the study. The third theme deals with the analysis and presentation of the data gathered from the field work, as well as a discussion of the results of the research based on the set objectives of the study and its conclusion.

Mobile phone use

The use of a mobile phone can be defined as any application of a mobile phone used as a tool, including talking, text messaging, game playing or the access of information. Addo in his book, "The adoption of mobile phone: How has it changed us socially?"[12] noted that the mobile phone originally served as a tool for business management, but according to Majed Salawi (2007), people use cell phones for four reasons:

First, a mobile phone is a small, light, convenient, and user-friendly device. Subscriptions and minute costs are affordable and reasonable in comparison to landline calls and it enables people to reach others for assistance during emergencies such as risk to health, life, property, or the environment, and even traffic accidents. Secondly, mobile phones enable people to be reassured about their loved ones, anywhere they are and at any time. Therefore, it reduces worry and anxiety, especially for parents towards their children. Also, mobile phones help to carry out immediate work and professional tasks, such as organizing meetings and interviews. They also enable executing assignments and following up on projects from a distance. Lastly, mobile phones help people communicate with others, whether family, friends or strangers. In fact, mobile phones have helped foster existing social relationships.[13]

Also, Addo has argued that with the popularity of the Short Messaging Service (SMS), individuals are used to their phones more than ever. In an effort to send more text messages, a new language in the form of short hand is being created, hence making experts worried that the grammar factor in language will be overlooked. Julie Soleil also argues that texts that are expressive, rather than informational, are sent and received like gifts that can be kept and read to activate memories. She further postulates that in activities that they engage in before going to bed, young people like to go through their

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12   Addo, A. The adoption of mobile phone: How has it changed us socially? *Issues in Business Management and Economics*. Vol.1. 2013, p. 47-60.

13   *Supra* note 12, p.47.

inboxes and read their saved messages, and also find it difficult to delete messages that they did not feel were appropriate.[14]

Dogbevi (2008) reports that available statistics, which date back to 2000, estimated that SMS messages sent from Ghana grew from an initial 22,000 to over 130,000, and could be higher now.[15] Social Network Sites (SNS) as web-based services have made impact because of the use of mobile phones. This has allowed individuals to construct a public or semi-public profile within a bounded system, articulate a list of other users with whom they share a connection, and view their list of connections and those made by others within the system. These Social Networking Sites have become tools that help people to communicate and socialize with each other.[16]. Examples of popular SNS include Facebook, Twitter, Instagram, and WhatsApp among others. In 2011, Facebook was the most visited social network site with 550,000,000 visitors in a month, followed by Twitter with 95,800,000 visitors.[17]

Impact of mobile phones on society, social interactions and relationships

Addo (2013) argues that a mobile phone increases social connections between different segments of a society, creating equalities and a distribution of wealth as well as creating positive changes in the dynamics of a society, which involves contributions such as competence in communications, accessibility of information, socialization, political and social union, youth and a new culture.[18] Social interaction signifies that people are aware of the existence of others, and also it implies active engagement between two or more parties and it is mostly demonstrated in some form of communication, both verbal and non-verbal.[19] Mobile phones also make individuals available anywhere, and any time, which changes the way that individuals are choosing to interact in social settings with others. In Africa, there were and there are other instances where people that do not own a mobile phone may have to walk to a nearby house or to their friends with a mobile phone while they wait for their relatives elsewhere to call them through it.[20] Mobile phones originally served as a tool for business management. Now, mobile phones serve as tools for social connections and social relationships. In addition to keeping up

14   Archambault, J. S. Travelling While Sitting Down: Mobile Phones, Mobility, and the Communication Landscape in Inhambane, Mozambique. Africa 82.03. doi: 10.1017/S0001972012000307, 2012, p. 404.
15   Dogbevi, E.K. How SMS technology is changing lives in Ghana. Ghana Business News. [interactive] [accessed 13June, 2013] <http://www.ghanabusinessnews.com>
16   Boyd, D.M. and Ellison, N.B. Social Network Sites: Definition, History, and Scholarship. Journal of Computer-Mediated Communication. Vol. 13(1). 2007.
17   Ibid.
18   *Supra* note 12.
19   Ibid.
20   Bemah, A. Social Impact of Mobile Phone Device.2012 [interactive] [accessed 26 December, 2017] <http://afroeuro.org/?p=4722>

with social relationships, individuals have also been able to increase productivity with their work because they can be hundreds of miles away from the office, and still have instant access to their e-mail, documents, and contacts wherever they are.[21]

Reid and Fraser also argue that individuals with low self-esteem typically do not communicate as much with others, and are more prone to expect a negative response from those that they do contact. However, it is thought that individuals who have low self-esteem will actually use their mobile phone more to try and establish social networks and build relationships without having all of the pressures of a face-to-face encounter with an individual, as well as to try and reach out to other individuals.[22] Grimm also argues that mobile phones and their associated applications, drastically impact on the personal lives of youngsters, especially people using smartphones and personal digital assistants (PDAs) for an increasing number of activities including storing sensitive data, such as email, calendars, contact information, and passwords, on the devices, the internet, GPS navigation, mobile applications for social networking. Keeping a wealth of personal information as recent innovations in mobile commerce has enabled users to conduct many transactions from their smartphone, such as purchasing goods and applications over wireless networks, redeeming coupons and tickets, banking, processing point-of-sale payments, and even paying at cash registers.[23] Mobile phone adoption appears to be surpassing, on a worldwide basis, the popularity of TV sets, as it is a technology that has been given credit for saving lives, organizing terrorist activities and overthrowing dictators.[24] Irrespective of the positive impacts of mobile phones on society, there are still some challenges and ills that it brings to people. According to Ling (2005), an observational research shows that most mobile phone users retreat from social settings when they are using the mobile phone in a public place.[25] Findings also suggest that mobile phone users use the mobile phone in public spaces as a form of exclusion.[26] Across qualitative and quantitative studies, users of mobile phones report using their phones for social purposes. However, scholars have argued that a mobile phone might actually serve as a tool for social isolation.[27] Individuals seek out entertainment and avoid boredom whether at appropriate times, or inappropriate times. For example, an individual using their mobile phone on the side of the road when their vehicle has

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21 Tully, C. J. Growing up in technological worlds: How modern technologies shape the everyday lives of young people. Bulletin of science, technology & society 23. 2003 No. 6, p. 444-456.

22 Reid, D. J. and Reid, F.J.M. Text or Talk? Social Anxiety, Loneliness, and divergent preferences for cell phone use. Cyberpsychol Behav. June No.10 (3). DOI: 10.1089/cpb.2006.9936. 2007, p.424-35.

23 Grimm, M. Cutting the cord: Do cell phone makers have generation Y_s number. American Demographics. No. 1. 2001, p.66-67.

24 Katz, J.E. Mobile media and communication: Some important questions. Communication Monographs. Vol. 74.3. 2007, p.389-394.

25 Ling, R. The mobile connection: The cell phone's impact on society. The Morgan Kaufmann series in interactive technologies. Morgan Kaufman publishers, an imprint of Elsevier, San Francisco. Ubiquity, Volume 2004 Issue September. 2004.

26 Bugeja, M. Interpersonal divide. New York, NY: Oxford University Press. 2005.

27 Ibid.

broken down as compared to using their mobile phone to just say 'Hi' to someone, or chitchat with another person. Adolescents and young adults have the desire to take risks with relationships, and the rules and roles observed, as individuals seek to merely find entertainment in order to avoid boredom, which may occur at appropriate and inappropriate times.[28] This shows how the younger generation's sense of self are tied up with this technology. Individuals are attached to their mobile phones, which enable them to think that they cannot function without their mobile phone on a day-to-day basis. Thompson and Cupples (2008) stated that there are many factors that lead to mobile phone dependency and these include, leisure, boredom, sensation-seeking behaviour, low self-esteem, constant accessibility, emancipation, safety, individuality, status and confidence, competence in communications, communications and connectedness, humour, confidentiality, planned life, time management, and possibly even more, like simply cooking food or using sanitation facilities.[29]

The popularity and relatively lax security of smart phones have made them attractive targets for attackers.[30] Smartphone security has also not kept pace with traditional computer security. Technical security measures, such as firewalls, antivirus applications, and encryption, are not common on mobile phones, and mobile phone operating systems are not updated as frequently as those on personal computers. The number and sophistication of attacks on mobile phones has been increasing, and countermeasures are slow to catch up. There are situations where children, especially youngsters, neglect food, parents and interpersonal relations while using their mobile phones, especially while texting, and this significantly affects their personal life.[31]

Beniwal and Sharma (2013) describe some successful mobile device technologies which are currently used in education. Significantly, The Bridge IT Project in Tanzania provides access to digital video content in classrooms, teacher training, and ongoing support, including learner-centred lesson plans and teacher's guides. However, Valk et al (2010) argues that the inequalities in access to education continue to pose major barriers in the developing world and the delivery of cost-effective and quality education remains a persistent problem.[32] They argue that in an attempt to find viable solutions to these problems, much hope was placed in new information and communication technologies (ICTs). They believed that ICT can empower teachers and learners by facilitating communication and interaction, offering new modes of delivery, and generally transforming teaching and learning processes. The concept of mobile learning (m-Learning), which aims at using mobile devices to advance learning is gaining attraction in the developing world. The number of projects exploring the potential of mobile

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28   Leung, L. Leisure boredom, sensation seeking, self-esteem, and addiction. Mediated interpersonal communication. 2008, p. 359.

29   Thompson, L. and Cupples, J. Seen and not heard? Text messaging and digital sociality. Social & Cultural Geography. 9.1 2008, p. 95-108.

30   *Supra* note 12.

31   Ibid.

32   Valk, J.-H., Rashid, A.T. and Elder, L. Using Mobile Phones to Improve Educational Outcomes: An Analysis of Evidence from Asia. IRRODL, Vol 11, No 1. Athabasca University, 2010.

phones facilitated by m-Learning in the developing world is steadily growing, spurred in part by the use of mobile technology in the educational sector in the developed world, which has expanded from short-term trials on a small scale to large-scale integration.[33] However, there remains a lack of analysis to integrate the findings of the rising number of m-Learning projects occurring throughout the developing world.

In addition, Sawhney and Gomes (2000) argue that a cell phone is an essential device in social and family communication. People communicate more through cell phones, especially with the improvement of cellular services.[34] A cell phone helps people maintain social relations at home and work with less effort. Cell phones have increased social awareness among family members and social relations. They have also played roles in assuring families about the whereabouts of their children. Sawhney and Gomes also found that communication patterns in domestic groups in extended social communities are based on the roles of mothers and wives. Mothers of immigrants are not only a source of emotional and parental support, but they are also a source for information and updated news about the extended family. Siblings also provide a similar type of support.[35]

Mobile Phone Technology: A History

The word "mobile" comes from the Latin word "mobilis", which means something that is swift and rapid, easy to move and in a negative sense, something which is inconstant, fickle and changeable. Mobile phones, also known as cellular phones or wireless phones, are devices that are used to enable us to communicate over long distances. They are connected to a wireless communications network that makes use of radio waves or satellite transmissions. They provide voice communications, Multimedia Message Service (MMS), Short Message Service (SMS), and newer phones such as the smartphones may also provide Internet services such as Web browsing, E-mail, Twitter, Facebook and much more.

The invention of mobile phones happened in the United States in the 20th century. The first mobile phones were launched by AT&T in the year 1947. This occurred in Boston and New York. Radiotelephony became jam-packed, and network operators then resorted to the use of waiting lists. Customers hoped to be lucky enough to get a mobile phone connection, due to the limited nature of the frequency spectrum allotted to it at that time. The coming of modern automatic mobile telecommunications systems using a cell structure helped to minimize the shortage problem by offering a more efficient use of the frequency space. After the introduction of Advanced Mobile Phone Services (AMPS) in 1978, the first American cellular phone system came into operation in 1979 as a test and went into commercial operation in 1983. These services were basically city services and a majority of mobile phone companies made roaming extremely difficult

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33   *Supra* note 32.
34   Sawhney, N., and Gomes, H. Communication patterns in domestic life: Preliminary ethnographic study. Department of Ethnology and Comparative Sociology, University of Paris X Nanterre, Nanterre, France. 2000.
35   Ibid.

in the US. Mobile telephony developed in a slightly different manner in Europe, and mobile telecommunication technologies have developed through successive generations. The first generation (1G) appeared in the 1950's, and the second generation (2G) or GSM technology was used extensively, but both were globally challenged by the next, third-generation (3G) technologies, and now we have the fourth generation (4G). This sequence of generations was characterized by increasing capacity (higher transmission speeds) and the better scope of content available for a message.

Srivastava (2005) stated that the mobile phone has shifted from being a 'technological object' to a key 'social object', as communication with others is the main purpose of mobile phone purchasing.[36] Mobile phones will become the standard universal computing platform in the world. The use of traditional mobile phones is waning, and most of these people will upgrade to full app-phone capability in the coming years. This means that more than 5 billion people will soon be carrying a computer in their pockets and the sheer scale of these numbers will cause mobile computing to become the standard universal channel through which people will receive services from businesses and governments, and through which they will interact with one another using social media. The mobile phone has come to influence people's lives to a wider degree and will change society in an even larger and deeper way, more than its intended use as a communication tool.

Development of Telecommunications in Ghana

According to Antwi, the history of telecommunications in Ghana dates back to the colonial era, when the system was established by the British administration for one basic purpose, to help control and exploit the colony[37]. The first telegraph line in Ghana was installed in 1881[38] (then the British Colony of Gold Coast). There were only two telecommunication providers. These were the Ghana Post and Telecom Corporation (PTC), which had a history and reputation of inefficiency and poor services[39]. Even though 70% of Ghanaians lived in rural areas, over 80% of all telephone lines were in urban areas, and 53.6% were based in Accra. The administration then was over-sized and the technical staff lacked expertise, then there was a reformation in 1995, the PTC was privatized and turned into Ghana Telecom (GT) and Ghana became the second African nation to have full Internet connectivity in 1995[40]. In 2003, there was a growth in the number of mobile phones, four mobile phone companies together had 600,000 subscribers and more than 10,000 communication centres, providing fax and Internet services in addition to telephones sprung up in Accra[41]. There was a liberalization process which was motivated by

36   Srivastava, L. Mobile phones and the evolution of social behaviour, *Behaviour & Information Technology*, DOI: 10.1080/01449290512331321910. Vol. 24:2. 2005, p. 111-129.
37   Antwi, E. The Effect of Telecommunication Price War on Consumers in the Kumasi Metropolis. Ph.D. Thesis, 2011, p.20.
38   Overå, R. Networks, distance and trust: Telecommunications and changing trading practices in *Ghana. CMI Working Paper WP* .Bergen: Chr. Michelsen Institute. 2004, p.4
39   Ibid.
40   *Supra note*, p.6.
41   Ibid.

a combination of pressure from international finance agencies, WTO commitments and inefficiency in the existing system, the government's need for revenue, and a desire to promote universal service[42]. Active design and implementation of telecommunications reform in Ghana began with the Accelerated Development Program 1994-2000 (ADP 2000), which primarily sought to promote competition in the telecommunications industry[43].

In 1992, Millicom International Cellular with its Mobitel brand brought mobile phones to Ghana. Millicom is from Luxembourg, and operated in seventeen (17) countries in Latin America, Africa, and Asia. Ghana was their first point of call in Africa when they started using the analog Extended Total Access Communication System (ETACS) standard[44]. Celtel also joined in 1994, but this company was taken over by Hutchison Telecommunications International Limited based in the Cayman Islands. It operated in nine (9) markets in Africa, the Middle East, and Asia. Celtel also originally ran on the analog Advanced Mobile Phone Service (AMPS) system.

The Ministry of Telecommunications and Transport initiated a project, Capital Telecom, and it was licensed in 1995 to provide rural telephony in southern Ghana via wireless. Capital Telecom faced numerous technical, managerial and political problems, which eventually led to its collapse. Its equipment had a capacity of 10,000 lines, but Capital Telecom never installed more than 600 lines[45]. Aside from this attempt at rural telephony, mobile phone ownership was limited to government officials and wealthy business people. Millicom later switched to digital under the brand name Buzz in 2000. The brand, as well as the company name, was later changed again to Tigo in March 2006 to adapt to a global branding strategy. Celtel was re-branded Kasapa in 2003 to give it a local identity. Their strategy was aimed at low-income subscribers and later named Espresso. In 2005, Celtel changed to digital and it was the only mobile phone network provider using the Code Division Multiple Access (CDMA) standard. Despite its relatively early entry into the market, Celtel failed to capture a significant market share due to management problems. Mobitel was so dominant in the market that it became the household name for mobile phones in Ghana. Scancom also entered the market in 1996 using Global System for Mobile Communication (GSM) technology, and rapidly captured the market. Scancom was taken over by Investcom LLC and renamed Areeba in 2005, and then was taken over by the MTN Group in 2006, through its acquisition of Investcom. MTN, a South African-based mobile phone network provider, which is currently present in twenty-one countries in Africa and the Middle East.

Background Information of the Respondents and Interviewees

With an emphasis on the age distribution of the respondents, fifteen point eight percent (15.8%) of the respondents fell within the age of sixteen to twenty, while sixty-five point eight percent (65.8%) of the respondents also fell within the ages of

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42   *Supra* note 37.
43   Ibid.
44   *Supra* note 37, p.21.
45   *Supra* note 44.

twenty-one to twenty-five. Also, the remaining eighteen point four percent (18.4%) were twenty-six to forty years old. Thirty out of the thirty-eight respondents, representing seventy-eight point nine percent (78.9%), indicated that they were single while thirteen point two percent (13.2%), which is five out of the thirty-eight, hinted that they were married. Also, one indicated that he was widowed, another was divorced and the other was cohabiting. However, out of the twelve people who were interviewed, seven were married, while the remaining five were single.

The distribution of the educational background of the respondents revealed that two out of the thirty-eight respondents, representing five point three percent (5.3%), have not had any form of formal education. Furthermore, eighty-six point eight percent (86.8%), five point three percent (5.3%) and two point six percent (2.6%) had attended school up to the tertiary, senior high school, and junior high school levels, respectively. With respect to the interviewees, five asserted that they were able to complete senior high school, while the remaining seven of them indicated that they are still students on the KNUST campus.

In relation to occupation, twenty-nine out of the thirty-eight respondents, representing seventy-six point three percent (76.3%), indicated that they were students, and this truly shows that this research was carried out in an educational environment. Thirteen point two percent indicated that they were traders, while five point three percent (5.3%) of the respondents identified themselves as businessmen. However, the remaining percentage of the respondents indicated that they were engaged in other productive ventures different from the ones stated above. With the interviewees, all of them including seven students indicated that they were all business oriented people, hence engaged in various economic activities on campus. Concerning the religious orientation of the respondents, thirty-four (89.5%) of the respondents indicated that they were Christians, three indicated they were Muslims and one of the respondents also indicated that he is a traditionalist.

Mobile Phone Use

All the respondents except one indicated that he had no mobile phone, and upon a thorough analysis of their responses to the open-ended questions which were asked, for example, the question, "Why do you own a phone?" received several responses, including "I own a phone because I need to talk to people who are at different locations". They own their phones for communication purposes. Most of the respondents pointed out that the brand name of their first phones was Nokia and they had received them as a gift from well-wishers. However, some of the respondents indicated that they had bought theirs and the prices ranged from as low as fifty Ghana cedis to as high as three thousand Ghana cedis (an iPhone 6, at the time of gathering data).

With regard to the length of time that the respondents have used mobile phones, fifty percent (50%) indicated that they have owned a phone for more than seven years, while forty-two point two percent (42.2%) of the respondents indicated that they have used mobile phones for one to seven years. However, the remaining five point three percent (5.3%) of the respondents also indicated that they have used their phones for less than

a year. All the students who participated in the interview reiterated that they have used mobile phones for four to five years because they had their first phone after completing senior high school. One of the responses received was:

> I had my first phone when I was able to achieve an aggregate score of six in my final exams back at senior high school, because my parents had promised me that they would reward me with anything that I wanted, so I requested a Sony Experia, which cost 1200 cedis at that time.[46]

With regard to the frequency at which the respondents use their phones to make calls, twenty-five out of the thirty-eight indicated that they frequently used their phones to make calls, while twelve of them also indicated that they use their phones to make calls once a while. One of the respondents did not indicate the rate they used their phone to make calls. Most of them indicated that they frequently used their phones to make calls and another response was, "I am a food vendor and because of the nature of my work, I make a lot of phone calls to ascertain whether a client is ready to receive their order before I can package it."[47]

Ohenese, a student who was interviewed on this issue reiterated that he does not use his phone to make calls because of the nature of his programme of study. Moreover, his parents and siblings pay him visits almost every weekend, so he does not feel lonely. As a result of this, he does not call his family frequently[48]. However, another student who comes from Bolgatanga in the Upper East Region of Ghana also asserted that he frequently uses his phone to make calls because of the distance between him and his parents. He further mentioned that the phone calls he makes are his only source of comfort whenever he misses home or needs money[49] .

It is common knowledge that phone users in Africa prefer to make voice calls rather than text messages. Due to this, it was not surprising that sixty point five percent (60.5%) of the respondents hinted that they used their phones to make voice calls, while a lower proportion of the respondents (36.8%) indicated that they frequently use their phones to send text messages. However, one of them did not indicate the rate at which they used their phone to send text messages. All the interviewees except those who are not students indicated that they frequently use their phones to text when necessary. "I send a lot of text messages with my phone during mid-semester and end of term examination periods because it is very expensive to discuss and solve likely examination questions with voice calls, and I also text a lot when I am running out of credit"[50].

Out of the thirty-eight respondents, sixteen of them indicated that they frequently use their phones to access their Facebook accounts whenever they have internet access, while seventeen of the respondents also indicated that they use their phones once in a while to

46   Interview with Kusi Appiah Ernest, at his hall of residence, Katanga Hall, 13th March, 2016.
47   Interview with Madam Joyce Sarfo, at her food joint, Republic Hall, 10th March, 2016.
48   Interview with Ohenese Gyambibi Christopher, at his Hall of residence, Independence Hall, 20th March 2016.
49   Interview with Akanzonge Pious, at his Hall of residence, Queen Elizabeth II Hall, 5th April 2016.
50   Interview with Nutifafa Gladys, at her Hall of residence, Africa Hall, 8th April 2016.

access their Facebook accounts whenever they have internet access. However, the rest of the respondents indicated that they would rather use their phones to do something else when they have internet access than to log into their Facebook accounts. Inferences made from the responses of the interviewees showed that they log into their Facebook accounts with their phones whenever there is news about fashion, entertainment, sports or social news trending on Facebook. However, one of the interviewees who doubled as a student and a marketer stated that "as a marketer of African prints, "classy" shoes, phone, perfumes and more, I frequently log on to my Facebook accounts with my phones to post adverts and to market my goods."[51]

In connection with the rate at which the respondents use their phones to tweet, forty-two point one percent (42.1%) indicated that they tweet on their phones frequently, while twenty-six point three percent (26.3%) also indicated that they tweet on their phones once in a while. However, the remaining thirty-one point six percent (31.6%) of the respondents also indicated that they would rather do other things with their phones rather than tweet with it.

One interviewee hinted that, "I have become so addicted to twitter to the extent that I cannot stay away from it for more than thirty minutes, because I will miss a lot of information ranging from sports, fashion, celebrities and world news…"[52].

Positive impacts of the use of mobile phones

With respect to how phone users see its importance in society, thirty-six (94.7%) of the respondents asserted that they strongly agree that mobile phone use is very important to society, while the remaining two respondents indicated that mobile phones have impacted society adversely. Almost all the interviewees indicated that mobile phones have had a positive effect on society because of how it helps to bring families together through constant phone calls and most importantly, how it has helped reduce the rate of armed robbery as a result of the introduction of mobile banking by the telecommunication operators.

> Mobile phones have had a lot of positive impact on society because of the ease of doing things that come with it, for instance, when a mobile phone was a scarce commodity in our society, family members had to come from far places to physically come together at a particular place to discuss pressing issues, but with mobile phones, all they need to do is to simply engage in a conference call, and all the difficulties associated with long distance travel disappear[53] .

Concerning how mobile phones have helped to improve relationships between people, thirty (78.9%) of the respondents indicated that their use of mobile phone has helped them to improve their relationships with others, while seven (18.4%) of the

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51   Interview with Chiwetalu Ogundele Oscar, at his residence, Franco hostel-ayeduase, 10th April 2016.
52   Ibid.
53   Interview with Ms. Grace Offei, at her office, KNUST, 19th March 2016.

respondents also indicated that their use of mobile phones has not helped them improve their relationships with others. However, one of the respondents did not share these views. Per the critical and careful analysis of the views of interviewees on whether their use of mobile phones helped them to improve their relationship with others, ten out of the twelve interviewees stated that their relationships with others improved because they have the opportunity to talk with their friends who are far away from them at least 3 times a week, and this has helped them to keep their relationships in good shape. One of the in the interviewees said, "I had relationship problems because I couldn't get in touch with my friends, but this changed immediately when I started to use a phone. With my phone, I call my loved ones frequently and as a result of this, they also return my calls, so we have built a strong relationship"[54]. However, two of the interviewees who asserted that their mobile phones have not helped them to improve their relationships with others indicated that the nature of their work does not allow them the luxury of time to use their phones to call or text their friends.

With respect to whether the use of mobile phones helped them to enhance their communication with others, twenty (52.6%) and thirteen (34.2%) of the respondents indicated that they agree and strongly agree respectively to the fact that their use of mobile phones has helped them to enhance their communication with others. However, three (7.9%) of the respondents indicated that they strongly disagree with the fact that their mobile phones have helped them to improve their communication with others, while two of the respondents did not provide their views on this question.

Negative impact concerning the use of mobile phones

Concerning the negative impact of mobile phones on Ghanaian society, thirty (78.9%) of the respondents indicated that their use of mobile phones has contributed negatively to society, while the remaining eight (21.1%) also indicated that they do not think that mobile phones have contributed negatively to society. The participating interviewees had contrasting views concerning the negative impact of phones on society. The following is a contrasting view on the argument that mobile phones have had an adverse impact on people:

> Mobile phones don't have any negative impact on society, but it is because of the actions and inactions of some mobile phone users that some people think that the use of mobile phone is dangerous to our society. For instance, I use my phone to evangelize in order to spread the word of God, even if some do not to want to hear it, and because of this, I don't think that anyone can say that what I am doing is affecting our society negatively[55].

Also, one of the interviews stated that he also thinks that mobile phones do not have any negative impact on our society, but it is the other way round, since it places value on economic, social and religious institutions. However, one of the interviewees thought

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54   *Supra* note, 50.
55   *Supra* note 49.

otherwise, and she said, "Phones are now destroying the hope of our future. The youth of today use it in a negative way by using it to watch pornographic movies, gambling and the worse of it all, the scamming of others"[56].

Again, the question of whether people use their phones when they are with others received a positive response. Twenty-five (65.8%) of the respondents indicated that they see nothing wrong or bad about using their phones while with others, however, thirteen (34.2%) of the respondents also indicated that they do not use their mobile phones whenever they are with others. So far as the interviewees were concerned, most of them indicated that they think that it is not culturally correct or acceptable to use your phone when around others. It is very annoying when you are talking to someone and they cannot concentrate on what you are saying because they are busy doing something else with their phone[57].

Nineteen (19) people representing (50%) of the respondents indicated that they feel bored whenever they are not with their phones, while ten (26.3%) of the respondents also indicated that they feel uncomfortable when they are not with their phones. However, nine (23.7%) of the respondents also indicated that they feel worried when they are not with their phones. All the interviewees indicated that they might feel comfortable for some time when they are not with their phones, but might feel very uncomfortable or worried when they are not with it for a long time. "I will be okay at the initial stages when I am not with my phone, but when it gets to be more than two hours and I am not with it, I will feel down in the dumps, because I cannot afford not to use my phone for that long"[58].

Concerning the use of mobile phones as an excuse to avoid talking to strangers or people, twenty-two (57.9%) of the respondents indicated that they do not use their mobile phones as an excuse to avoid talking to strangers or people. However, thirteen (34.2%) of the respondents also showed that they use their phones as excuse to avoid talking to strangers. The remaining three percent of the respondents did not answer the question. A majority of the interviewees indicated that they will never use their phones as excuse not to talk to strangers because it is not a good habit, and most importantly, they might not know why the stranger is approaching them.

Impact of mobile phones on social institutions

The respondents were asked whether they tell lies on their phones, and thirty-four (89.5%) of the respondents indicated that they lie on their phones, while only one of the respondents indicated that they do not lie on their phone. Three of the respondents did not answer the question. Upon further study of their response to the open-ended question that sought to unravel why people do tell lies on their phones, it was revealed that the respondents often lie about their location and hesitate to respond to questions that they do not have immediate answers for.

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56   *Supra* note 53.
57   *Supra* note 47.
58   *Supra* note 49.

In connection with how mobile phones help people to stay in contact with their external families, thirty-two (92.1%) of the respondents indicated that their use of mobile phones has helped them to stay in contact with their distant families, while the remaining three (7.9%) also indicated that their use of mobile phones in no way has helped them to stay in contact with their distant family members. They argued that do not have enough time at their disposal to call them. However, a student respondent from the Upper-East region of Ghana said:

> "You can imagine the distance from here to my hometown, so without my mobile phone, I would have to wait till vacation before I could see or hear the voice of my parents and siblings, but with my mobile phone, I can hear their voice almost every day and it makes me feel as if I am still with them [59].

Concerning the acceptance of mobile phones by religious groups, all the respondents indicated that their religion allows them to use mobile phones. Significantly, all the respondents also indicated that their religion does not frown upon the use of phones by its members. However, it is expected that they will use it decently. One of the interviewees, a Nigerian student, hinted that she is a Christian, but because of her schooling in Ghana, she does not go to church. Apparently, she has not found a branch of her church in Ghana, and there is none other. However, she always worships with her church members in Nigeria by joining live church services online with her phone[60]. Another interviewee who is a Muslim also indicated that his religion accepts the use of mobile phones, and with this he has both the written and audio versions of the Holy Quran on his phone and he always reads and listens to it. It has aided him from deviating from the teachings of Islam and the sayings of the Prophet Mohammed[61].

Other Respondents in the Educational Institution

In connection with how mobile phones help students in their education, thirty (78.9%) of the respondents indicated that their phones help them in their studies, especially in the area of research. However, two (5.3%) of the respondents indicated that their phones do not help them in their studies, while the remaining six (15.8%) did not answer the question. Inferences from the responses show that students who did not find other usefulness with their mobile phones were those who did not use smart phones or used older, unsophisticated phones that could not connect to the internet. However, some of the study's participants indicated that that the use of more modern and technically advanced mobile phones has helped them with their studies, especially if they have better features than many laptop computers. This helps them to have easier access to the internet, and has helped them in the writing of their papers or dissertations. To ascertain the validity of the claims put forward by these respondents, the interviewees who were students were asked about how their mobile phones had helped them in their studies. This is what some of them said:

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59   *Supra* note 49.
60   *Supra* note 51.
61   Interview with Osman Nurudeen, at his residence, Hyde's Hostel-ayeduase, 14th April 2016.

"Without my phone, I would have been sacked from school by now because I am very lazy and so I find it very difficult to go to the library to do my research or learn, but with my phone, in the comfort of my bed, I can lie down and access a lot of intellectual material for my research"[62].

"For me, I will say that my phone is my saviour on campus, because it helps me to be able to discuss group work or assignments with my friends. I am able to email my assignments and most importantly, I can receive sample examination questions on it"[63].

And finally,

"My phone has helped me a lot with my studies on campus and with it, I am able to share ideas that make me sound educated with my course mates on campus, and I have signed up to an online tutorials page. I am also able to call my lecturers and teaching assistants to make arrangements for meetings concerning topics that I find too difficult to understand.[64]

Concerning the interviewees who were not students, some of them reiterated that their phones help them examine the products that they sell to ascertain their authenticity, while the rest also indicated that sometimes they use their phones to learn new things concerning fashion. With respect to whether their phones disrupt their studies at times, all the respondents affirmed that their phones in one way or the other affect their studies negatively, in the sense that the phones ring or vibrate while they are in class or in group studies, and this shifts their attention from their studies to their phones. They are also sometimes glued to chats on WhatsApp. With these interruptions, they sometimes forget what they were supposed to learn, which affects their academic performance adversely.

For Employed or Self-employed workers on the University's Campus

Workers or employees on the University's campus were asked questions about how their mobile phones have helped them in their work, but only fourteen out of few thirty-eight respondents interviewed indicated that they were employed. Out of this, three indicated that their phones have not helped them in their work because they are not allowed to use their phones during working hours. The remaining eleven respondents also indicated that their phones have helped them in their work. Because of the extremely thorough analysis of their responses to the open-ended questionnaire, most of them pinpointed that their phones facilitated them in the smooth running of their work activities, because they have access to the right information concerning their work with

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62   Interview with Akwasi Agyemang Duah, at his hostel of residence, splendor hostel-ayeduase, 20th April 2016.
63   Interview with Bio Kyerewaa Esther, at her hostel of residence, Pikens hostel-Kotei, 29th March 2016.
64   *Supra* note 48.

just a call to experts in their field of work. The views of some of the respondents have been highlighted below:

> "I work at one of the offices on campus as a secretary and with my phone, my work becomes so easy that I don't even have to walk from one office to another for information, or to even book appointments for my boss. All I have to do is pick up my phone and call my colleagues at their various offices to schedule appointments for my boss, or to place a demand or request for the things that we need at our office from those in charge of it."[65]

> Another respondent, Tawiah, also said:

> "I am a fast food vendor at Ayeduase, and as a results of the advancements in the use of mobile technology, students who feel lazy or are busy learning and therefore cannot come in person to buy their own food call me on my phones to place an order, and after packaging their orders, I also call them to find out whether they are in their rooms before I let my delivery motorcycles go and deliver their food to them. In fact, it has helped me expand my business, because I now have a larger market for my food because of my phone"[66].

However, one of the interviewees was quick to contrast with the earlier views. Astu argued that his phone has not helped to advance his work, because he and his fellow students have not been not allowed to use their phones while working.

> "I work as a quality control officer with the University Press of Kwame Nkrumah University of Science and Technology, and my job requires a lot of attention because a little mistake on my part can cause the university a lot of money. If the worse should happen, I can harm myself, so what I do is that I switch off my phones while working[67].

Concerning how their phones disrupt them during working hours, eleven out of the fourteen respondents who are employed indicated that their phones do not disrupt them during working hours, while the remaining three indicated that their phones disrupt them during working hours. With an in-depth examination of the responses from the respondents to an open-ended question, it was revealed that they were addicted to their phones and they found it difficult to put their phones away and concentrate on their work. Some indicated that they are always with their phones because they cannot stay away from participating in WhatsApp group chats and trending news on social media. However, those who indicated that their phones do not disrupt them during working hours either switched off their phones or kept them their silent mode until they finished their work or jobs.

One of the interviewees reiterated that he was disrupted by his phone sometime ago and as a laboratory assistant, it made it difficult for him to have a stable mind at work,

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65   *Supra* note 53.
66   Interview with Mr. Isaac Akwasi Tawiah, at his kitchen, Ayeduase, 30th April 2016.
67   Interview with Mr. Clement Astu, at his workplace, UPK-KNUST, 2nd May 2016

so in response, he also switched off his phone during work hours[68]. However, Mr. Isaac Akwasi Tawiah indicated that he makes money with his phone because of the frequent calls that he receives from his clients that call and want to place an order for their food. He also added that his phone is a blessing to him, so it doesn't disrupt him at all[69].

CONCLUSIONS

The study affirmed Srivastava's assertion that mobile phones have become an important aspect of a user's daily life, especially to the extent that they have gone from merely being a technological device to a key social object, due to the fact that all the interviewees and respondents, except one, indicated that they own a mobile phone[70]. Furthermore, the research findings strengthened Salawi's assertion that people all over the world use mobile phones for four reasons. The respondents indicated that their phones enable them to reach others for assistance during emergencies, and this reduces their worries and anxieties because mobile phones make it easier for them to get in contact with their loved ones. It helps in the facilitation of work and lastly, it enhances their ability to communicate with others[71].

Per the responses of the interviewees and respondents, the research revealed that the main objective of phone users is to make voice calls more than anything else. Also, the research revealed that the sending of text messages and the utilization of other communicative applications on the respondents' phones only becomes necessary when the making of voice calls may be impossible or inexpedient, as put across by Addo[72]. The researcher found that searching for politics, fashion, health, and entertainment news are some of the things that smartphone users do whenever they log onto any of the social media application platforms on their phones. Also, the study found out that social media platforms such as Facebook and WhatsApp, among others, help people to communicate and socialize with others as amplified by Addo.

The study further affirms Addo's assertion that mobile phones increase social connections between the different segments of society, which creates positive changes in the dynamics of society. This includes contributions such as accessibility of information, socialization, and competence in communications[73]. The study also found that the easy flow of urgent information, easy money transfers, entertainment, and easy access to information are some of the positive features provided by mobile phones.

With regard to the negative impact of mobile phones, the study found that several people have become overly dependent or addicted to their phones, due to factors such as leisure, boredom, low self-esteem, constant accessibility, individuality and confidentiality

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68   Interview with Mr. Justice Amankwatia, at his workplace, Chemistry Department, KNUST, 29th April 2016.
69   *Supra* note 66.
70   *Supra* note 36.
71   *Supra* note 12.
72   *Supra* note 12.
73   Ibid.

as put across in an earlier study by Thompson and Cupples[74]. Also, a greater percentage of the estrangement of young people from the traditional social values of the rich culture of Ghana is a result of the easy access that they have with their phones, which allow them to come into contact with foreign cultures, which may be contradictory to the modest Ghanaian culture. This was clearly espoused by a respondent who commented that "mobile phones are now destroying the hope of our future generations, because our young people use it today in a negative way. They use it to watch pornographic movies, gambling and even worse than this is that it can be used for fraudulent purposes… among others"[75].

The study pinpointed that the two most popular religions in the world, Christianity and Islam, do not speak against the use of mobile phones because there are no direct prescriptions in their holy books against the practice, but rather facilitates the spread and practice of their faith. Nurudeen, in his quest to show how Islam accepts the use of mobile phones, reiterated that "Islam accepts the use of mobile phones, so I now have written and audio versions of the Holy Quran on my phone that I read and listen to regularly in order not to deviate from the teachings of Islam and the Prophet Mohammed"[76].

This notwithstanding, it was revealed that despite the acceptance of mobile phones by their religion, some of the respondents felt it was normal for them to lie on their phones. The study in a way has strengthened Palen and others reference to the argument of Leysia and Hughes' that, the parents' attachment to mobile phones depends on the presence or absence of their children in the sense that they become physically attached to their phones when they are away from their children, whereas this attachment loosens whenever they are with their children[77]. This assertion was made due to how the student respondents and interviewees showed how their phones have helped them to stay in contact with their family members. Furthermore, the study found out that, aside from students, the most common means for others to keep and sustain their relationships with relatives in faraway places was through constant communication with the help of their phones.

The study was able to ascertain the impact that mobile phones have on students. Almost all the students in this research sample indicated that their phones have helped them in their studies because it helps them to access information from the internet and also to discuss mind-boggling topics on phones with their teaching assistants and colleague students. It also revealed that mobile phones can disrupt the academic performance of students, due to the fact that it disrupts their attention whenever it beeps or rings. Furthermore, because of the free Wi-Fi connections on the KNUST Campus, students spend a lot of their time browsing on their phones for longer periods. The study also revealed that the use of mobile phones has had a positive impact on economic and productive activities within the study area, because it serves as a marketing tool for food

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74   *Supra* note 29.
75   *Supra* note 53.
76   *Supra* note 61.
77   Palen, L. and Hughes, A. When home base is not a place: parents' use of mobile telephones. Personal and Ubiquitous Computing 11.5. 2007, p. 339-348.

vendors, businessmen and office workers who have to interlink with other offices for information. Ms. Offei mentioned that her phone has helped her with her work as a secretary. Disruptions from incoming calls, message alerts and addiction to phones were found to be major negative impacts that mobile phones have on workers in KNUST.

It could be determined from the study that the use of mobile phones within KNUST has had a lot of positive impact, ranging from the enhancement of academics, boosting economic activities, and bridging the information gap between students and non-students within KNUST. The use of mobile phones to spread leaked sex videos by students, circulation of purportedly leaked examination questions, gambling, accessing pornographic contents on the internet and cheating during exams were found to be some of the negative impacts of the device on students.

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NUO „MOTOROLA DYNATAC" IKI „APPLE IPHONE 10 PLUS": UNIVERSITETO BENDRUOMENĖS POŽIŪRIS Į MOBILIOSIOS TELEFONIJOS TECHNOLOGIJOS NAUDOJIMĄ

Samuel Adu-Gyamfi, Gana

Santrauka. *Straipsnyje daugiausia dėmesio skiriama telekomunikacijų Ganoje raidai. Nagrinėjamas mobiliųjų telefonų socialinis, ekonominis, religinis ir akademinis poveikis Ganos bendruomenei ir ypač Kwame Nkrumah mokslo ir technologijų universitetui (KNUST). Atliktas kokybinis tyrimas. Duomenys surinkti naudojant anketas ir laisvus pokalbius. Atliekant tyrimą dalyviai atrinkti atsitiktine atranka ir atsižvelgiant į patogumą. Rezultatai rodo, kad dauguma telefonų vartotojų labiau linkę pasinaudoti telefonais sub also žinutėmis, nei siųsti tekstinius pranešimus. Respondentų pastabos ir atsakymai parodė, kad studentams ir visiems vartotojams apskritai nebuvo sunku susipažinti su išmaniųjų telefonų instrukcijomis. Išmaniųjų telefonų naudojimas turėjo teigiamą ir neigiamą poveikį kai kuriems universiteto bendruomenės nariams, visų pirma, studentų studijoms.*

Reikšminiai žodžiai: *mobilieji telefonai, telefono skambučiai, teksto pranešimai, naršymas, Kwame Nkrumah mokslo ir technologijų universitetas (KNUST), Gana,*

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