MUSIC PRODUCTION AND DISTRIBUTION IN NIGERIA: CHALLENGES AND PROSPECTS FOR ENVIRONMENTAL SUSTAINABILITY

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ABSTRACT

This paper discusses the production and distribution of music as a catalyst for socio-economic changes affecting the environmental sustainability in Nigeria. The various stages in the development of Nigerian music ecosystem, particularly as it concerns the ecological role of producer-agents (human and mechanised agents such as the use of AI in music creation), managers, singers, distribution agencies (record labels, musicians and producers, and various streaming platforms) and the copyright palaver are also significant subjects of examination here. The investigation tries to understand not only the historical path of the development of the music industry in Nigeria but also the different change phenomenon occurring today in the world with regard to the digitalization technology in music creation and dissemination and how these changes affect the environment negatively or positively. Issues raised in the paper include, how the Nigerian music industry can square up with the current world's trend of creating a sustainable environment for human development. What are the challenges music production and marketing in Nigeria face and what are the prospects for a sustainable environment?

Key words: Music production, distribution, Nigerian music industry, technological innovations, environment, sustainable development.

INTRODUCTION

A search through the web and libraries reveals a dearth of publications on such thematic alignments or combinations as music production/consumption vis-a-vis environmental sustainability. This spells out the novelty and significance of this research paper and likewise the main challenge it faces. It will attempt to align the new concepts of Music production and consumption with that of the environmental sustainability, the seventh objective of the United Nations eight-millennium development goals. Some top technological innovations such as Digital Audio Workstations (DAWs), Auto-Tune, streaming services, social media, and Virtual Reality (VR) and Augmented Reality (AR) have revolutionised the music industry, playing a crucial role in shaping the way people create music, distribute and consume it today. Thus, the main task of this paper is to find out the extent of the impact of some of these new technological innovations in the music industry in Nigeria and the world at large have made on our environment that favours and promotes a lasting and an integral development of the Nigerian people. The research begins immediately with a brief survey of the historical origin and development of music production and dissemination in Nigeria.

MUSIC PRODUCTION AND DISTRIBUTION IN NIGERIA

In Nigeria, music production and distribution (predominantly of folklores) in the ancient times occurred certainly through oral tradition, which has memory as its bedrock for preservation and reproduction of information. This oral method of handing over musical knowledge in the

traditional society, which music educators consider as an informal music education method, is still practised today in some remote Nigerian towns and villages. Different Ethnic groups continue to transmit orally their Cultural values, folklores, music and traditional dances, children rhymes, etc. from generation to generation. This practice was then the sole means of music production and dissemination in the traditional society. Music scholars and educationist may wave this traditional method of music education aside as already overtaken by time and new trends. However, one may not deny the fact that it served its purpose at the time and continues to be useful to those who still practise it. The frailties of human memory notwithstanding, orality helped to develop even in music education of the people sharp and retentive memories. Although there has been a long-run shift from almost purely oral tradition to purely literary cultures,[1] yet the continuing importance of oral transmission in the late twentieth century cannot be overemphasized. The practice of teaching music by rote, a method of music education that emphasizes orality as against literacy, still holds sway in many places in Nigeria.

Early Attempts to Music Storage

The human effort toward production, preservation and circulation of music can be ascribed to the early attempts of the inventors such as Edouard-Leon Scott (1850-60) to create audio using historical mechanisms like the phonautograph, "the oldest known intelligible recording of the human voice."[2] With this phonoautograph a test recording of the then popular French song "Au clair de la lune, mon ami Pierrot, prête-m—" was demonstrated. Later the Thomas Edison's invention of phonograph in 1877 superseded the Edouard-Leon Scott's phonoautograph.

Analog Era

The discovery of a phonograph record (also known as a gramophone record, especially in British English), and later varieties known as vinyl record or simply a record, marks the beginning of the analogue era. Vinyl is an analogue sound storage medium in the form of a flat disc with an inscribed, modulated spiral groove as the picture below illustrates. "The groove usually starts near the periphery and ends near the centre of the disc."[3]

[1] See Patricia M. Thane, "Oral History, Memory and Written Tradition: An Introduction," *Transactions of the Royal Historical Society*, Vol. 9 (1999), pp. 161-168, published by Cambridge University Press.
[2] See "Phonoautograph" in online Encyclopaedia *Wikipaedia*, accessed 8th November 2023, 11.30 am.
[3] James Savard, "The Evolution of Song Storage," accessed 15th Nov. 2023, 12 noon from www.axiom.com.

For about half a century, the discs were commonly made from shellac, with earlier records having a fine abrasive filler mixed in. Starting in the 1940s, polyvinyl chloride (PVC) became common. Up until the late 20th century, "vinyl records" predominated the market. However, interest in its use for music recording and dissemination started to dwindle, firstly, because it was not portable and a bit bulky. Thus, one has to wait until one reaches home for the opportunity to listen to your favourite tracks. Secondly, it was not durable. It also got spoilt easily.

Later, cassette tapes or compact cassettes, an invention of a Philip's Company in 1962 in Belgium took over the stage. See below the picture of some examples of cassette tapes and player.

This was first released to the European market at the Berlin Radio show in 1963 and the next year in America. The plastic exterior of the Compact Cassette holds two small spools. These milk or white coloured spools wind the magnetic-coated film and pass it from one side to the other. The magnetic film is where the audio content is stored and can be recorded on a cassette tape. It was a great technological innovation, which made listening to music easy, convenient and one could take ones favourite music with oneself to wherever. In short, cassette tape was

on-the-go-friendly than the vinyl records. With all these inventions accessible in Nigerian music industry, one, therefore, can rightly claim that as far as music production and consumption in Nigeria today is concerned, orality has given way to musical literacy.

Digital Era

Digital era starts with the introduction of Compact Disc (CDs). Nigerian music industry, like the rest of the world, started the production and distribution of music in the Analog format namely in gramophone, vinyl records and cassettes or Tapes in the 1960s and 70s. Later in 1983, it graduated to a digital era of Compact Disc (CDs) that still exists to date, though the gradual decline of its use has already started in the 1990s due to the introduction of the MP3, a coding format for digital audio developed by the Frauenhofer society-a German research institute led by Karlheinz Brandenburg. Furthermore, MP3 is part of MPEG[4] Audio Layer III—a standard for audio compression that makes any music file smaller with little or no loss of sound quality. By using MPEG audio coding, one can shrink down the original sound data from a CD by a factor of 12, without losing sound quality. The significance of this audio technological breakthrough is that one can carry about several CDs compressed just in one mp3. The latest of the technological manoeuvres in music production and dissemination comes in the form of various music streaming platforms, the popular among which include *Spotify, Apple Music, YouTube Music, MixCloud, Amazon Music Unlimited, Google Play Music, Soundcloud, Primephonic, Pandora, Tidal*. With music streaming services, you can build your library and own playlist, search for music by the name of the artist and by his or her album, create and share your own playlist with other people. Listen to songs anywhere anytime, and have access to wide-range of varieties of songs. Added advantages of streaming music services are, browsing songs in a variety of languages, organize albums automatically, mix up the songs with shuffle feature, discover popular songs with ease, and having the opportunity to download your interesting songs.

Music streaming services do not cost much in comparison to other various systems of music production and consumption already discussed in this paper. While some music streaming services are free to use, some provide affordable monthly, quarterly, half-yearly, and yearly plans to their users. Besides, almost all music-streaming services offer free trials, so they become easy for users to choose the best and affordable music streaming service suitable for them[5] and makes music-marketing task easier and far-reaching to consumers.

ENVIRONMENTAL SUSTAINABILITY

The concepts of environmental and sustainability have been studied extensively over the last 30 years. The literature discussing themes such as sustainable, sustainability, and environmental sustainability is wide-ranging, linking a variety of interconnected human behaviours, practices, and skills that achieve sustainability outcomes.

Environmental sustainability is one of the key strategic development goals of the 2030 Agenda for Sustainable Development (2030 Agenda), which was developed and adopted in 2015 by

[4] MPEG is an acronym for Motion Pictures Expert Group, which is a family of standards for displaying video and audio using lossy compression (in which random partial data is irreversibly discarded, allowing the remainder to represent a compressed version of the original). Christensson, P. (2017, October 30). *MPEG Definition*. Retrieved 2024, Mar 13, from https://techterms.com.

[5] See *22 Best Music Streaming Services and Sites* (2024), accessed Tuesday, 12th March 2024, 10.55am.

the United Nations Member States, containing 17 main Sustainable Development Goals (SDGs). According to Anzhelika Karaeva et al (2023), environmental sustainability implies "the maximum possible reduction of negative environmental impact through the development of green energy, the increase in energy efficiency, the rational use of natural resources, the introduction of the principles of circular economy and increasing public awareness of environmental protection and climate conservation."[6] In line with the above concept, the ground is now ready for the examination of the environmental impact of music production and dissemination.

THE EVALUATION OF THE ENVIRONMENTAL IMPACT OF MUSIC PRODUCTION AND CONSUMPTION

The technological innovations in music production and consumption discussed in this paper have definitely dual impact on the human and environmental development in Nigeria. On one hand, are some environmentally friendly and sustainable innovations and on the other hand are the unsustainable ones with some adverse effects on the environment and on the human person. In the words of Patat and Shutterstock (2019), it is shocking to know that "our favourite way of listening to music might have a bigger environmental impact than we think."[7] Most of the materials and formats used in the storage and dissemination of music such as Vinyl records, Cassette tapes and CDs, except the album covers (made of recyclable cardboards), are made of non-recyclables and thus are not environmental friendly.

Vinyl Records

As already explained in this paper, gramophone records were originally made of shellac,[8] but because of the low durability nature of this substance it was replaced with non-recyclable vinyl from PVC plastic substances, which promised high durability. Commenting on this, Patat and Shutterstock writes:

> Shellac records were brittle and prone to water and alcohol damage though, so PVC plastic records were developed to last longer. In ideal conditions (low oxygen, without movement), discarded PVC could take centuries to decompose. However, the environmental conditions of most landfill sites (which have varying soil acidity and temperatures) can cause discarded PVC albums to leach plasticisers (solvents added to plastics to make them more flexible and resilient). They may even outlive the site itself or escape into the environment as pollutants. Modern records typically contain around 135g of PVC material with a carbon footprint of 0.5kg of CO_2 (based on 3.4kg of CO_2 per 1kg of PVC). Sales of 4.1m records would produce 1.9 thousand tonnes of CO_2 – not taking transport and packaging into account. That is the entire footprint of almost 400 people per year.[9]

Even though PVC plastic records last longer than the shellac records, their return to the music market must be seriously discouraged. Their decomposition takes centuries. Hence, they are unrecyclable and will eventually escape into our environment constituting terrible environmental pollutants and hazard.

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[6] Anzhelika Karaeva et al, *Environmental sustainability for traditional energy small and medium enterprises*, Springerlink April 30 (16) 2023, accessed 30th Nov. 2024, 1pm.
[7] Patat/ Shutterstock *The environmental impact of music: digital, records, CDs analysed* Published: January 10, 2019 12.24pm CET, *The Conversation*, accessed March 13, 2024, 06.55 am.
[8] Shellac is a natural resin secreted by the female Kerria lacca bug, which was scraped from trees to produce gramophone records. See Patat and Shutterstock (2019).
[9] Patat/ Shutterstock (2019).

Cassette Tapes

As the research paper shows, cassette tapes appeared in the 1960s and 70s as an apparent replacement of their predecessor (vinyl records). Though they purported to be a more eco-friendly alternative to vinyl, they come with their own set of environmental challenges. First, the manufacturing process of cassette tapes (the plastic exterior, the two internal spools and the magnetic coated film) involves the use of several hazardous materials, including petroleum-based plastics, magnetic particles, and metals like chromium and cobalt. The extraction and production of these materials contribute to air and water pollution, as well as habitat destruction. Secondly, their limited lifespan and the resulting waste generated is a matter of significant environmental concern. Cassette tapes deteriorate over time and are prone to damage from heat, humidity, and magnetic fields. This leads to a constant need for replacement tapes, perpetuating a cycle of material extraction, production, and waste generation. A landfill filled with obsolete and non-biodegradable cassette tapes poses a looming threat to the environment. Thirdly, the plastic exterior of cassette tapes, like the vinyl records, is non-recyclable. Hence, the disposal of cassette tapes further compounds their environmental impact. Due to their complex composition and lack of dedicated recycling infrastructure, most cassette tapes end up in landfills, where they release toxic chemicals and contribute to the growing plastic pollution crisis. The environmental costs of cassette tapes, therefore, extend beyond their production and use phase, and have lasting consequences for our ecosystems.

CDs (Compact Discs)

The introduction of Compact Discs (CDs) in the 80s to replace the Cassette tapes was perhaps an attempt to flee from the environmental related issues, heavy financial burden incurred from the cassette tapes' production and the quest for a better digital sound production format. Indeed, digital music production (such as in CDs) offered durability and better sound quality than the analog formats. CDs are made of layered polycarbonate and aluminium, which has slightly less environmental impact than PVC. They are manufactured using fewer materials than records. However, CDs, encased in a fragile polycarbonate cases, are more expensive to produce and are non-recyclable. Its production involves a mixture of two materials that are difficult and uneconomical to separate into their component parts for recycling purposes. Most of the CDs damaged by direct exposure to sunlight and heat, warped by fast-changing temperatures, gravity, scratches, fingerprints and smudges, like vinyl records and cassette tapes, end up finally in landfills and thereby constitute a serious environmental threat.

Music streaming Platforms

Music streaming is currently the highest of the digital technologies in the production and consumption of music. It offers the entire music world almost a flawless music quality without physical deterioration. With it, music is easy to copy and upload, and can be streamed online without downloading. Yes, its music production and dissemination is less tangible and cost-bearable than vinyl or CDs formats, but is it also more environmentally friendly? Does its being material-free, also mean it has no environmental negative impact?

Critics of the music streaming platforms hold that streaming is dangerous to the environment. Their major reason being that it consumes too much energy. According to John Blistein, "New

study suggests streaming music leads to at least 200 to 350 million kilograms of greenhouse gas emissions."[10] Corroborating Blistein's view Patat and Shutterstock remarked:

> The electronic files we download are stored on active, cooled servers. The information is then retrieved and transmitted across the network to a router, which is transferred by wifi to our electronic devices. This happens every time we stream a track, which costs energy. Once vinyl is purchased, it can be played over and over again, the only carbon cost coming from running the record player. However, if we listen to our streamed music using a hifi sound system it is estimated to use 107-kilowatt hours of electricity a year, costing about £15.00 to run. A CD player uses 34.7 kilowatt hours a year and costs £5 to run.[11]

Music streaming goes against the norms of environmental sustainability by promoting activities involving high-energy consumption today when the world is going for low energy consuming electrical appliances. It also encourages unnecessary energy waste and slothfulness among our youth who now care only about satisfying their listening pleasure than studying hard for the future. Therefore, music streaming can be judged environmental unfriendly and a threat to the sustainable developmental goals of increasing energy sufficiency by year 2030.

Traditional Music Instruments and Digitized Electronic Keyboard Instruments

Traditional music instruments are made out of wood hand hewn from timbers. Thus, such production activity makes a heavy demand on timber, a factor that can lead to deforestation and its consequent ecological hazards, if not properly controlled by the state. To minimize the negative environmental impact arising from the production activity, the state can regulate the use of its forests by enacting laws to guide the activities of the timber dealers and such law that will enable the people to plant new trees in replacement of the ones that were removed. Thus, the production of our traditional musical instruments, as a significant symbol of our history, culture and heritage ought to continue to avoid the extinction of that part of our identity as a people.

Another issue of great concern is the attitude of most of the Church choirs and choral groups in Nigeria today with regard to the use of these instruments. Live performance on these traditional music instruments is in the decline simply because the sounds of those instruments have been programmed and installed in modern electronic keyboards, which have the possibility of both automatic and manual organization and combination of sounds. The main critique of the use of these digitized electronic keyboard instruments is that it destroys the learning environment that facilitates individual skill acquisition, creativity and playing techniques associated with the learning and live performance of the physical instruments. At the long run, individuals have not learnt the instruments and cannot play them as required except on the keyboard if he/she has the keyboard knowledge. Worst still, the practice engenders a complete annihilation of live performance of music and hinder the correct developmental process of the individual.

[10] John Blistein, "Is Streaming Music Dangerous to the Environment? One Researcher Is Sounding the Alarm" *Rolling Stone*, accessed March 13, 2024, at 06:54 am.
[11] Patat and Shutterstock (2019).

CONCLUSION

Side by side with the music streaming services, CDs enjoy wide-popularity and are still in high demand. It has been observed that some music collectors, enthusiasts, historians and scholars are returning to the use of some of the old analog formats of music production and consumption such as vinyl records and cassette tapes. As long as the enjoyment of the revival of this old music technology lasts, it is crucial to recognize and address their hidden environmental costs and concerns already evaluated in this paper. Thus, the developmental trajectory of the music industry in the world and in Nigeria in particular will continue to be forward ever and backward never. By raising awareness about the negative environmental impacts of these music storage formats, this paper encourages a more responsible approach to their production, use, and disposal. Exploring ways to extend their lifespan, promote recycling initiatives, and develop sustainable alternatives can help mitigate the environmental harm caused by these cherished analog and digital formats of music production and consumption.

Notwithstanding the shortcomings (high-energy consumption and copyright infringements), of the music streaming services that currently occupy the top of the ladder of music digital technology (especially Spotify), it is the take of this paper that music streaming services need to be extensively studied, understood and cautiously utilized to be able to harness their rich harvest. Since they are less tangible comparing with other music storage formats and have almost no waste to recycle nor dump in the environment, this research considers them a top-notch technological innovation and boost in the Nigerian music industry.