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REVIEW ARTICLE

THE GSM AND AFRICA'S SOCIO-ECONOMIC DEVELOPMENT: THE NIGERIAN CASE, 1993-2015

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ABSTRACT

This paper evaluated Africa's socio-economic development in the era of mobile technology. The postcolonial socio economic structure of Africa in general took a dramatic turn consequent upon the advent of the Global System for Mobile Communications (GSM). The GSM featured for the first time in sub-Saharan Africa in 1993 in Cape Town, South Africa; almost a decade later, it had diffused to other parts of Africa with conspicuous effects on the continent in general. The study is localised to Nigeria being the most populous country and largest economy in Africa. Apart from the fact that it broke the monopoly of the erstwhile Nigerian Telecommunications Limited (NITEL), the introduction of GSM has over the years provided a means of livelihood to millions of Nigerians. In this paper, attempts are made to examine the factors and circumstances leading to the adoption of the GSM in Africa. The paper concludes that the 'new' telecommunication industry in Africa in general and Nigeria in particular has actually led to employment generation and wealth creation with attendant implications for poverty diminution. Similarly, the GSM economy opened a new frontier of revenue generation for African governments as it became second to crude oil, and with respect for globalisation, the continent of Africa has become effectively integrated in the 21st century globalisation.

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INTRODUCTION

The African continent houses developing nations where information and communication technology (ICT) is speedily leaving the slide show. Significantly, the telephone more than any other aspect of the ICT though inextricably intertwined with the other ICT components continues to influence the socio-economic structure of the continent. In the field of communications, generally, the telephone represents one of the great strides forward in human history.[1] It was introduced during colonialism; indeed, it was an essential feature of the colonial social and economic policy in Africa. At independence, telephone services were essential in government and private establishments with few residential apartments with telephone lines installed. Up until the early 1990s, the use of telephone was restricted to the conventional landlines or fixed telephone and was somewhat a luxury exclusively reserved for the well-to-do in the society. There has been explosion of cell phone use and penetration in Africa, with mobile phone in developing countries generally providing alternative solutions to the challenge of providing universal access to landline telephone services given the slow diffusion of fixed telecommunication networks. The African cell phone explosion began in South Africa in 1993 when the government granted national cell phone licenses to MTN South Africa Ltd and Vodacom group Ltd, which quickly built large customer bases by offering prepaid cell phone cards.[2] During the colonial and postcolonial Africa, telecommunications increased the efficiency of economic, commercial, and administrative activities. However, during the third decade of the post independence Africa, the telephone revolution, which, occurred, produced far-reaching consequences on the socio-economic whole of the continent. This came at the advent of the mobile phone and the Global System for Mobile communication (GSM). In Nigeria, just as it has been the case in the rest of Africa, recent reforms in telecommunications have led to significant capacity building and investment, promoting a new lease of life and the introduction of new technologies.

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[1] Harry Barsantee "The History and Development of the Telephone in Wisconsin" *The Wisconsin Magazine of History*, Vol. 10, No. 2 (Dec., 1926): 150-163 Wisconsin Historical Society

[2] Tanja Bosch, "Women and Radio Audience in Africa" in *The Routledge Companion to Media & Gender,* eds., Cynthia Cater, Linda Stelna & Lisa Mac laughing (Routledge New York, 2014), 520

Within the past two decades, Africa has accelerated its application of telecommunications technology with impressive effects on the socio economic advancement of the continent. Few domestic businesses and no international activities could operate competitively without modern telecommunications. The primary benefits include reduced transport costs, reduced transaction costs, improved marketing information and increased efficiency of industrial production. In all economic sectors-- agriculture, manufacturing and services advanced telecommunications systems are becoming an integral part of business operations.[3] Nigeria is the fastest growing telecommunications market in Africa, rising from a meagre 500,000 telephone subscribers in 2001 to over 108 million as at December 2012 and 0ver 148 million subscribers in 2015.[4] This work examines the telephone revolution in Africa in general and Nigeria in particular bringing to the fore the different areas in which the advent of the new technology has influenced the socio economic development of Africa's most populous country and the continent's biggest economy. It thus, concludes that and that Africa has actually recorded great progress in the areas of telecommunications.

Development of Telephone Service in Africa

The telephone was introduced in Africa few years after its invention in 1876. For example, the first telephone service in Cape Town and Bloemfontein, South Africa, was established in 1878[5] and 1891 respectively to connect the railway office and municipality buildings.[6] Generally the introduction of the telephone in Africa is a colonial intervention. Apart from Ethiopia, telecommunications was introduced into Africa by the colonial nations as a mechanism of control and governance. The era of political independence in the 1960s brought with it a growing recognition of the linkages between telecommunications and economic development. Telecommunications served as domestic tool for national coherence and development. Government offices, private establishments and very few private residences were the major subscribers of the fixed telephone lines as inherited from the colonialists. However, its socio-economic implications remained conspicuous. The telecommunications technology was never brought to Africa for the general use of the African people. It was intended primarily for the communication of colonial administrators in the capital cities with colonial centres within colonies. Telegraphy was also used for controlling the colonies and in some cases to coordinate defence against internal uprisings and invasion by other powers.[7]

Telecommunication facilities in Nigeria were first established in 1886 by the colonial administration. These were geared towards discharging administrative functions rather than the provision of socio-economic development of the country. Accordingly, the introduction of public telegraph services linking Lagos by submarine cable along the west coast of Africa to Ghana, Sierra-Leone, Gambia and on to England was a greater priority than a robust telecommunications network.[8] By 1893 colonial offices in Lagos, jebba and Ilorin were provided with telephone services. Gradually a national telecommunications network was emerging. It was in 1923 that the first commercial telephone service between the towns of the Itu and Calabar was established. Between 1946 and 1952, a three-channel line carrier system was commissioned between Lagos and Ibadan and was extended to Oshogbo, Kaduna, Kano, Benin and Enugu; this connected the colonial office in London with Lagos likewise the commercial centers in the country with local authority offices. By 1950, there were 98 exchanges with over 15, 000 telephone lines in the country.[9] The need of the telephony system in the colonial Nigeria then led to the 1955-62 development programme. It provided for the expansion of the trunk using a VHF multichannel radio system on a nationwide basis and a short microwave link between Lagos and Ibadan.[10]

At independence in 1960, with a population of roughly 40 million people, the country only had about 18,724 phone lines for use. This translated to a telephone density of about 0.5 telephone lines per 1,000 people. Between 1960 and 1985, the telecommunication sector consisted of the Department of Posts and Telecommunications (P&T) in charge of the internal network and a limited liability company, the Nigerian External Telecommunication (NET) Limited, responsible for the external telecommunications services. NET provided the gateway to the outside world. The installed switching capacity at the end of 1985 was about 200,000 lines as against the planned target of about 460,000. All the exchanges were analogue. Telephone penetration remained poor equalling 1 telephone line to 440 inhabitants, well below the target of 1 telephone line to 100 inhabitants, which was the standard for developing countries. The quality of service was largely unsatisfactory. The telephone system was unreliable, congested, expensive and customer unfriendly. Arising from the foregoing, in January 1985, the erstwhile Posts and Telecommunications Department was split into Postal and Telecommunications Divisions. The latter was merged with NET to form Nigerian Telecommunications Limited (NITEL), a limited liability company. The main objective of establishing NITEL was to harmonize the planning and co-ordination of the internal and external telecommunications services, rationalize investments in telecommunications development and provide accessible, efficient and affordable services.[11] In a move to improve telephone services in Nigeria, a regulatory body, the Nigerian Communications Commission was established in 1992. It was until 1999 that the commission became a

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[8] Anthony A. Ijewere and Gbandi E.C.,Telecommunications Reform in Nigeria: the Marketing Challenges
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[10] Ajayi, O., Salawu, R.I and Raji T.I., "A Century of Telecommunications Development in Nigeria--What Next?" In *Telecommunications in Africa* (Ed.) Noam, L Eli New York, Oxford, Oxford University Press, 1999) : 163

[11] Anthony A. Ijewere and Gbandi E.C.,Telecommunications Reform in Nigeria: 164

household name in the country. This is because the year marked the complete deregulation of NITEL in which licenses were granted to private telecommunications operators and service providers. Thus began the phone revolution in Nigeria.[12] This proactive approach by the government to the telecom sector made it possible for over 8.5 million Nigerians to clutch GSM phones in the first years of its introduction.[13]
As from December 2000, Nigeria became a happy hunting ground to many foreign telecommunications companies competing for the coveted Nigerian Communications Commission's (NCC) GSM licenses. By January 2001, the Commission conducted an auction for Digital Mobile Licenses. This auction was acclaimed locally and internationally as one of the best in the world due to the high level of transparency associated with the exercise. The auction brought about the emergence of three mobile Operators; ECONET Wireless now (AIRTEL), MTN and MTEL, a subsidiary of the incumbent operator. In 2002 a fourth Digital Mobile License (DML) was issued to Globacom (Glomobile) through another transparent auction process. As the competition became keen, a fifth Mobile License was awarded to ETISALAT, in 2007. Consequently, since then, the Nigerian telecomm market has been a haven for the GSM companies, competing for market shares.[14] Each of these companies paid 285 million dollars in 2001 as license fee except for Globacom, which got its license later in 2002 for 200 million dollars.[15] Unarguably, this sector apart from the petroleum industry has become a robust area of revenue generation.

The Telephone Revolution in Africa

Despite the significant position of Africa when it comes to the world's land mass and population, the continent exhibited relatively slower and trivial levels of development in terms of telecommunications when compared to other nations. Colonial powers initiated the use of these technologies in the African countries, for the most part, as an instrument of authority and control. Such endeavours eventually facilitated the association between technological advancement and economic growth at independence. However, colonialism failed to meet the needs and demands of a budding information-oriented economy as it left Africa with insufficient hardware and outdated institutional structure. This was aggravated by the lack of indigenous technical knowledge, resources and financial assistance, especially in poorer states.[16] Telecommunications services in Africa received less development immediately after independence. The problem of telecommunications development in the continent was on the one hand limited resources and on the other hand the burden of international indebtedness and the increasing protectionism worldwide with the associated impact on the transfer of appropriate technology. Thus most African countries established their basic national communications network on a small scale concentrated in the urban areas serving insufficiently the ever-increasing demand for telephone and others.[17] In 1994, only one African country had more than five main lines per hundred population. Almost 40 percent of Africa's telephone lines were concentrated in a single country, South Africa. The other sub-Saharan African countries that accounts for 80 percent of the continent's population were served by only 10 percent of its phone lines.[18] However, by the first decade of the 20th century a major revolution occurred in the African telecommunication sector.

The adoption of the mobile phone in Africa is a tremendous alternative for the fixed telephone line, which has led to significant advantages in terms of coverage areas and connectivity of the population, particularly where the services of fixed phones are not reliable.[19] It has to be noted that before the telephone/GSM revolution in Africa, landline telephone service was very far from the reach of most Africans. Moreover, the high cost of service and monopolies involved, made the telephone a luxury in Africa. The public did not dream that the use of the telephone would ever become so universal as to make it a household necessity. Money was also scarce for the industry.[20] Where a government was ready to fund a national telecommunication company, those at the helms of affairs were ready to embezzle such funds. The telephone revolution generally has to do with the introduction and proliferation of the wireless telephone in Africa. This occurred majorly due to the fact that the conventional landlines were expensive, exclusive and often unreliable. Nigeria offers a salient example in which NITEL, the national telecommunications body monopolised telecommunications services and was only able to provide a mere 500,000 landlines for a population of over 100 million people.[21] The Nigerian telecommunications sector was grossly underdeveloped before the sector was deregulated under the military regime of General Ibrahim Babangida in 1992 with the establishment of a regulatory body, the Nigerian Communication Commission (NCC). The deregulation led to issuance of various licenses to private telecommunications operators. These licenses allowed private telephone operators (PTOs), to roll out both fixed wireless telephone lines and analogue mobile phones. However, the return of democracy in 1999 paved the way for the granting of GSM license to three service providers: MTN, Nigeria, ECONET Wireless, Nigeria and NITEL Plc in 2001.[22] Thus, when GSM digital mobile phones were introduced it was a great relief from NITEL's monopoly and the interminably long and money consuming process of getting a phone line connected. Consequently, the number of subscribers rose to about 7 million subscribers in 2004[23] making Nigeria the only African country with the highest subscribers of the GSM

[12] Anthony A. Ijewere and Gbandi E.C.,Telecommunications Reform in Nigeria. :193 See also Ajayi, O., Salawu, R.I and Raji T.I., "A Century of Telecommunications Development in Nigeria-What Next?" : 74

[13] Anthony A. Ijewere and Gbandi E.C.,Telecommunications Reform in Nigeria:194

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[17] Charles Aloo, "Development of Telecommunications Infrastructure in Africa: Network Evolution, Present Status and Future Development" *Africa Media Review* (Vol. 2 No. 3 1988): 25-26

[18] Noam, L Eli *Telecommunications in Africa*

[19] Chabossou Augustin Foster Fixed and mobile telephones in West African Economic Monetary Union countries: complementary or substitute services? Journal of African Studies and Development Vol. 7(11) (November 2015): 258-259

[20] Harry Barsantee "The History and Development of the Telephone in Wisconsin", : 155

[21] Agar Jon, *Constant Touch: Global History of the Mobile Phone,* (Icon Books Ltd. London,2013)

[22] Anthony A. Ijewere and Gbandi E.C.,Telecommunications Reform in Nigeria: 193

[23] Nigerian Communications Commission: Subscribers Statistics. http://www.ncc.gov.ng/index.php?option=com_content&view=article&id=125:

Elsewhere in Africa, the cases were similar. Prior to the introduction of the GSM in Kenya, in 1999 Telkom Kenya Ltd, the country's telecommunications company had a subscriber base of only 260,000 out of a population of 28,000,000 (a penetration rate of 1%). Demand for services existed but was simply ignored or neglected. However, after liberalization in 1999, and up to 2005 there were more than 4.6 million wireless subscribers in Kenya, split between the two carriers. By 2008 this had grown to about 11 million subscribers.[24] From less than 100,000 subscribers in 2003,[25] Rwanda's mobile penetration rate was at 72.6% with over 8.1 million subscribers in 2015.[26] Egypt with about 93 million subscribers and south Africa with about 60 million users.[27]

The telephone revolution in Africa can be traced to the launching of communications African satellites into the orbit. It would be recalled that the first satellite communications Intellisat III covering Africa had been launched over the Indian Ocean by 1969; although, it covered the African continent but African countries could not communicate directly. Most calls from one African country to another were routed through Europe and North America at very high cost. For example, calls from Brazzaville in the Republic of Congo to Kinshasa in the Democratic Republic of Congo were routed through Paris and Kinshasa. Brazzaville and Kinshasa are on opposite banks of the same river![28] Apart from the economy disadvantages, Africa was not safe as the European network providers inadvertently and consciously or unconsciously tapped classified information to and from Africa. South Africa, Algeria and Nigeria later in the first decade of the twenty first century individually launched communications satellites to boost telephony and the ICT in general. The peculiarity is that Nigeria's satellite is the first communication satellite that would be launched on the continent by any country on the continent. It is also the first satellite which major coverage area is the continent. Africa has always been a secondary area of coverage for all existing communication satellites. Consequently, a halt was put to the over $800 million paid into the account of European and American satellite companies annually for bandwidth services consumed by an array of public and private institutions ranging from telecom companies, broadcasting companies, schools, banks and government ministries to operators in the oil and gas industry. To complement this, for Africa, Libya under the leadership of Muammar Gaddafi aided Africa in upgrading to a new global telecommunications technology – connecting the entire continent by telephone, television, radio broadcasting and several other technological applications such as telemedicine and distance teaching. It began in 1992, when 45 African nations established the Regional African Satellite Communication Organization (RASCOM) so that Africa would have its own satellite and slash communication costs in the continent. This was a time when phone calls to and from Africa were the most expensive in the world because of the annual US$500 million fee pocketed by Europe for the use of its satellites like Intelsat for phone conversations, including those within the same country. Africa only needed $400 million to procure a satellite in order to put an end to outrageous annual billings of $500 million The World Bank, the International Monetary Fund, the USA and Europe only made vague promises for fourteen years. Putting an end to these futile pleas to the western world with their exorbitant interest rates, the Libyan leader put US$300 million on the table; the African Development Bank added US$50 million more and the West African Development Bank a further US$27 million. Thus, Africa as a continent got its first communications satellite on 26 December 2007.[29] Since the introduction of mobile telephone in Africa, the continent has undergone tremendous change. As the statistics show, 1 in 50 Africans had access to a mobile phone in 2000 and by 2008 the figure was 1 in 3. This is a revolution in terms of voice communication, especially for areas where land lines were still rare at the end of the 20th century.[30] The spread of the mobile phone was possible because of market liberalisation that allowed private telephone companies to enter the marketand enabled the rapid introduction of new technology. It was easily embraced in the local economy as another means of creating an income.[31]

Mobile Phone Industry and Employment Generation

Communication without doubt is a major driver of any economy. Emerging trends in socio-economic growth shows a high premium being placed on information and communication technology (ICT) by homes, organisations, and nations.[32] The advent of mobile phones has great implications for the socio-economic development of Africa in general. Since inception, the GSM sector has emerged to be the leading source of government revenue through taxation. At the end of 2008, the total number of mobile subscriptions in Africa reached about 375 million, up from 280 million in 2007. Ten African markets generate more than USD 1 billion in mobile services revenue each year, including such large economies as South Africa and Nigeria, but also markets such as Cote-d'Ivoire and Angola. Six markets fall in the USD 500 million-1 billion revenue range and nine markets generate between USD 200 million and USD 500 million, a substantial opportunity for the private and the public communication need to stimulate and promote trade between Nigeria and its foreign partners in the world. Even at home, it plays an advocacy role in communicating government programmes thereby linking to entire sectors of the economy together in order to achieve a common goal. Above all, it encourages investment, which in the long run promotes employment opportunities. At microeconomic level, the sector's contribution to GDP increased by 53% in 2003 making it the third highest contributor ahead of the financial

subscriber-statistics&catid=65:industry-information&Itemid=73

[24] Charles Aloo, "Development of Telecommunications Infrastructure in Africa: Network Evolution, Present Status and Future Development" *Africa Media Review* (Vol. 2 No. 3 1988):

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[29] Jean-Paul Pougala, Muammar Gaddafi, the African Who Cleansed the Continent from the Humiliation of Apartheid phon:e gadafi2 https://libya360.wordpress.com/2013/12/20/muammar-gaddafi-the-african-who-cleansed-the-continent-from-the-humiliation-of-apartheid/

[30] Mirjam de Bruijin, Francis B. Nyamnjoh &Inge Brinkman "Mobile Communication and New Social Space in Africa" in *Mobile Phones: The New Talkin Drums of Everyday Africa* Mirjam de Bruijin, Francis B. Nyamnjoh &Inge Brinkman(eds.) (Langaa and African Studies Centre, 2009) :11

[31] Mirjam de Bruijin, Francis B. Nyamnjoh &Inge Brinkman "Mobile Communication and New Social Space, : 23

[32] Anthony A. Ijewere and Gbandi E.C.,Telecommunications Reform in Nigeria: 193

sector which has been in operation for about 100 years. It has attracted foreign direct investment of about $5billion. As it has to do with employment, over 135, 000 people have been directly or indirectly employed by the operators and their distribution chain components. The industries support service sectors such as banking, insurance, consultancies (legal, accounting, HR, tax) haulage, shipping and IT, as well as the small and medium scale Enterprises (SME) segment of the economy have also witnessed very significant levels of increased activity.[33] Nigeria's telecoms industry generated $9.8b in 2014 contributing 1.7% to Gross Domestic Product.[34] Micro-entrepreneurs have embraced the mobile phone at an unprecedented rate, eclipsing the landline. Micro-entrepreneurs run their own small business and are recognised as a major source of employment in Africa – vital in securing household income and thus contributing to poverty alleviation.[35] In Nigeria for example, the sector is the highest sector that has employed both skilled and unskilled manpower in recent times. A great number of people especially the young graduates are employment in telecommunications companies and are highly paid thus, making the sector the most paid industry in Nigeria after the petroleum industry.

The economics of the communications industry are multifaceted. They are woven round the mobile phone itself and the service providers. It is a known fact that the mobile phone needs a service network before its functions effectively. Both the mobile phone and the network providers are sources of employment to millions of Nigerians. Africa's biggest phone market located in Lagos Nigeria popularly referred to as "computer village", offers salient examples of how the mobile phone serves as a veritable income generation phenomenon and thus bourgeoning the informal sector of the economy. Telephone sales (wholesale and retail), repairs and servicing are carried out throughout the market. Major phone manufacturing agents especially from china are well represented in the market. From here, several phones are marketed to other parts of Nigeria.[36] It has to be noted that telephones find their way to other parts of Nigeria through other avenues, but Lagos remains the major source through which these imported commodities get to other parts of Nigeria. Similarly, phone markets abound in every part of the country, especially in the busy areas. As a source of employment, capital for business could be raised through loans, cash donations or savings depending on the individual. On the accumulation of a substantial capital ranging from 150 naira, a busy area is thereafter located where shops or a space could be rented. It is also worthy of note that both the educated and non educated engage themselves in all kinds of businesses associated with phone or GSM.[37] By the same token, sales of phone accessories such as charger, ear piece, batteries, integrated circuits, screen, touch pads, cases, keypads, chords, serve as another area of specialisation. Sales of these items are done close to the location where phones are sold or where phone are repaired or serviced. In Ibadan, for example, places like Iwo road and Dugbe offer examples of the typical Nigerian "phone village". New phone, used phone or 'tokunbo' phones including their spare parts are on display along the road while phone-manufacturing agents and marketers are located close by. Not only are the people involved earn a daily income of between 5,000 to 20,000 naira,[38] they also contribute to revenue generation of the state. For example, apart from the rent, these small-scale business entrepreneurs pay owners of the shops or spaces they use for their businesses, government derives taxes from these economic activities.

There have emerged many technicians, who either by instinct or by local training, found themselves carrying out repairs on mobile phones, just as there are schooled technicians and trained engineers. They are indispensable when it come to getting damaged phones back to good working conditions. While most of these technicians are located close to mobile phone markets, some others erect small kiosks within a neighbourhood combining phone repairs with sale of recharge cards and phone accessories. Mobile phone engineers in the technical departments of most phone dealers in Ikeja Computer Village make between N50, 000 and N80, 000 from a single shop on repairs alone on daily basis, and there are several of such big shops where repairs are carried out in the market.[39] Outside Lagos, in places like Ibadan and Akure, mobile phone technicians make between 3,500 and 5,000 daily.[40] Thus, a good source of capital accumulation has been provided through mobile phone repairs. Perhaps, the importance of this aspect of the GSM economy as a salient example of small and medium-scale entrepreneur has prompted the Senior School Certificate Examinations to integrated Phones and GSM engineering and repairs into the curriculum. Another business generated by the advent of the GSM is making of calls and the sale of recharge cards to mobile phone users often done in kiosks and umbrella-sheltered shops referred to as 'business centres' or 'call centres'.[41] A simple public payphone centre can be established with as little as N12, 300 with an average monthly profit range of between N7, 000 and N25, 000 depending on the location of the pay phone operators. This makes it an attractive option for any potential job seeker.[42] All over the cities, towns and even villages, during the first decade of GSM in Nigeria, one would hardly walk about two poles without seeing a business centre mainly characterized by the use of network providers branded umbrellas, kiosks and even shops painted with the colours of the mobile service providers. However, with the cutting down of phone calls tariff and the production of generally and easily affordable vouchers, the call centres are almost phasing out but the sales of recharge cards still subsist. At first, the production of credit vouchers was the sole responsibility of the individual network operators with production and importation of same into Nigeria. It would be recalled that recharge cards were imported into Nigeria by these licensed service providers but were later banned by government due to the staggering implications of foreign exchange. The resultant effect was that a number of companies emerged in Nigeria printing over 140 million recharge cards

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[36] Okafor Uchenna (2016, May 12). Personal Interview, Ikeja, Lagos.

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[38] Chidiebere Alo (2016, May 05). Personal interview, Ibadan.

[39] Calistus Ogbonna (2016, May 12). Personal Interview, Ikeja, Lagos.

[40] Oluwafemi Adesulure (2016, May 24) Personal Interview, Akure

[41] Kenneth Omeruo "The Impact Of GSM Mobile Phones on Nigerians" http://www.techtrendsng.com/author/kenneth/

[42] Chukwuemeka Ifegwu Eke Global System for Mobile (GSM) Communication and Urban Employment in Nigeria: A case of Abuja. M Sc Dissertation, Department of Economics, University of Abuja: 25-26

monthly and saving Nigeria millions of dollars and providing employment and new skills. [43] The demands for credit vouchers became so great that the network operators had to engage the services of licensed dealers for the effective circulation of cards. Thus, major dealers and sub-dealers were engaged to carry out the task. At the earlier stage, huge sums of money was required to become sub-dealer to any of these operators until sub-dealers and resellers were authorised to print recharge cards with the purchase of pins from the network operators. [44] This became another viable area of investment. With as low as 100 thousand naira, individuals could buy pins from network providers and print them out in different units of value.

Another division of the GSM SME is the sales, registration and recovery of SIM cards. It is estimated that the existing network providers in Nigeria namely GLO Mobile, MTN, Etisalat, Visaphone and Airtell have up to 148 million subscribers.[45] The subscriber identification module, (SIM) cards are sometimes damaged, lost, stolen or even blocked. Therefore, replacement or retrieval becomes inevitable by the users. The process of replacement and retrieval has also become another area of business associated with the GSM. Generally, the network providers are responsible for the replacement and retrieval of SIM cards. At the earliest stage of the GSM in Nigeria, retrieving a SIM card was a long and rigorous exercise. However, network providers simplified the process by establishing outlets in various parts of Nigerian cities and provided online methods through which blocked phone lines or SIM cards could be retrieved. Thus, subscribers who are not within the reach of any of the offices of the network providers, and who are unable to do retrieval on their own have no other choice than to patronise those who have made a business out of retrieving SIMs for subscribers. Because they have mastered the unlocking codes and are highly proficient in the use of the internet, it is easy to solve most problems associated with the SIM for a token of between N100 and N500 per SIM.[46]

Socio-economic Impact of the GSM on Africa

African and the world in general, willingly or unwillingly are swiftly engulfed by the strong wind and tide of socio-cultural globalization. Unarguably, the Nigerian society like any other society is strongly influenced by Information and Communication Technologies; the principal actors in the globalization script.[47] The mobile phone remains one of the principal factors that make globalization possible. This is because the mobile phones have further enhanced social and economic interactions of global dimensions. Mobile telephone has increased the proficiency of the use of the internet. With the introduction of the smart phone, internet activities and on-line transactions, which ordinarily were the exclusive obligations of the computers, are now conveniently done on the mobile phones. Thus, telephone and other telecommunication services such as the internet have in no small measure contributed immensely to the acceleration of business activities and general growth in the economy. Traders in the rural areas can now order for goods from the urban areas without necessary travelling for such transaction. Information on prices, availability and in most cases demand for goods and services as well as expertise advice are shared on the telephone without physical presence. Telephones conferencing had made it possible for an organization to hold meetings for workers from different locations, for example, Benin, Port-Harcourt, Warri and Lagos without the worker travelling to a particular location for such meetings. This has saved most organizations the time, money, inconveniences and the risk of accidents on roads or flight.[48]

Indeed, the telecoms sector has become one of the main sources of foreign direct investment in Africa in general and in Nigeria in particular. Often only supplanted by the oil and gas sector, revenue and expenditures from the new telecommunications sector now contribute a combined 5% to as much as 10% of GDP in many African countries. African mobile network capital expenditure reached around USD 12.5 billion in 2008, and investment in communications has reached around 5-6% of total investment spending on the continent. In addition, the mobile sector has had a notable contribution to employment, directly, and indirectly through the establishment of extensive networks of dealers, sub-dealers and sub-contractors. In Nigeria for example, as at 2006, MTN's distribution network includes more than 10,000 sub-dealers, 30,000 sub-sub-dealers and more than 50,000 retail points and street hawkers.[49] Mobile telephony has brought new possibilities to the continent. Across urban– rural and rich–poor divides, mobile phones connect individuals to individuals, information, markets, and services.[50] Mobile phones then have contributed to the growth of the informal sector through employment creation in selling credit, repairing phones, etc., which is beneficial in terms of new livelihoods, but problematic in terms of its longer-term development impacts. While mobile telephony may be helpful to certain informal sector enterprises, the sale of credit to poor populations working in the informal economy could also be regarded as an example where the formal sector is extracting social surplus from the informal sector adverse articulation, or exploitative functional dualism between the two "circuits" of the economy.[51] In Nigeria, the entrance of Global System for Mobile Communications (GSM) operators since 2001 has had a positive impact on the culture and life of Nigerians. It generated employment for many unemployed able persons. The industry currently directly employs about 10,000 professionals and is indirectly responsible for another 1,000,000 jobs.[52]

[43] Vincent, I Maduka , "P &T, GSM and Beyond" *Nigeria: the Challenges of Growth and Development*; 102

[44] Emeka Alo (2016, May) Personal interview, Ibadan

[45] Nigerian Communications Commission. (2010), "Determination on Dominance in Selected Communications Markets in Nigeria" :http://www.ncc.gov.ng/RegulatorFramework/LegalNCC_Dominance_Determination.pdf, accessed 04/05/2016

[46] Justine Agwu (2016, May 14) Personal Interview, Lagos.

[47] Ohiagu, O.P "Influence of information & communication technologies on the
Nigerian society and culture." In N. Ekeanyanwu and C. Okeke (Eds.), *Indigenous societies and cultural globalization in the 21st century.* (Germany: VDM Verlag Dr. Muller Aktiengesellschaft & Co, 2010).

[48] Anthony A. Ijewere and Gbandi E.C.,Telecommunications Reform in Nigeria: 105

[49] Guy Zibi "The African Mobile Phone Market: Beyond the Boom Phase, Between the Promise and Uncertainty of Maturity" *Private Sector Development* (Issue 4 November 2009): 5

[50] Jenny C. Aker and Isaac M. Mbiti "Mobile Phones and Economic Development in Africa" *Journal of Economic Perspectives (Volume 24, Number 3 Summer 2010)*

[51] Pádraig Carmody "The Informationalization of Poverty in Africa? Mobile Phones and Economic Structure" 2 *Information Technologies & International Development (*Volume 8, Number 3, Fall 2012): 13

[52] Akanbi, B.E Ogunleye A.G ; Akanbi C.O and Isah, H.A "The Impact Nigeria's Telecommunication Services Expansion on National Economic Growth" *British Journal of Advance Academic Research* (Volume 2 Number 1 2013) :128

The great improvement in access to telecommunication in Nigeria has had an impact in all facets of life in the country especially in its social and economic development. GSM is also believed to have contributed to the improvement in the living condition of people in both urban and rural areas in Nigeria by allowing them to communicate easily amongst themselves. Social and family relationships have also been significantly enhanced. GSM promotes social cohesion in families and societies. It allows families to remain as a coherent unit, when family members are away for long periods. In cases where a family member is abroad either temporarily or permanently, it allows the family unit to remain intact. GSM also helps build stronger bonds with friends, co-workers and business associates. The deployment of GSM has also helped to bridge the digital divide and bring modern telecommunication services to underserved communities in Nigeria.[53] Conversely, GSM has also helped increase the rate of crime in the country in that it has aided the activities of armed robbers, increased fraudulent activities like Advanced fee fraud (419). While most young men and women tap into the opportunity of wealth creation introduced by mobile telephony, others see it as an opportunity to defraud subscribers of mobile phones. In Nigeria for example, fraudulent calls and text messages have been on the increase and so many people have been duped through GSM as tempting offers are sent to victims who unknowingly fall into the hands of fraudsters. GSM also encourages dishonesty among Nigerians in that people lie easily with it. Indeed, the Nigerian economy has been impacted positively through job creation, improved business performance, social integration and timely information exchange. The economy has also been impacted negatively in that GSM has aided the activities of armed robbers, increased fraudulent activities like advanced fee fraud and encouraged dishonesty among Nigerians. Similarly, the advent of the GSM has arguably constituted a nuisance to the built environment. In order to enhance their network, the telecommunications service providers resorted to the establishment of base stations within the cities in which high towers often referred to as masts have been erected. Safe for the fact that telephone networks have been improved over the years and they can be a ready source of real-estate income for a landowner, they can constitute an aerial eyesore and an environmental nuisance.[54]

Conclusion

Evidences from the foregoing reinforce the avowal that there is a symbiotic correlation between the mobile phone, GSM and Africa's socio-economic development. In spite of the 'stories of horror, terror and stunted growth' so far recorded of postcolonial Africa, this paper concludes that Africa has actually recorded great progress in the areas of mobile telecommunications, which is an integral aspect of the ICT and a compound agent of globalisation. GSM has contributed in no small measure to employment creation, poverty reduction, revenue generation and improvement of local and international social interactions.

[53] Okafor, Chidinma Nwando Global System of Mobile Communications (GSM) in Nigeria for Development: An Apprasial of Asaba Metropolis M Sc Dissertation, Department of Mass Communication Nnamdi Azikiwe University, Awka, 2012 :69-71

[54] Vincent, I Maduka , "P &T, GSM and Beyond" *Nigeria: the Challenges of Growth and Development* (The House of Lord, Nigeria, 2016):102

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