Impact of Intellectual Property Infringement on Businesses and the Nigerian Economy

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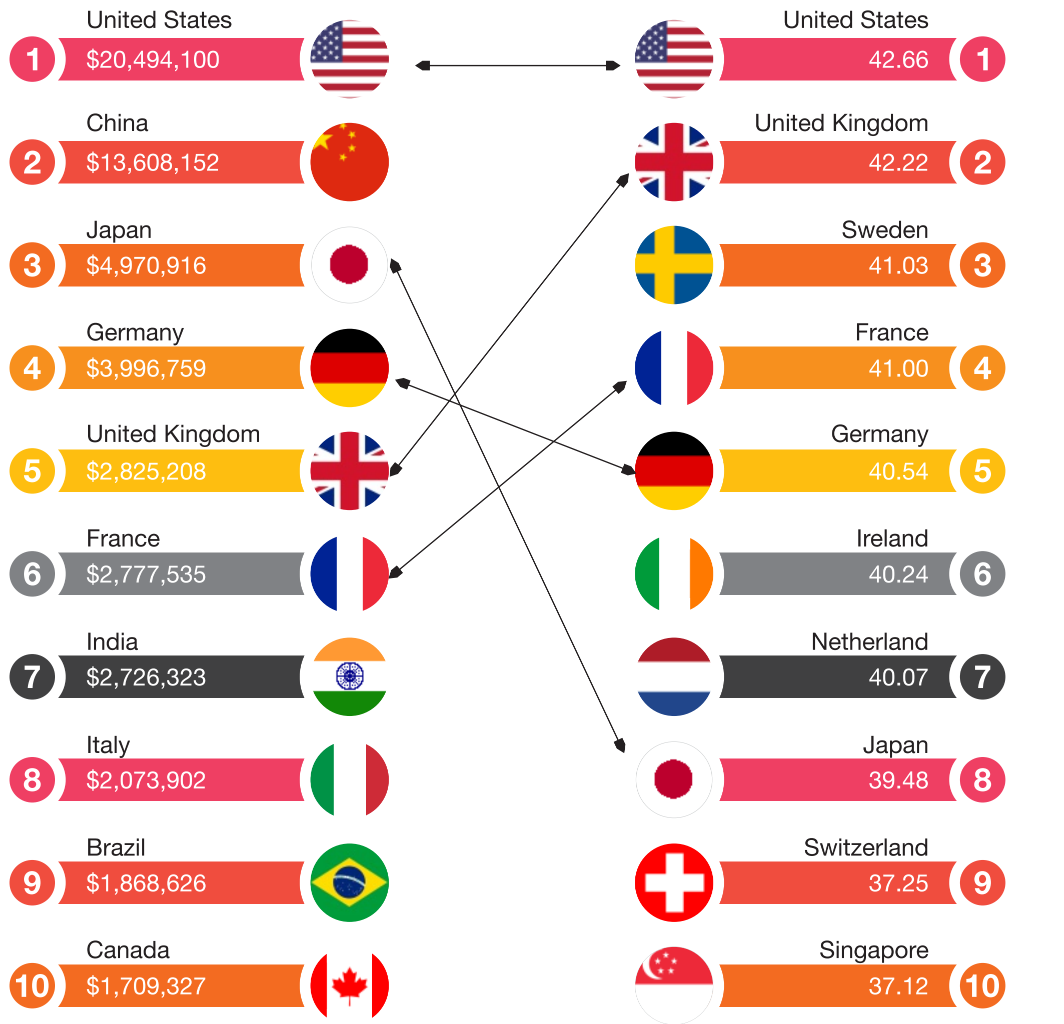
Overview of IP Infringement

Data has shown a strong correlation between strong intellectual property rights and economic development. Strong IP rights create an enabling environment for the innovation necessary for economic stimulation. Unfortunately, Nigeria is home to one of the weakest intellectual property protection regimes, which hampers growth prospects of our already weak economy. IP violation hinders economic growth by discouraging investment, decreasing innovation, discouraging research and development, diminishing financial benefits from creation, and may pose harm to consumers.

Top 10 Economies by GDP (2018)
Source: World Bank

Top 10 Economies by IP Index Scores
Source: Global Innovation Policy Centre

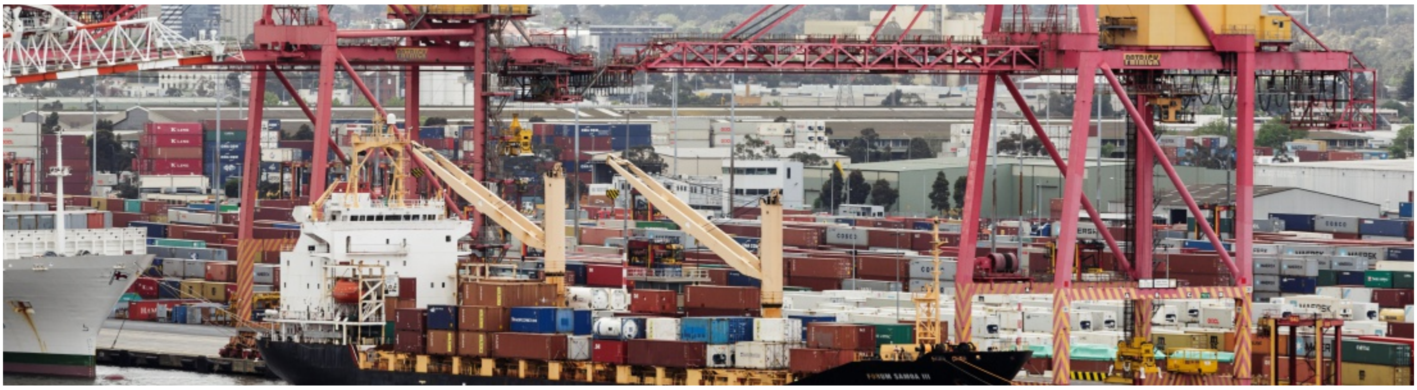


The diagram above reveals that half of the top 10 economies by GDP also fall in the top 10 economies by International IP Index scores. This reveals a positive correlation between economic prosperity and protection of intellectual property rights.

Over the years, Nigeria has become a target destination and transit route for counterfeit and pirated goods. Foreign and local traders flood the market with cheap sub-standard fakes, while local manufacturers illegally imitate products of established brands. Reasons for the wide spread proliferation include informal structure of the economy, corruption, outdated legislation, weak policy and enforcement mechanisms, and lack of proper awareness on the dangers of consuming substandard and counterfeit products.

The Impact of IP Infringement on The Nigerian Economy

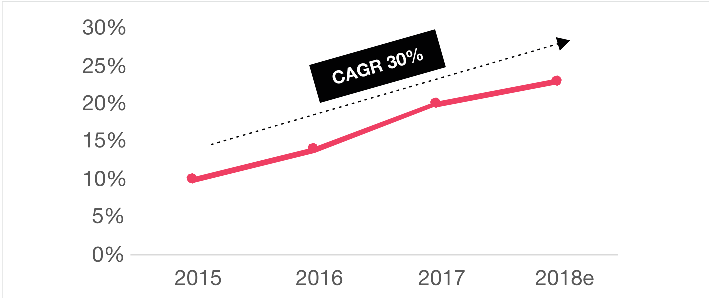
Overview of the economy



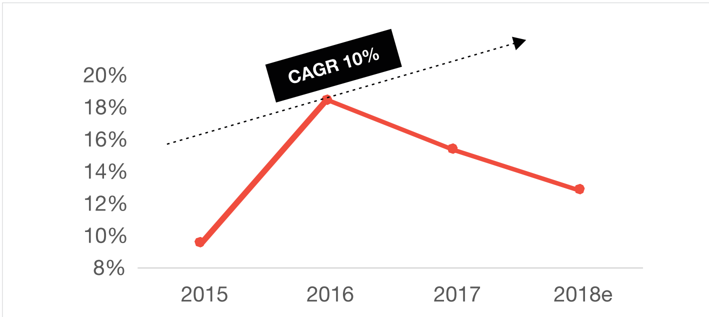
The growth of the service sector has strengthened the Nigerian economy, as this sector contributed about half of the country's GDP in 2018, toppling the 10% from oil and gas and 22% from agricultural sector. 1 Real GDP grew by an estimated 1.9% in 2018, which can be attributed to a recovery in services and industry- particularly mining, quarrying, and manufacturing. Growth in agriculture was slow, largely due to clashes between farmers and herders, flooding and insecurity in the north east.[1]

In addition to GDP growth, other economic indicators that may influence intellectual property infringement practices include unemployment, inflation, and exchange rates. Between 2015 and 2018, the unemployment rate in Nigeria increased by an annual average of 30%.[2] Increase in unemployment is believed to correlate with increase in criminal activities, which encompasses counterfeiting and piracy. Inflation accelerated by an average of 10% between 2015 and 2018[2], while the naira-to-dollar exchange rate stayed relatively steady, hovering between N305 and N307 in the later part of 2019[2]. Because inflation and naira depreciation increase the 'real' price of imported authentic goods, an economy with high inflation and a depreciating currency creates a fertile breeding ground for product counterfeiting and piracy.

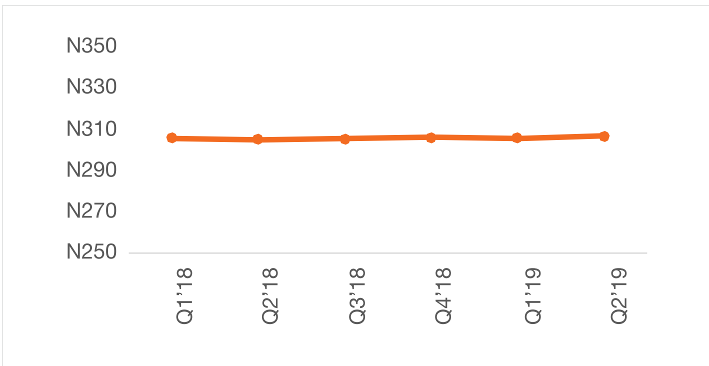
Unemployment Rate (%)



Inflation Rate



Official Exchange Rate



Analysis of The Detrimental Impact to Nigeria's Economy and The Potential Improvement

A weak IP protection regime hinders foreign direct investment (FDI), innovation, R&D and technology transfer. Further, weak IP protection robs entrepreneurs of profits and could harms consumers.

The OECD discovered that the strength of a country's patent protection is positively correlated to FDI inflows. Economists discovered that a 1% increase in a country's patent protection correlates to a 2.8% increase in FDI, and a 1% improvement in trademark and copyright protection increases FDI by 3.8% and 6.8% respectively.[3] For every year that Nigeria fails to address its failing IP protection regime, the country forfeits much-needed economy-boosting FDI. OECD also discovered that a 1% increase in the strength of patent protection, a basic and key form of IPR protection, in developing countries correlates to a nearly 1% increase in domestic R&D. A similar increase of trademark and copyright protection, two other critical parts of an effective IPR regime, correlates to a 1.4% and a 3.3% increase in domestic R&D, respectively.[3] Businesses are less likely to invest in R&D if they are not certain that their intellectual property will be secure. The lack of adequate IP protection in Nigeria is killing R&D, which is necessary to stimulate innovation in the economy.

Businesses must constantly innovate to contribute to the success of today's economy, however a weak IP regime discourages such innovation. Every naira that is earned from counterfeit products is a naira stolen from the original intellectual property owner. Strong IP protection could propagate business and hereby increase the national GDP. Weak IP regimes are detrimental to consumers. Patents assure consumers of the quality of the products they consume, many of which influence human safety. Counterfeit goods like medicines, auto parts, food and beverages could cause serious harm to consumers.

Case Studies of Other Jurisdictions: South Africa

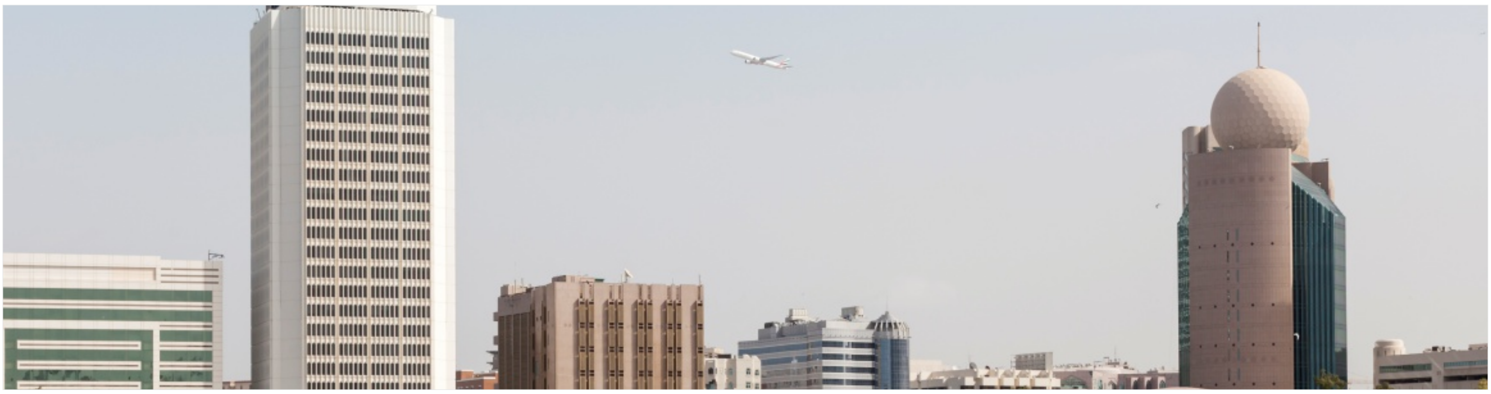
Like many sub-Saharan African countries, the South African IP protection regime is weak and in need of a more comprehensive policy. Although much effort has been made to bring the intellectual property laws up to international standards, gaps remain. Counterfeiting and piracy pose major challenges to the South African economy. Between the 18th and 22nd of April 2019, R18.5 million of counterfeit goods were confiscated in Gauteng alone.[4] Clothing and footwear are among the most common of the seized items.

In 2018, the South African government approved phase 1 of the Intellectual Property (IP) Policy as a core pillar of the South African government's National Development Plan, which prioritizes innovation, optimum productivity and maximizing the nation's competitive advantages.[5] The new policy's major objectives include promotion of local manufacturing, preserving the country's resources, stimulating innovation and empowering indigenes to fully harness their IP system.[5] The South African government seems to be making an earnest effort towards improving the country's IP regime. It will be no surprise to see the country's IP rights on par with international standards in years to come.

Recommendations

The strongest tool with which to restore Nigeria's intellectual property protection and enforcement regime are legislation and policy. Legislation and policy initiatives that aim to stimulate the economy should also prioritize IP protection.

Legislative recommendations for a healthier IP regime in Nigeria include improving enforcement procedures, strengthening local legislation and ratifying international IP agreements, enacting laws against internet piracy fraud, tightening borders, and addressing deficiencies in our criminal procedures. Policy recommendations include adopting a collaboratory inter-agency approach with regulatory agencies and private sector players, expanding capacity building as it relates to IP rights, and increasing public awareness.[6]



The following comprehensive IP protection framework could go a long way in reforming Nigeria's IP protection regime:

Intellectual Property Rights Protection Framework

Regulations & Advocacy

- Propose laws and regulation
- Advocate IP protection rights with relevant entities

Pre-registration Support

- Provide pre-registration support covering idea/mention development assistance, funding and
- Advocate IP protection rights with relevant entities

Registration/Examination

- Received and register patents, trademarks, copyrights and industrial designs
- Examine submitted applications to ensure idea/invention novelty and registrability

Dispute Resolution

- Handle dispute settlement between conflicting parties (e.g. reconciliation, mediation, arbitration, small claims courts or committee, e.t.c.)

Enforcement

- Enforce relevant legislation and inflict sanctions in case of infringement
- Resolve issues and/or submit cases to relevant judicial bodies

Research & Statistics

- Track IP statistics to assess performance, identity shortfalls, and come up with targeted action plans
- Launch research programs to advance the knowledge and evidence base upon which IP policy is built

Empowerment

- Track IP statistics to assess performance, identity shortfalls, and come up with targeted action plans
- Launch research programs to advance the knowledge and evidence base upon which IP policy is built

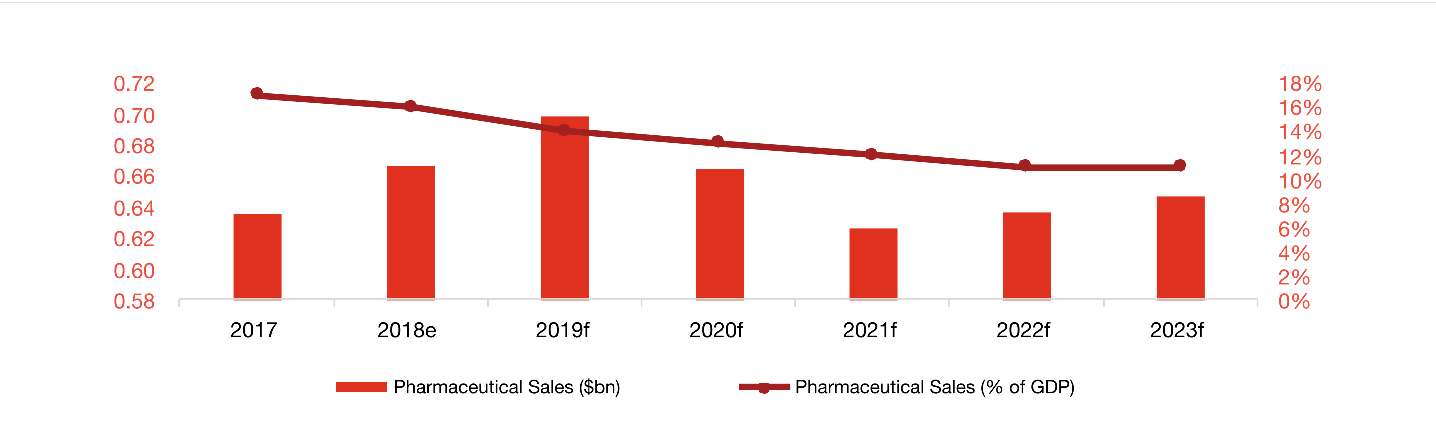
The Impact of IP Infringement on Sectors

Pharmaceuticals

The Nigerian pharmaceutical industry is forecast to grow from $666m in 2018 to $698m in 2019 but is expected to experience a decline of 0.6% per annum between 2019 and 2023.[7] Pharmaceutical sales are projected to account for 14% of GDP in 2019, down from an estimate of 16% in 2018.[7] This downward trend is expected to continue at an annual average of 7%, closing at a forecast 11% in 2023.

Slow progress with development of progressive reforms will continue to negatively affect economic development and self-sufficiency targets of the pharmaceutical sector. The government's ability to properly support local industries such as the pharmaceutical industry is largely dependent on oil revenues, posing upside risk. WHO continues to support local drug manufacturers in improving their competitiveness with foreign generic drug makers. This is expected to positively impact the local drug manufacturing industry.

Nigeria Pharmaceutial Sales ($bn and % of GDP)



Nigeria has emerged as a hotspot for the manufacture and trade of fake drugs. The National Agency for Food and Drug Administration and Control (NAFDAC) attributes the issue to a problematic system and porous borders.[8] Weak pharmaceutical regulation and corrupt officials continue to thwart NAFDAC's efforts to eradicate fake drugs.

The proliferation of fake and counterfeit medicine has detrimental effects on the economy and on society. Nigeria is estimated to lose about N200 billion annually to counterfeit medicines (excluding substandard drugs) [8]. A market survey by Pfizer found that 40% of the Pfizer medicines in Nigeria are soured from illicit parallel importation (a form of counterfeiting).[9] A 2011 WHO study found that about 64% of anti-malarial drugs in Nigeria were fake.[8] The counterfeit and substandard drug distribution network is so expansive that over 50% of drugs, food and drinks sold in open markets are counterfeit. These markets serve most Nigerians, whose low disposable income pushes safer pharmacies, and in turn drugs, out of reach. Number of deaths attributable to the consumption of fake medicine could fall in the ten to hundreds of thousands.

The legislation that most significantly impacts the war against fake drugs are the Counterfeit and Fake Drugs and Unwholesome Processed Foods (Miscellaneous Provisions) Act (CAP C34, 2004), and the National Agency for Food and Drugs Administration and Control (NAFDAC) Act (CAP N1, 2004) that establishes the major administrative body in the fight against fake drugs. Under the former Act, purveyors of fake foods could be fined up to N500,000 and imprisoned for between 5 and 15 years.[10] NAFDAC assesses the duality of good and registered them accordingly and have the power to seize and destroy counterfeit goods.

While the regulatory and agency instruments play perhaps the strongest role in curbing the manufacture and spread of fake drugs, innovative technology also plays a role. RxAll, for example, is a proprietary molecular sensor device that uses an AI algorithm to carry out non-destructive drug authentication.[11]

Other startups like MPedigree Network and Sproxil allow consumers to text the codes on their drug purchase to a number to verify authenticity.[12] Enforcement of regulation and strengthening of agencies coupled with innovation will continue to be the biggest drivers in remedying the fake drug epidemic.

Information and Communication Technology (ICT)

Nigeria remains Africa's largest ICT market, boasting 82% of the continent's telecom subscribers, 29% of internet usage, and about 11.8% contribution to national GDP in 2018. With about 64 million broadband subscriptions (34% penetration) and 173 million registered phone lines as at March 2019, tele-density stands at 91%.[13]

Software piracy continues to tarnish the Nigerian ICT sector. Reasons why Nigerians continue to purchase pirated software include lack of awareness, lack of adequate authorized resellers, and high price of authentic software. An authentic 1-year subscription to Microsoft Office 365 Home, for example retails at $99 (~N36,000), which is a steep fee for the average working professional. Some customers intentionally purchase pirated software as a cheap alternative to legal software, while others intentionally purchase the fake products because the authentic versions are difficult to come by. Another group of customers purchase the pirated software unknowingly. Factors that perpetuate software piracy include lack of adequate legal protection and lack of resources needed to fight the issue.

In 2016, the Nigerian Minister of Communications stated that Nigeria loses about $287m to software piracy annually and an earlier study showed that 82% of software installed on personal computers in Nigeria were unlicensed. [14] The impact of this activity is substantial- software developers are robed of well-deserved income, and government loses out on potential revenues from taxes duties and levies.

Growth and development in the ICT sector have highlighted the need to protect the ownership rights in such ICT programs. The IP rights found in the source and object codes of ICT solutions are protected by Copyright. This copyright need not be registered before the owner of the solution can enforce any infringement of his rights. In addition to the developer's right to institute a civil action in the Federal High Court in the event of piracy of his works, the law also imposes criminal liability for making or commercially dealing with copies of infringing works. The penalties for infringement may be a fine or even imprisonment. Further, where such ICT program is a novel development and intended for industrial application, the developer can register it as a patent. The brand name of such program may also be registered as a trademark. The know-how in developing it will be recognized as a trade secret and protected accordingly.

Recommendations for addressing the issue of software piracy include awareness campaigns, proper enforcement of IP laws, and government support for local companies who try to fight software piracy.

Creative/Entertainment Industry

The creative sector in Nigeria has enjoyed rapid growth over the years, and this trend is expected to continue. The IMF described Nollywood as the second biggest employer in Nigeria. By 2016, about N 239 billion of Nigeria's GDP was attributable to the film industry.[15] We estimate that the Nigerian music industry generated $39 million in revenues.[16] The gaming industry is also a major player in the larger entertainment industry; UNICON estimates its value at about $ 150 million[17]. The Nigerian creative industry contributes significantly to the economy and must be preserved to stimulate economic growth.

Nigeria is known for her creative talent, but the entertainment industry is plagued with many challenges, one of which is piracy. Nigeria has one of the highest occurrences of piracy in the world. Despite the industry's contribution to national revenue, the World Bank reports that for every legitimate film sold, nine others are pirated.[18] About 80% of international music CDs available in Nigeria are pirated. In the local industry, 40% of products are copied, counterfeited, or sold illegally. Piracy accounts for 7% of global trade, but Nigeria is home to 80% of pirated international CDs.[19]

One of the biggest reasons for continued piracy in Nigeria include insufficient funding of the Nigerian Communications Commission (NCC). The NCC works with consumer protection, standards, environmental and security agencies to fight against piracy in the creative industry but struggle to meet their mandate because of inadequate funding. Currently, the works of many Nigerian artists are accessible for free online without the consent of the owner, robbing the creators of potential revenue. Only an estimated 11% of Nigerian consumers pay for their music.[20] Music piracy impacts both local industries and foreign investments. The local industry loses out on revenues and deters foreign investment. The social implications of piracy are also notable. Local creativity is dampened by piracy as producers are unable to compete with cheap substandard pirated products.

The Nigerian textile industry also falls prey to IP infringement. The Nigerian Textile Manufacturers Association (NTMA) has stated that Nigeria loses about 325 million dollars to tax evasion and smuggling of textiles annually.[21] The cotton and textile industry in Nigeria was said to be the second largest in Sub-Saharan Africa during the 1980s, but practices like copying of designs, counterfeiting trademarks, and falsifying descriptions have since destroyed the industry. The main challenge facing producers in this sector is the influx of cheap substandard Asian imports smuggled into the country. Standard Organization of Nigeria (SON) and NTMA found millions of naira of counterfeit textile products in past raids and offenders were prosecuted.

The predominant IP right in the creative/entertainment industry is copyright in their creative works. The rights and enforcement powers against piracy and counterfeiters mentioned in previous sectors also apply here. The creatives who design the ornamental or aesthetic features of a product may also obtain IP rights through the registration of these designs, also known as Industrial Design. This right is only enforceable when registered according to the law. Where there is an infringement of this right, the holder has the power to seek relief by filing a civil action in the Federal High Court.

To improve the state of piracy in the creatives sector, regulatory agencies like the NCC and NTMA must work together. An increase in the number of entertainment lawyers and subject matter experts will go a long way in tackling the issue. To address this, students should be educated on the IP infringement and encouraged to pursue an education in this line.[21]

Consumer Goods

As Nigeria recovers from the recent recession, the consumer goods market is expected to follow suit. Nigeria's large population fuels demand for necessities like food and clothing, which accounts for the retail sector's 16% contribution to GDP. The food and beverage sectors drive the manufacturing sector, which makes up 8.7% of the GDP.[22]

Like the IT and creative industries, the consumer goods sector also suffers from IP issues. While direct trademark, patent and copyright infringements are the most hazardous to the consumer goods industry, other major concerns include counterfeit goods and grey goods (also known as parallel importation). Counterfeit goods are damaging primarily because their inferior quality damages long-established brand reputations and pose serious health and safety risks. Conversely, grey goods are products that are sold outside the original manufacturer's authorized distribution system, usually via unauthorized cross-border trade. In 2013, Nigeria lost a reported $ 500 billion to the importation of grey goods in the automobile industry.[23]

Many developing countries like Nigeria continue to suffer from counterfeiting in the consumer goods industry due to the lack of technology and infrastructure to regulate the importation of grey goods. The Trademark Act prevents IP infringement, but it may be insufficient in preventing the importation of grey goods into Nigeria. According to the Act, infringement only occurs when a person uses a trademark identical to that of the registered user as a means of deceiving buyers. This does not punish parallel importation as the trademark in this case is original and registered. Consumer goods businesses are unable to control the quality of these grey goods, and like counterfeit goods, it may damage the reputation of the company.

One of the most invaluable commodities for consumer goods companies is brand power. Undelaying the whole concept of branding is “Trademark”. To protect these interests, the companies should register the names and or logos of each products as Trademarks. The common infringement of counterfeiting and passing off are predominant in this industry. The civil and criminal enforcement procedures for the protection of Trademarks also apply here.

Rather than ban parallel importation in Nigeria completely, the law in Nigeria could ensure these importers are authorized to sell the product. Nigerian law may adopt the United States Custom Service Regulation's approach, which prohibits parallel importation except if the trademark owner and local entity importing the goods are owned by the same person. Agencies such as the Consumer Protection Council should ensure that consumers are adequately protected against any form of IP infringement.

Conclusion

Intellectual Property infringement has been detrimental to the Nigerian economy in many ways. It has kept Nigeria from attaining its full economic potential and has put lives at risk. To tackle the national IP infringement, the government should address systemic corruption and inadequate funding, strengthen IP legislation, and foster collaboration among government agencies. Further, the government should launch an awareness campaign to educate the public on the dangers of IP infringement to society and their role in the fight against IP infringement.

In the longer term, the Nigerian IP protection ecosystem would benefit from adopting the following recommendations modelled after best practices across the world:

Regulation & Advocacy	1	IP laws need to be open-ended, flexible and forward looking to place Nigeria on par with international IP regulation standards
	2	IP laws must be complemented with comprehensive bylaws that detail and explain the laws
Pre-registration Support	3	Government agencies could offer pre-filing covering viability assessments, product development advice and training for Nigeria businesses
	4	Government agencies could assist in securing required funding for IP registration, as well as in identifying commercialisation opportunities
	5	Government agencies could offer applicants free online databases and libraries to check product novelty prior to applying for protection
	6	Government agencies could conduct preliminary examination to check for novelty and potential registration obstacles
Registration	7	Government agencies could offer IP e-service portals to submit and manage requests, along with detailed guides and video tutorials
	8	Government agencies could adopt examiner incentive schemes and capability building programs to attract, retain and develop examiners
	9	Some agencies could resort to validation agreements as a transitory solution to overcome the shortage in examiners
	10	Agencies could adopt a number of strategic agreements focused on work sharing to expedite the examination process
Dispute Resolution	11	Leading agencies could offer alternative dispute resolution support such as mediation
Enforcement	12	IP agencies could introduce stricter provisions across IP laws to instigate stronger IP enforcement
	13	IP agencies could collaborate with other entities involved in the IP enforcement process via taskforces or IP units
Research & Statistics	14	Government agencies could track IP statistics to understand current trends and support decision makers in making informed decisions
	15	Advanced government agencies could launch research programs to develop the knowledge and evidence base upon which IP policy is built
Empowerment	16	Government agencies could inform the public on the danger of IP infringement on society and on consumer health, and empower the public with information on how to report cases of IP infringement via dedicated information centers, guides, and case studies
	17	Government agencies could use print, radio, video and social publishing channels translated in the major Nigeria language to ensure maximum outreach
	18	Government agencies could run outreach initiatives to raise awareness and promote respect for IP amongst youths and general public

Notes

[1] “Nigeria Economic Outlook”, Africa Development Bank, availaibe at https://www.afdb.org/en/countries/west-africa/nigeria/nigeria-economic-outlook

[2] BMI Research Reports

[3] “Promoting and Protecting Intellectual Property in Nigeria”, pg 8, Business Action to Stop Cuunterfieting and Piracy, availaibe at https://iccwbo.org/content/uploads/sites/3/2017/01/Promoting-and-Protecting-Intellectual-Property-in-Nigeria.pdf

[4] “Counterfeit goods crippling SA economy – experts”, Liam Ngobeni, Pretoria East Rekord, availaibe at https://rekordeast.co.za/204963/counterfeit-goods-crippling-economy-experts/

[5] “Phase I of South Africa's IP Policy – What you need to know” , Janice Galvad & Ramon Pereira, Go Legal Industry News & Insights, availaibe at https://www.golegal.co.za/ip-policy-south-africa/

[6] “Promoting and Protecting Intellectual Property in Nigeria”, pg 5, Business Action to Stop Cuunterfieting and Piracy, availaibe at https://iccwbo.org/content/uploads/sites/3/2017/01/Promoting-and-Protecting-Intellectual-Property-in-Nigeria.pdf

[7] “Nigeria Pharmaceuticals & Healthcare Report” , Fitch Solutions, available for a fee at bmo.bmiresearch.com

[8] “Promoting and Protecting Intellectual Property in Nigeria”, pg 16, Business Action to Stop Cuunterfieting and Piracy, availaibe at https://iccwbo.org/content/uploads/sites/3/2017/01/Promoting-and-Protecting-Intellectual-Property-in-Nigeria.pdf

[9] Sourced directly from Pfizer Nigeria representatives in September 2019

[10] Counterfeit And Fake Drugs And UnwholesomeProcessed Foods (Miscellaneous Provisions) Act, available at https://www.unodc.org/res/cld/document/nga/counterfeit-and-fake-drugs-and-unwholesome-processed-food-act_html/Nigeria_Counterfeit_and_Fake_Drugs_and_Unwholesome_Processed_Food_Act.pdf

[11] RxAll, available at https://www.rxall.net/about-us

[12] “Nigerian texters to take on the drug counterfeiters”, BBC News (2013), available at: http://www.bbc.co.uk/news/world-africa-20976277

[13] Nigeria - Information and Communications Technology, export.gov, available at https://www.export.gov/article?id=Nigeria-Information-and-Communications-Technology

[14] “Why $287m yearly loss to pirated software is dangerous to economy” , Guardian Nigeria, abvailable at https://guardian.ng/technology/why-287m-yearly-loss-to-pirated-software-is-dangerous-to-economy/

[15] Spotlight- The Nigerian Film Industry, PwC Nigeria, available at https://www.pwc.com/ng/en/assets/pdf/spolight-the-nigerian-film-industry.pdf

[16] The Business of Entertainment Harnessing growth opportunities in entertainment, media, arts and lifestyle, PwC Nigeria, available at https://www.pwc.com/ng/en/assets/pdf/the-business-of-entertainment-final.pdf

[17] “Nigeria Tops List of World's Fastest Creative Industry”, BizWatchNigeria.NG, available at https://bizwatchnigeria.ng/nigeria-tops-list-of-worlds-fastest-creative-industry-aisha-abubakar/

[18] “Nigeria's film industry: a potential gold mine?”, Rebecca Moudio, Africa Renewal (2013), available at http://www.un.org/africarenewal/magazine/may-2013/nigeria%E2%80%99s-film-industry-potential-gold-mine

[19] “Promoting and Protecting Intellectual Property in Nigeria”, pg 4, Business Action to Stop Cuunterfieting and Piracy, availaibe at https://iccwbo.org/content/uploads/sites/3/2017/01/Promoting-and-Protecting-Intellectual-Property-in-Nigeria.pdf

[20] “On the complicated issue of music blogs and selling music in Nigeria” , Tanjarin, available at https://tanjarin.com/comment-on-the-complicated-issue-of-music-blogs-and-selling-music-in-nigeria-8/

[21] “Why CBN is leading onslaught against smugglers of rice, other imports” , Sunday Michael Ogwu, Daily Trust, available at https://www.dailytrust.com.ng/why-cbn-is-leading-onslaught-against-smugglers-of-rice-other-imports.html

[22] National Bureau of Statistics, BMI Research

[23] Protection Of Intellectual Property In Nigeria; Effect Of Gray Market Goods; Challenges And Solutions, Aderonke Adejugbe, available at http://www.mondaq.com/Nigeria/x/307654/Trademark/PROTECTION+OF+INTELLECTUAL+PROPERTY+IN+NIGERIA+EFFECT+OF+GRAY

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