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The impact and effect of government interventions on business ecosystems: a case study of the Nigerian music ecosystem

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Abstract: The concept of 'business ecosystems' offers researchers, businesses, and policymakers a new perspective and conceptual lens to understand the complex nature of innovative business environments. It is already known that a business ecosystem's success is determined by the governance and rules of ecosystem actors' engagement and activity. This study extends the governance perspective and explores how a business ecosystem can be shaped by government interventions. It applies the method of a single qualitative case study of the Nigerian music ecosystem with data collected from executives working in this industry. The research investigation indicates that the impact of government interventions on business ecosystems occurs in three distinct stages, following an input-process-output (IPO) approach with impact on the health of the Nigerian music ecosystem. The findings of this study complement the existing literature on business ecosystems, public policy and the music industry.

Keywords: ecosystem; governance; government; policy; business; innovation; entrepreneurship; stakeholders; interventions; communities.

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1 Introduction

A wave of transformative processes has changed industrial landscapes in recent decades, with increased significance of coopetition and convergence driving this evolution (Aaldering et al., 2018; Gueguen, 2009). These competitive dynamics redraw the frontiers of business environments and industries, with the boundaries of high-tech, science-driven and market-driven industries being blurred (Ancarani and Costabile, 2010). Although there already exists a bounty of general knowledge and wisdom on the development of dyadic relationships among commercial entities, this general understanding becomes less valid when exploring more complex network forms of inter-organisational relations (Visnjic et al., 2017).

The business ecosystem concept was introduced by Moore (1993) and provided a then-new theoretical lens to understand the complexity of the interplay among actors in industrial systems (Rong and Shi, 2014). It provides a novel perspective on business communities (Hsieh et al., 2017). Moore (1993) uses biological ecosystems as a metaphor and analogy to explain emergent business environments. Business ecosystems can be described as communities with various connected and interdependent organisations, which are typically loosely coupled and co-evolve together with partners in their business environment (Iansiti and Levien, 2004b). These network constructs not only comprise customers, suppliers and lead producers but also consist of communities of other interested parties as stakeholders (Power and Jerijan, 2001). Lütjen et al. (2019) have identified the government as an influential stakeholder in a study on service ecosystems, justifying this research. The inclusion of customers as actors in the ecosystem distinguishes the concept from mere innovation ecosystems; if the concept focuses on the entrepreneurial development of a region, an entrepreneurial ecosystem evolves (Kabbaj et al., 2016; Bala Subrahmanya, 2017).

A better understanding of business ecosystem dynamics requires insights into how ecosystems are structured and governed (Jacobides et al., 2018). Jacobides et al. (2018) proposes that an ecosystems' definition includes complementarities at the group level, which are not generic. This combination of competitive equilibrium and collaborative effort can be referred to as the ecosystem, with a potential modularity (Adner, 2017; Gawer, 2014). Competition then exists within the ecosystem to attract profits, but there can occur collectively orchestrated and structured alignment between actors aiming for a success of the enterprising goal on integrated or disintegrated hierarchical layers due to 'ecosystem-as-a-structure' as referred to by Adner (2017).

The role of the government in business ecosystems as an influential actor has, however, not been sufficiently researched. Rinkinen and Harmaakorpi (2019, p.262), who developed a framework for an ecosystem-based innovation policy, called for further empirical research on the topic. This study therefore aims to answer the research question of how a business ecosystem may be impacted by government interventions. It first conducts a targeted literature review on business ecosystems, their governance, and the impact of government interventions. The theory-driven conceptual framework based on an input-process-output (IPO) model is proposed to explain the influence of government interventions on business ecosystem health. A single-case-study research approach of the Nigerian music ecosystem validates the framework, following the methodological guidelines by Yin (2009) and Eisenhardt (1989). We have chosen the case of the Nigerian music ecosystem as it is considered as one of the strongest economically in Africa (Adolfo, 2023), even though the country overall ranks lower on many metrics as detailed by Alun et al. (2023). Considering this tension, we were interested to also shedding light on the cultural and economic idiosyncrasy.

Key concepts and themes are identified based on the analysed data. Contributions to the literature and public policy are discussed, and the limitations and directions for future research work are summarised.

2 Literature review

Few empirical studies have been conducted to research business ecosystem governance, and conceptual research has predominantly focused on strategic governance by 'keystone' companies and focal firms. Iansiti and Levien (2004a) identified four roles that stakeholders can take in a business ecosystem, either as a 'keystone', a 'landlord', a 'dominator' or a 'niche player'. The term 'keystone' originated from Moore (1996) and was used to describe leadership companies with a strong influence on co-evolutionary processes. Iansiti and Levien (2004b) further elaborate on the keystone role, which has control over key ecosystem hubs, and which creates and shares value with other ecosystem actors. Landlords extract value by controlling key hubs, whereas dominators use vertical or horizontal integration to extract value. Niche players have developed specialised capabilities and assets by focusing on narrow domain capabilities in the ecosystem.

A targeted literature review focusing on business ecosystems, their governance, and the government's role as ecosystem actor was carried out in this study. The existing research is summarised along two streams of inquiry: studies that conceptualise governance issues and studies that apply a case-based methodology to explore governance themes.

2.1 Approach of the targeted review

This review was carried out in a systematic process utilising the databases *Web of Science*™ and *Scopus*™ (Table 1). At first, keywords were defined, and an adjustment to journals with topic focus narrowed down the initial yield of 476 papers in *Web of Science*™ to 328 eligible papers. After title and abstract screening were used as a pre-filter, 89 papers remained. 33 main papers were included in the final literature set based on criteria such as topicality and novelty after a full-text review with additional papers that were retrieved from *Scopus*™.

Table 1 Targeted review of the literature

Process steps	*Details*
Selection of the primary database based on relevance of initial search results	Web of Science
Database search based on keywords	476 papers remaining
Exclusion of journals based on journal relevance	328 papers remaining
Title and abstract screening	89 papers remaining
Explicit selection after full-text screening	28 papers remaining
Repetition of steps for Scopus	5 supplementary papers
Coding of nodes in NVivo	Evaluation of 33 total papers

2.2 Findings

Conceptual papers have contributed significantly to understanding the role of government intervention in the governance of business ecosystems (Anggraeni et al., 2017). Peltoniemi and Vuori (2004, p.13) argue that "if we follow the principles of complexity, business ecosystems should be self-sustaining. This means that no government interventions would be needed to survive in local or global markets." However, reliance on autonomous partners entails risks. Uncontrolled innovation output may negatively affect the health of an ecosystem, as 'letting a thousand flowers grow' may produce low-quality output [Wareham et al., (2014), p.1195]. Wareham et al. (2014) further posit that the appropriate governance solution should achieve stability between all ecosystem actors. They do not describe though how this balance could be directly influenced by the government.

Moore (1996) explains that business ecosystems consist of community governance systems and quasi-democratic mechanisms. Ecosystems can then adapt to 'constraints' such as governmental restrictions, regulations, taxes and tariffs (Peltoniemi and Vuori, 2004; Teece, 2007). A public regulator of an ecosystem has the power to prohibit, compel and coerce the interplay of actors using rules or restrictions (Boudreau and Hagiu, 2009). Business ecosystems adapt to such constraints by emergence, co-evolution and self-organisation (Peltoniemi and Vuori, 2004).

A second type of literature focuses on case study-based research. These papers identified four main roles of the government when intervening in the governance of business ecosystems.

The first role describes the government as an enabler that facilitates or restricts activities. This is done mostly through regulations. Gretzel et al. (2015) studied tourist ecosystems and mentioned in their findings that regulatory foundations must be available for the tourism ecosystem to be characterised as 'smart'. Rong et al. (2013) discovered that the Chinese Government restricted the market entrance of low-speed electric vehicles, which prevented diversified and sustained growth of the whole electric vehicle ecosystem.

Another key role of government describes the government as an ecosystem stakeholder creating a favourable environment. For example, Liu and Chen (2007) recommended that the government is needed to create a favourable environment in China's e-business. Rong et al. (2013) and Shang et al. (2015) mentioned that governmental interventions based on financial incentives and support has contributed to electric vehicle sales and production in China. Furthermore, governments may act as potential exogenous orchestrators. This involves governing with direct coordination. Visnjic et al. (2017) clearly defined the role of a government as an orchestrator based on research of city governance. They identified four key tasks of the government when acting as an such an orchestrator, which could develop a long-term vision of the ecosystem's future, structure the ecosystem, engage in ecosystem strategic governance, and support the evolution of the ecosystem.

A final role of the government is based on its capability to enhance business ecosystem health. Liu and Chen (2007) mention that ecosystem health is dependent on 'hetero-organisation' by the government, which implies a self-organised adaptation of ecosystems' actors to the endogenous influences. Furthermore, regulators could serve as catalysts to contribute to ecosystem well-being while being a 'non-value-draining dominator' (Koivisto et al., 2015). Liu and Chen (2007) and Koivisto et al. (2015) explain that governments acting as orchestrators could enable improved business ecosystem health.

As a result of the above discussion, the existence of an ecosystem implies that dyadic relations are only part of interactions embedded in networks of a multitude of different actors. Ecosystem actors therefore partake in strategic networks that facilitate comparative advantage based on relations that are often nonlinear. For this study, we adopt the paradigm that governments can constitute state actors (national or regional) that exert governance activities with potentially multiple influences on an ecosystem.

2.3 Research gaps

When analysing the existing literature, we discovered that the roles of governments and actors when intervening in business ecosystems have not been sufficiently defined in the literature, which is in line with observations made by Jacobides et al. (2018). Prior research lacks a structured approach to understand the influence of governments in a business ecosystem context. A number of further observations were made:

1 Most business ecosystem research analysis is context-specific, with limited external validity and thus providing limited contributions to the overall understanding of business ecosystems' relations to governmental influences and ecosystem health (Adner, 2012; Zhang et al., 2017).

2 There is currently little knowledge on how governmental mechanisms affect business ecosystem health; nor is there a clear understanding of the mechanisms behind governmental influences in general (Jacobides et al., 2018).

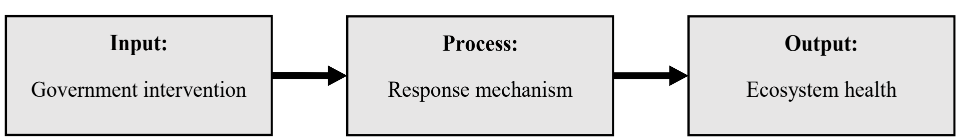
3 Most of the papers that were analysed have only focused on the regulatory role of governments, with little exploration of other governmental modes of intervention. Industries with a reputation for significant regulations (e.g., tech industries) constitute the majority of research studies. This was also observed by Zhang and Liang (2011).

4 Geographical elements are not thoroughly addressed in the foundational business ecosystem literature (Peltoniemi, 2005). The existing literature thematises the role of a responsible government within the researched ecosystem's geographical setting or boundaries, but rarely explores mutually influencing governmental impact such as social demography or physical geography.

3 Theoretical framework

The findings from the literature review were used to create a theory-driven conceptual framework (Figure 1). This proposes an IPO approach (Van de Ven and Huber, 1990) as a basis to examine the effect and impact of government interventions on business ecosystems. To answer the research question, this framework provides a means to explain the observed sequence of events through the scope of underlying generative mechanisms, activation of causal or non-activation of causal powers under certain conditions, and the circumstances or contingencies when these mechanisms operate (Tsoukas, 1989).

Figure 1 Theoretical IPO framework



3.1 Input

In this study, government interventions are conceptualised as input variables. A government fundamentally sets the 'rules of the game' by forming and utilising institutions, which shape the interactions in societies and organisations (North, 1990). Institutional development involves the provision of hard and soft infrastructures, which are essential to the economy and quality of life.

Policies are another input utilised by governments to influence and determine decisions and to achieve a desired outcome (Pal, 2014). It is widely accepted in the policy literature that the main instruments governments can use to influence and intervene in national or international economies are regulatory, economic, or communicative in nature (Pal, 2014; McCormick, 1998). Policies are typically used to encourage the development of part of an economy, for example by protecting certain industries (Graham, 1994; Bingham, 1998).

3.2 Process

It can be derived from the analysed literature that ecosystems adapt to imposed constraints (Peltoniemi and Vuori, 2004). Furthermore, it is posited that there are response and reactive processes that alter the input of institutions and policies. This could be exogenous circumstances such as the business environment in other countries, or events and shocks depending on the country's geopolitical and geoeconomic situation.

3.3 Output

The output is the result of the process. Based on the literature, it is evident that ecosystem actors individually benefit or suffer from governmental actions that affect the ecosystem health (Gretzel et al., 2015; Liu and Chen, 2007; Visnjic et al., 2017). Business ecosystem health assessment measures and characteristics are fundamental means to analyse the output effect of governmental influences (Iansiti and Levien, 2004a).

4 Methodology

Business ecosystem research is still at an exploratory stage, as most papers on the subject were published in recent years (Miri-Lavassin, 2017). As business ecosystems are a novel concept, the existing literature offers limited policy recommendations (Rinkinen and Harmaakorpi, 2017). Therefore, the research design chosen in this inquiry supplements the literature review in an exploratory and empirical approach.

4.1 Research approach

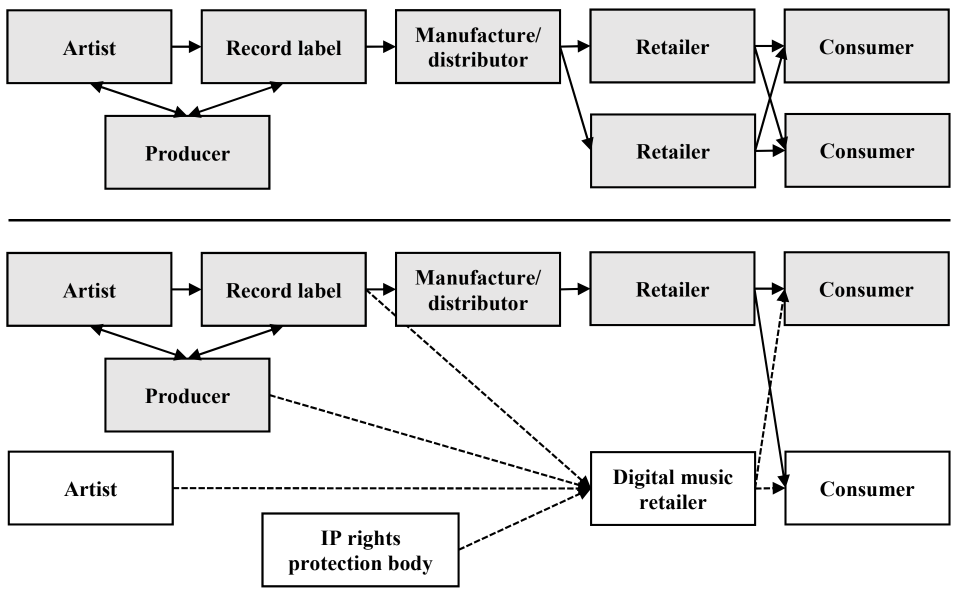
A single-case-study design is used in this research, which is considered an appropriate exploratory method to address the character of business ecosystems as nascent phenomena (Edmondson and McManus, 2007; Yin, 2009). In particular, the creative industries (performing arts, visual arts, sound recordings and even fashion) offer ample opportunity to study complex networks and elements. This research focuses on the music ecosystem, which provides an interesting research opportunity due to the unique characteristics of the creative sector.

4.2 Case introduction

The music industry has a complicated value chain, with various actors and interactions occurring along the chain. The rise of digital technologies has led to further complexity. Figure 2 displays the analogue and digital music value chains.

Moreover, the music industry consists of three sub-sectors: recording, publishing and live music. In the music business, the intellectual property of a song is split into two individual types of copyright: composition and sound recording. Recordings are owned by recording artists and their record labels, whilst the royalties from composition copyright are split between songwriters and publishers. Live music generates revenue from performances such as shows or concerts.

Figure 2 The music industry's traditional and digitalised complex value chain



Source: Based on Bockstedt et al. (2014)

This research focused specifically on the Nigerian music ecosystem. Nigeria is a fast-developing country with some industrial policies tailored towards the music industry. The industry has seen rapid growth in recent years and music is currently one of Nigeria's most eminent export goods, receiving a significant amount of attention from multinational record labels and consumers globally (Asuzu, 2016; Abumere, 2018; IFPI, 2019). For instance, Sony Music International, Universal Music Group (UMG) and Warner Music have recently established ventures in Nigeria (Abumere, 2018). All of this makes the industry highly suitable for case-study research.

4.3 Data collection and analysis

A set of 20 semi-structured interviews from a range of key music businesses constitutes the primary data (Rogers, 2017; Krasilovsky et al., 2007). Participant selection followed a purposive sampling method, as interviewees were selected based on their capacity to inform the research question and to enhance the understanding of the studied area (Sargeant, 2012). They were typically managers, directors, and CEOs of their respective organisations.

As detailed in Table 2, the interviews lasted an hour, on average, and were recorded and transcribed for analysis. The interviews began with questions regarding the general background of the respondent and details of the Nigerian music ecosystem, in order to establish an understanding of involved ecosystem actors. This was followed by questions about government interventions in the Nigerian music ecosystem. The questions were framed by the developed conceptual framework, to ensure reliability of data and construct validity (Yin, 2009). As a result of the semi-structured nature of interviews, follow-up questions were asked based on information shared by the interviewees. All interviews were coded for analysis, analysis was conducted using a qualitative data analysis support tool (*NVivo*™).

Table 2 List of interview participants

No.	*Company name*	*Business area*	*Interviewee position(s)*	*Duration (mins)*
1	Kennis Music	Record label Creative/content creation (recording and performance)	A&R/artist manager	75
2	Mavin Records	Record label Creative/content creation (recording and performance)	Director	33
3	Chocolate City Music	Record label Creative/content creation (recording and performance)	Promotions expert	70
4	Bahd Guy Records	Record label Creative/content creation (recording and performance)	Management	70
5	Waje	Artist Creative/content creation (recording and performance)	Artist	62
6	Loose Kaynon	Artist Creative/content creation (recording and performance)	Artist	30
7	Confidential	Investment firm	Innovation and products expert	37
8	Confidential	Investment firm	Director	40
9	Live and Sound	Device retail, hiring and technical consultancy	Director	85
10	Show Gear	Device retail, hiring and technical consultancy	Director	59
11	Performing Musicians Employers' Association of Nigeria (PMAN)	Trade union, policy influencer, regulator	Director	75
12	Copyright Society of Nigeria (COSON)	Copyright society, policy influencer	Manager	74
13	Sahara Reporters	News media	Entertainment journalist	37
14	Too Exclusive	Music blog	Journalist	38
15	Kurlevra Productions	Video production	Video director	80
16	Replete Music	Music publishing	Cataloguing and publishing expert	55

Table 2 List of interview participants (continued)

No.	*Company name*	*Business area*	*Interviewee position(s)*	*Duration (mins)*
17	Boomplay (Transnet Holdings)	Music streaming	Director	95
18	Free Me Digital	Music distribution	A&R, PR and digital marketing expert	40
19	Smade Entertainments	Live music, shows, promotion	Music promoter	50
20	MTN	Mobile telecoms operator (internet service provider), streaming, RBT	Director	36

General concepts were identified based on an initial analysis (open coding). Categories were used to find emerging patterns, properties, and relationships (axial coding), which helped in the formulation of key concepts and issues with a reconstruction process (Glaser and Strauss, 1967). The categories were finally aggregated to theorise the business ecosystem concept as an overarching phenomenon (selective coding). The results were compared with the findings from the literature for validation purposes.

5 Results

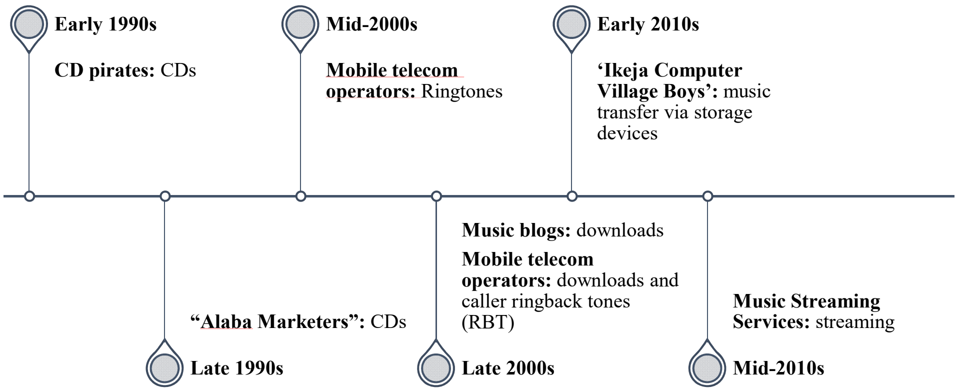
The analysed themes from the interviews provide insights into the development and structure of the Nigerian music industry, as well as the hard and soft infrastructure that can be exploited by ecosystem actors. A further category of findings comprises various policies that are used to intervene in the Nigerian music ecosystem.

5.1 Evolution of the Nigerian music industry

The emergence of the recording industry in Nigeria helped to bring some structure to a music environment, which dated back to the early 1930s (Adedeji, 2016). The structure, however, collapsed in the 1990s due to political turmoil, which led to the exit of Western labels and to an incapacitation of indigenous labels. Around the same time, electronic goods traders turned-copyright pirates began to group in the famous ‘Alaba International Market’ in Lagos, Nigeria. Despite various anti-piracy efforts, pirated products were openly displayed at this local market and similar markets across Nigeria, and illicit business continued to boom.

The market entrance of the Global System for Mobile Communications (GSM) network and infrastructure in the early 2000s created a new distribution channel in the music industry. The improvement in computers, mobile technology, and internet access from the mid to late-2000s resulted in the era of ‘free-for-all’ music downloads and other means of accessing music, leading to a further decline in traditional sales. Despite these challenges, Afrobeats (the most prominent genre in Nigeria) has grown to become a global phenomenon. The surrounding ecosystem has generated international attention, instigating the return of multinational record labels like Sony and UMG. Figure 3 displays a timeline with the most important music distribution channels that kept adapting over time.

Figure 3 A timeline of legally and illegally recorded music distribution channels in Nigeria



Source: Triangulated data sources from primary interviews, PwC (2018) and Adedeji (2016)

5.2 Hard infrastructure in Nigeria

According to the interview analysis, hard infrastructure has significantly changed the structure of the music ecosystem in Nigeria. Infrastructure systems like electrical power, road transportation, and security have all led to an increase in new business opportunities as well as an incapacitation and termination of many other businesses. Only the biggest players in the ecosystem can afford to mitigate the risks of change, which bears high operations costs as a result of the exploitation of alternating solutions.

For example, because of the instability of the electrical power grid, several companies moved to Nigeria to provide substitutes for grid power, with generators being the most common alternative. One interviewee pointed out that "to run an event, you need to have a standby generator, which could cost you half of your expenditure. It is one of the reasons why we don't have enough venues for shows." With regards to road transportation, a video director stated that "if the roads were well done, with no traffic jams, I could probably shoot three or four locations a day." On the other hand, street hawkers in the ecosystem leverage this congestion to sell music CDs on roadsides during periods of high traffic.

Furthermore, the development of mobile telecommunication technologies and the internet in Nigeria created new niches in the music industry such as caller ringback tones (RBTs) and streaming. Social media is also heavily utilised for music marketing and promotion, giving rise to new players like social media influencers. However, the interviews indicated that the cost of data is inhibiting the Nigerian audience from consuming musical content online, thereby limiting the growth potential of local streaming.

5.3 Soft infrastructure in Nigeria

Many interviews indicated that only the artistic aspects of the music industry are covered in educational institutions, with little education about the industry's business mechanisms and technical requirements. Schools that provide training on audio engineering and other technical skills necessary in the music space are almost non-existent, which forces music and sound hiring companies to pay for the provision of practical training for prospective hires. As a result of the lack of vocational training institutions, there are no mass manufacturers of high-quality audio devices in the country.

Furthermore, law enforcement is sub-par in Nigeria (Adedeji, 2016). Niche players involved in music IP protection are either non-existent or struggling to survive due to the lack of legal expertise and know-how. Lump-sum payments are the preferred payment model because of the unavailable legal structures to support complex revenue models.

It is not uncommon for artists to quit their record labels before the end of their contracts, without fear of repercussions. When record labels attempt to pursue a lawsuit, the judicial system often fails to enforce the contracts. The judiciary is sometimes insufficiently informed about intellectual property laws, as those laws are rarely invoked (Searcey, 2017). This has led to a decline in the record label business in Nigeria.

The absence of a strong judiciary and law enforcement fuelled the rise of 'value drainers' such as copyright pirates, who unlawfully capture value from business ecosystems. Troublemakers called 'area boys' also threaten to disrupt activities such as video shoots within their vicinities if they are not compensated. Even though these 'area boys' are not involved in value creation, they must be paid to avoid disruptive activities.

5.4 Policy environment in Nigeria

The government interventions with relevance for the Nigerian music ecosystem comprise a policy mix of both innovation-enhancing and innovation-impeding mechanisms. Whilst the monetisation governance of the market is dominated by private actors, the government intervenes in the market by providing financing vehicles with incentives for local and foreign investments, as well as the support of Nigerian music exports into other countries. The regulatory measure of music censorship constitutes a grave market intervention.

5.4.1 Monetisation governance

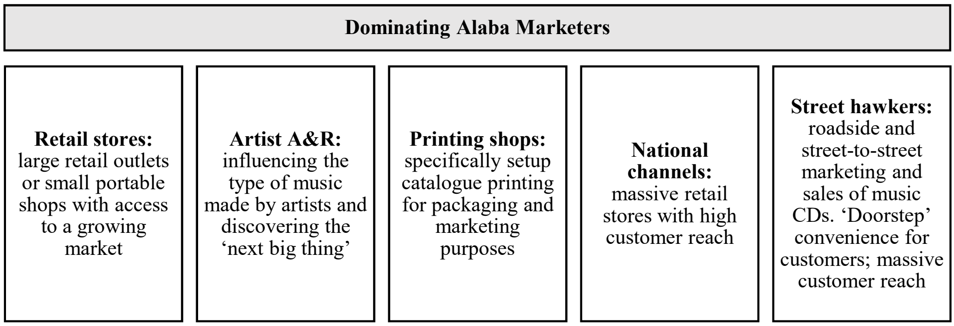
The anti-piracy campaign 'Strategy Against Piracy' (STRAP) was launched by the Nigerian Copyright Commission (NCC) in 2005 (Adedeji, 2016). This initiative engaged in the seizure and destruction of pirated works, coupled with the arrest and prosecution of offenders, as well as the introduction of new transparency requirements in CD production processes. This was, however, described as problematic by an interviewee, because "those raids were being done to destroy those illegal channels, [but] a genuine legal channel was never built."

The two major actors overseeing and steering the market activities are the Alaba 'dominators' and the value-extracting mobile telecom operators who act as 'landlords' (Iansiti and Levien, 2004b).

Ex-pirates known as 'Alaba marketers' have become the 'dominators' in the business ecosystem over the years. They have significant control over multiple actors along the value chain as well as robust distribution channels (Figure 4). With power resting heavily on the Alaba marketers, artists have limited reasons to join record labels.

However, the legitimate players along this channel, especially the artists, find it difficult to profit sufficiently from this channel as a result of pressure by copyright privacy (Figure 4). The interviews indicated that Alaba marketers and content creators had to significantly drop the wholesale and retail price of CDs.

Figure 4 Alaba marketers with controlling powers



'Value extractors' are mobile telecom operators with a mobile telecommunications infrastructure that serve as the landlords. These are empowered by the rise of RBTs that opened a new revenue channel for content creators and creatives (e.g., artists). This piracy-proof distribution avenue generated millions of pounds in revenue within a few years, historically accounting for the highest share in the Nigerian music industry (PwC, 2018). Despite the RBT channel becoming the most profitable and largest source of revenue in Nigeria over the years, little value has been shared across the ecosystem because of the closed nature of this channel.

The 'free-for-all' trend affects royalty streams from publishing, but media outlets in Nigeria such as radio stations have historically not paid royalties for music usage. One interviewee stated that "earning money from publishing […] is almost non-existent." The Copyright Society of Nigeria (COSON) was established in 2010 as a collective management organisation (CMO) with a licence from the NCC. However, COSON has struggled to operate effectively because of the dearth of expertise and appropriate legislation as well as weak law enforcement systems in Nigeria. With unstable revenue streams from recorded music sales and publishing royalties, live performance has been the primary source of revenue for most players in the music ecosystem.

5.4.2 Financing the ecosystem

The Nigerian Government floated a $200 m entertainment industry loan through the Bank of Industries (BOI) in 2010 (Olufunmi, 2012). According to the interview analysis, the loan scheme failed the primary purpose of helping actors with difficulties accessing finance from traditional institutions. Instead, it favoured the top content creators (e.g., artists and record labels) who could prove a monetisation structure. The loaning structures thus proved ineffective in its stated goal (CBN, 2019).

Investment in the music ecosystem was compared to 'financial suicide' by interviewees, as multinational corporations (MNCs) only leveraged the fame of the artists with brand endorsements and the extraction of content from local artists for sales abroad. These factors contributed significantly to a 'winner-takes-all' model in the Nigerian music ecosystem. With very little corporate investment, actors had to access funds through informal means, such as 'ghost investors' with 'crude' income sources and less focus on return-on-investment (ROI). Examples of these ‘ghost investors’ include ‘yahoo boys’, who obtained money via fraudulent internet activities.

Players in the non-creative space also lacked access to government funding, which increased the importance of funding from churches that heavily consume music and sound devices. Conferences and summits organised by the government have been ineffective in tackling financing issues in the industry.

5.4.3 Foreign direct investment

Foreign investors mainly invest in Nigeria by portfolio investment and direct investment (Adeleke, 2018). From the mid-2010s, various niches started receiving foreign direct investment following an increased consumption of Nigerian music in the global market, which ended an era of direct investment drought. Multinational record labels were establishing themselves in Nigeria with joint ventures and greenfield investments. However, these record labels are typically interested in content extraction to satisfy the growing demand outside of Africa, thereby circumventing the indeterminable monetisation structure. Based on our interview analysis, local players often lack financial support from the government and feel threatened and unprotected from these large MNCs, accusing them of unfair competitive dynamics.

The interviews also indicated that some foreign investors in the Nigerian music ecosystem are encouraged and incentivised by their home country’s government to invest abroad. For example, Chinese companies enjoy low interest rates on loans, reduced paperwork, and eased restrictions on foreign investments from government (Peterson, 2016). This lack of obstruction makes them more competitive than local players.

5.4.4 Import policy

Nigerian import policy aims to protect certain sectors by imposing highly effective duty rates on imports (for instance, tariffs and quotas) with a vision of boosting the competitiveness of local industries and thereby generating revenue (Export.gov, 2018). However, Nigeria is infamous for its import difficulties, ranking 110th in The World Bank’s (2018) logistics performance indicator (LPI) rating. Businesses often incur extra costs by contracting out the importing task to third-party niches to avoid these difficulties. This also affects the music industry, especially the technology required for music production. The import of goods from different countries that was allowed by the government has significantly empowered the Nigerian music ecosystem due to increased access to input components for music devices.

5.4.5 Export promotion

An export promotion is considered a major element responsible for the global consumption of Nigerian music. There has been the influence of a strong Nigerian community in different countries. For example, in the UK, Nigerian promoters and ‘on-air personalities’ (OAPs) have been heavily involved in the promotion of Nigerian music and culture encouraged by the Nigerian Government, providing opportunities for artists to organise shows and to sell their music. However, there have been instances whereby Nigerian businesses have not been allowed to operate in their host countries.

One interviewee recalled a Nigerian hardware retail business that was denied a business licence in South Africa as a result of government protection of local players in that space.

5.4.6 Music censorship

Music censorship in Nigeria occurs due to moral, political, military, or religious influences. The National Broadcasting Commission (NBC) (controlled by the Federal Government of Nigeria) regulates music distribution. Furthermore, some ministries (such as the Ministry of Health) also influence the NBC (Sahara Reporters, 2017). However, digital platforms and social media have become a highway for content creators to upload and publish songs that violate the NBC's policy.

6 Discussion

Based on the empirical part of the paper, the effect and impact of government interventions on the Nigerian music business ecosystem can be categorised to follow three stages. These stages mirror the conceptual theoretical framework of the IPO approach that was developed based on the literature review.

6.1 Input: government interventions in the 'physical environment'

This study finds that policies and infrastructure define the working environment for businesses in the music ecosystem. Interactions with the government create a complex environment where businesses compete for resources. Players in the live music sector have survived because of lesser reliance on legal 'nutrients' compared to players in the publishing sector, emphasising the importance of the institutional environment as input factor (cf. North, 1990).

From the analysed data, it is evident that the public sector can enable or inhibit the presence of different actors in a business ecosystem, providing support for two identified roles of the government from the literature: the government can both act as an enabler (Rong et al., 2013; Gretzel et al., 2015; Majava et al., 2016; Peltola et al., 2016) and potentially creates a favourable environment (Liu and Chen, 2007; Shang et al., 2015).

Furthermore, it was observed that this environment is created not only by the Nigerian Government but also influenced by foreign governmental authorities. This study thus extends the existing literature, as multiple arms and levels of various foreign governments across different countries in addition to the local government play a role in ecosystem interventions.

6.2 Process: response mechanisms to environmental changes

Changes in the 'physical environment' created by governments lead to a change in the behaviour of business ecosystem actors. Actors in the Nigerian music ecosystem take the path of least resistance and seek to compete in the most favourable environment. In response to environmental changes, this study finds that ecosystem actors move, adapt, or expire depending on their business circumstances.

6.2.1 Moving ('artificial migration')

Movement involves both permanent and periodic geographical migration, creating a 'borderless' business ecosystem. For example, Nigerian artists started touring other countries because of their more favourable infrastructure, welcoming policies and higher purchasing power of consumers. Cross-border value exchange has significantly contributed to the artistic and economic success of the Nigerian music ecosystem, and an 'ecosystem extension' in the form of global diversification of ecosystem actors has been observed. The ecosystem extension is influenced by governmental mechanisms pulling and pushing actors into and out of ecosystems, respectively.

6.2.2 Adapting ('natural selection')

A business ecosystem responds to changes in government interventions with a series of simultaneous and overlapping processes. First, 'natural re-organisation' continuously occurs in the business ecosystem under changing environmental conditions. This happens in the form of a natural 'survival instinct', where individual players try to vary their business models to accommodate direct changes in their immediate environment. For example, it was found that actors in the Nigerian music ecosystem typically cover more than one niche, providing these actors with more opportunities to survive in the face of competition. Industrial processes result in the creation of new structures, patterns, and overall network changes in the ecosystem due to ecosystem evolution.

6.2.3 Expiring ('natural exclusion')

Most actors that cannot move or adapt to changing conditions eventually become non-existent unless there is a resilience mechanism present. This failure to adapt bears the danger of ecosystem death (cf. Moore, 1993). A continuous inflow of private investments with a low short-term ROI priority was observed to be a major driving force for some players and niches in an otherwise adversarial Nigerian music ecosystem environment. For example, COSON has historically struggled to provide effective management services in the ecosystem because of a crippling legal environment and hampering policies. Continuous funding has kept COSON 'existing but dead', which describes its existence as largely dormant and ineffective.

6.3 Output: effect and impact on business ecosystem health

Government interventions, such as policies and infrastructure, affect the characteristics, diversity, volume, dominance, composition and evolution of actors and niches that grow in the Nigerian music ecosystem. These factors contribute to the productivity, niche-creation capability, and robustness of the ecosystem, thereby emphasising the role of a 'government that enhances ecosystem health' (Hou, 2017; Liu and Chen, 2007).

6.3.1 Productivity

Soft and hard infrastructures are essential for sustaining a high volume of ecosystem actors across all niches, which is key to the overall productivity of the business ecosystem. For example, in the Nigerian music ecosystem, players suffered from high costs when seeking alternative solutions to poor infrastructure; some players were unable to overcome these hurdles. It was observed that 'value drainers' emerge alongside 'value extractors' in a business ecosystem if infrastructure and policy elements are weak. Value drainers reduce the individual actors' productivities as well as overall productivity of the ecosystem. For example, internet and CD piracy in the Nigerian music ecosystem significantly reduced the ROI for investors.

6.3.2 Niche creation and diversity

This study finds that government input impacts the overall diversity in a business ecosystem in terms of players, product, location, revenue stream and business model. For example, because of sub-par law enforcement and policies, content creators (such as artists) faced significant difficulty in making money in the publishing channel. These conditions prevented the potential creation of new ecosystem niches. Weak infrastructure led to the creation of new players who 'filled' these voids (e.g., generator retailers) but also drove up costs, resulting in lower business ecosystem productivity. However, widespread internet access supported an increase in meaningful niche players such as social media marketers. Furthermore, it was found that the composition, dominance, and characteristics of niches found in a business ecosystem are dependent on the environmental conditions set by the government. To illustrate, the music ecosystem in Nigeria is characterised by a significant number of actors playing in the live music space, with very few players operating in the publishing space.

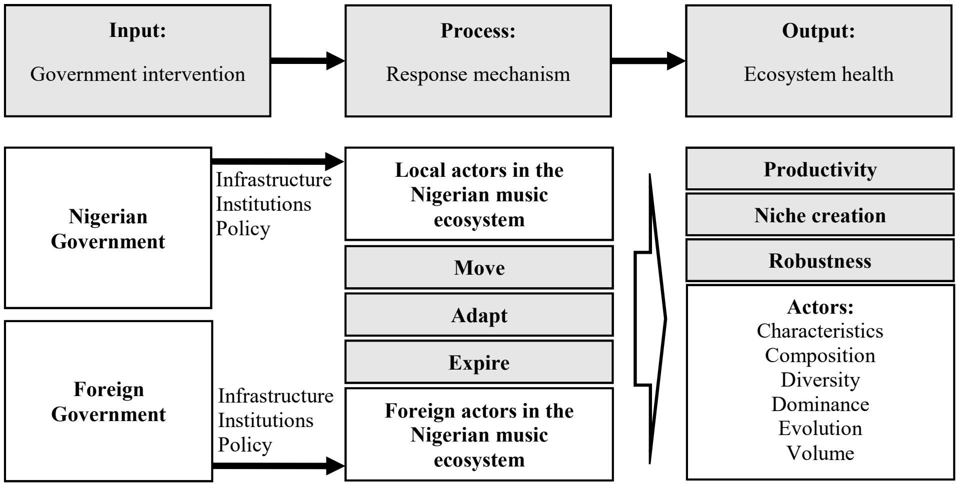
6.3.3 Robustness

Governments affect the survival rates of Nigerian music ecosystem actors based on the environmental conditions that they provide. Weak infrastructure elements stifle the survival of players across all niches as those elements induce high running costs. The presence of certain players (e.g., value drainers) also inhibits the survival of other players. Furthermore, it was found that governments contribute to the creation of technological disruptions that occur in business ecosystems through infrastructure and policies. For instance, Alaba marketers can survive, as a significant number of Nigerians still consume music distributed on CDs due to the current unaffordability of internet access and smartphones.

6.4 Policy implications

Our findings emphasise the existing idea in the reviewed literature that governments can enhance business ecosystem health (Hou, 2017; Liu and Chen, 2007). Additionally, it was found that a government impacts business ecosystem health with the environmental conditions that it creates for ecosystem actors, which can be favourable to some and hostile to others. Figure 5 shows a summary of the typical effects and impacts of governmental influences observed in the Nigerian music ecosystem based on the IPO model.

Figure 5 Three stages of the impact/effect of governmental influences on the Nigerian music ecosystem



The case study thus reveals five policy implications that should be considered by governments in their intervention into business ecosystems:

1 *Collaboration between government and ecosystem actors:* It is evident that collaboration between governments and other ecosystem actors is extremely important. This study has shown that individual contributions of various arms and levels of governments together create the complex environment in which ecosystem actors operate. Achieving a desired outcome requires a collaborative effort from various governmental bodies. As a result of the considerable impact of governments on business ecosystems, it is important for policymakers to develop visions for an entire ecosystem and to communicate these with stakeholders to continuously improve ecosystem health.

2 *Inter-geographical value exchange:* In a globalised business environment, governments need to be aware of cross-border value creation and capture, and they should evaluate how best to accelerate and retain value creation. For example, the entry of multinational firms could accelerate value creation processes; however, most of the value captured might be retained in other geographical areas. A pull-push matrix (Table 3) can serve as a structured means to assess possible strategies in the development and globalisation of a business ecosystem inside and outside a geographical area.

3 *Competition and fairness:* It is important for actors in a business ecosystem to have a fighting chance of commercial survival. For example, one must consider how to balance the competition between smaller local players and larger MNCs. This balancing is usually done by regulatory means. Policymakers should also address the risks faced by ecosystem members that prevent further value creation.

4 *Constant awareness of disruptions:* With the high pace of technological developments in this age, policymakers need to constantly evaluate how ecosystems can be affected by these potential disruptions. Developing strategies to mitigate the potential disruption is advisable, and technological forecasting based on road mapping methods can be leveraged to support the strategy.

5 *Business ecosystems as engines of growth:* Complex business ecosystems such as the creative industry provide opportunities to create jobs and wealth for the economy. It is important to ensure that these ecosystems are well-nurtured to become productive, robust and support niche creation. The root-cause factors determining business ecosystem health are the characteristics, volume, diversity, evolution, dominance, and composition of the business ecosystem.

Table 3 A pull-push matrix for inbound and outbound business ecosystem extension

Means	*Pull mechanism*	*Push mechanism*
Direct: policy	Regulatory instruments	Financial instruments
	Communicative instruments	Communicative instruments
Indirect: infrastructure	Soft infrastructure	Hard infrastructure
	Technological development	Technological development

These policy implications provide a systematic lens that allows practitioners, policymakers, and other stakeholders to analyse complex business and entrepreneurial environments.

7 Conclusions

The research extends the study of business ecosystems – theoretically, for practitioners in policy, and in industrial practice.

We found that the impact of government interventions on a business ecosystem occurs across three distinct stages. We can describe these as the input stage, the process stage, and the output stage. In the input stage, the existing literature focuses on domestic governmental authorities and policy mechanisms. This study finds, however, that the music ecosystem in Nigeria is created and influenced by multiple arms and levels of various foreign governments, as well as the Nigerian national, local government or non-governmental rule enforcers. This influence is enacted indirectly by providing infrastructure support and directly with policies and regulations. The resulting environment creates enabling factors and barriers for various actors.

In the process stage, business ecosystem actors ‘move’, ‘adapt’ or ‘expire’ in response to changing environmental regulations and conditions. When actors move permanently or temporarily out of the country, hence out of legislation and rule, cross-border value exchange occurs. The research finds cross-border value exchange to have significantly contributed to the artistic and economic success of the Nigerian music ecosystem. This shows that an ecosystem should not be investigated solely within its country’s boundaries, but a wider view should be allowed due to a significantly ‘extended ecosystem’. Incorporated can be pull-push factors defined from within the core of the ecosystem directly (policy) and indirectly (infrastructure), which are controlled by governments. Furthermore, the ‘death’ of actors and niches, such as niche value extraction mechanisms like sales of mobile phone ring tones, in the Nigerian music ecosystem is not limited to a state of non-existence but also includes the 'natural exclusion' of actors and niches. Such actors and niches exist in the ecosystem, but ineffective and dormant as the ecosystem has resilience mechanisms like a continuous inflow of investment with low prioritised short-term ROI.

At the output stage, changes occur in the business ecosystem in terms of composition, volume, characteristics, dominance, diversity, and evolution of actors, all of which affect ecosystem health in the dimensions: productivity, robustness and niches creation. This study finds that the overall health of the Nigerian music ecosystem has been negatively impacted by the environmental conditions created by the governmental authorities in Nigeria. The environment has sustained value drainers and value extractors, and fails to support a healthy variety of players, revenue streams and business models. However, this is still considered a success.

The study extends the existing academic literature in multiple ways. First, the research provides empirical understanding of how an ecosystem and government(s) interact. Second, it contributes to the literature in the music business and creative industries by providing insights into one of the fastest-growing creative economies in the world, from a multifaceted perspective of policy impact and development. Second, the Nigerian music ecosystem encompasses various industries that offer a rich perspective to the business ecosystem literature.

The study supports industrial and policy practitioners. Industrial practitioners benefit by understanding how local, regional, and external policies may influence their industrial ecosystem allowing better long-term planning.

Some research limitations need to be considered. The findings of this study are derived from a single case study, but multiple case-studies in the future can enable more generalisable conclusions. In addition, future research might consider selecting a range of interviewees across various levels and arms of governments to reduce bias in the findings and provide a direct policy perspective. Reliable data about the Nigerian music ecosystem was difficult to access, and it might be advisable for future research to select research settings with a larger pool of available data sources. Finally, a major 'keystone' company was not observed in this research; therefore, the governance relationships between keystones and governments could not be explored.

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