

## REVIEWING THE TECHNOLOGY TRANSFER AND ACQUISITION REGIME UNDER THE NIGERIAN LEGAL FRAMEWORK FOR INDIGENIZATION<sup>1 2</sup>

### **Abstract**

*The concept of technology-transfer and acquisition remains an indispensable tool in the realization of Nigeria's economic development goals and its long-stride towards self-sufficiency via an industrialization-drive. To this end, the Nigerian legal framework for the achievement is consciously designed to promote the development of local industries and hence, curtail over-reliance on expatriate/ foreign players. The underlying objective of this research is to review the legal regime governing transfer of technology in Nigeria in the bid to sustainably achieve indigenization, with a view as to determining the efficiency or otherwise of our contemporary laws and the enforcement mechanisms. Adopting the doctrinal approach/ research methodology, this work finds that, regardless of the concerted efforts made by the Nigerian government towards achieving this goal, there still remain some gaps to be plugged which include: the lack of a clear and consistent legal and regulatory framework and paucity of skilled personnel. It is therefore recommended inter alia: that the government invests more in both infrastructure and human capital, encourage good collaboration between the academia and the industry, embark on a more coordinated technology transfer approach.*

**Keywords:** Technology transfer, Indigenization, Development, Legal framework.

### **1 Introduction**

Nigeria, the most populous country in Africa, has vast potential for economic growth and development. The Nigerian economy has in recent time's experienced seismic waves reverberating through the nation. Its financial artery is being cut by changes in fossil fuel consumption.<sup>3</sup> The economy has taken several hits that has transcended into a low GDP for the country. The war against fossil fuel<sup>4</sup> has made the nation's fortunes take a nose dive. Proponents of this war against fossil fuel maintain that fossil fuel emit carbon which in turn cause global warming. Norway for example passed a legislation banning petrol cars by 2025. Nigeria is adversely affected by this policy for the country relies heavily on petrol dollar generated by its sale of crude oil to run her affairs. Equally Nigeria has maintained the infamous title of 'World Poverty Capital' according to the World Bank since 2016. The World Bank data had shown that four in every ten Nigerians live below the poverty line of \$1.9 per day.<sup>5</sup>

One sure way to pull Nigeria out of this economic quagmire is through technology transfer. Technology transfer refers to the process of transferring knowledge, skills, technologies,

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<sup>3</sup> Lars Kamer, 'Population in Africa 2020, by Country', (Statista, 15 December 2022) <<https://www.statista.com/statistics/1121246/population-in-africa-by-country/>> accessed 02 February 2023.

<sup>4</sup> Marik Schiffer, a war running on fossil fuels *Nature Human Behaviour* volume 6, pages 771–773 (2022)

<sup>5</sup> Aliokor Victor, Nigeria: How do we expect "world poverty capital" to be safe? July 19 2022  
<https://businessday.ng/opinion/article/nigeria-how-do-we-expect-world-poverty-capital-to-be-safe/>

and other resources from one organization or country to another.<sup>6</sup>Technology transfer is a critical component for economic development, as it can lead to increased productivity, efficiency, and competitiveness.<sup>7</sup>The growth of modern states economies is attributed to advancement of technology, from the industrial revolution to the information age. Technology has always been at the fore of improving the economic lives of citizens in a given country.<sup>8</sup> Technology transfer therefore is a proverbial pill that would definitely cure the malaise of the declining Nigerian economy. Experts in various schools of thought have recognized the role of technology in explaining growth. Technological innovation is an avenue for economic expansion.<sup>9</sup>This process is critical for the development of any nation, as it allows for the acquisition and adaptation of advanced technologies, which can be used to improve productivity, increase efficiency, and enhance overall competitiveness. Because of the difference among nations in technological capacity there is a continual process for international diffusion of technology.<sup>10</sup>In Nigeria, the concept of technology transfer is closely linked to the legal framework for indigenization, which aims to promote the participation of Nigerian citizens and businesses in the country's economy. The Nigerian legal framework for indigenization is a complex and multifaceted system that has evolved over time. It is based on a number of laws and regulations, including the Nigerian Enterprises Promotion Act (NEPA) of 1972 et al. These laws and regulations provide a framework for the transfer of technology and the promotion of Nigerian ownership and control of the country's economy. Under the Nigerian legal framework for indigenization, there are several key concepts that are critical to understanding the process of technology transfer. Legal mechanisms have been equally put in place to facilitate technology transfer in Nigeria. One of the major challenges facing technology transfer in Nigeria is a lack of clear and consistent legal and regulatory frameworks.<sup>11</sup> The country has a complex and often conflicting system of laws and regulations that can make it difficult for businesses and individuals to navigate the process of acquiring and utilizing new technologies. Additionally, there is often a lack of clear and consistent guidance on the legal and regulatory requirements for technology transfer, which can make it difficult for businesses and individuals to understand their rights and obligations. Another major challenge facing technology transfer in Nigeria is a lack of access to funding and investment.<sup>12</sup> Despite the country's rich natural resources and large population, many local

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<sup>6</sup>Julia Gottwald Dipl.-Ing, *Technology Transfer*, (Springer)<[https://link.springer.com/referenceworkentry/10.1007/978-3-642-28036-8\\_673](https://link.springer.com/referenceworkentry/10.1007/978-3-642-28036-8_673)>accessed 02 February 2023.

<sup>7</sup>OS Ige and OAAdegbite, *Enhancing Technology Transfer and Diffusion in Nigeria: A Study of the Pharmaceutical Industry*(Palgrave: Macmillan, 2017)

<sup>8</sup> Collins C Ajibo, Miriam C Anozie, Emmanuel Onyebor, Timothy Umahi ,Jude Odinkonigbo, Helen Agu Technology Transfer For Development In Nigeria: Patterns, Problems And Prospects Commonwealth Law Bulletin 45 (1) 2019,70

<sup>9</sup>Elias H. Tuma Technology Transfer and Economic Development: Lessons of History The Journal of Developing Areas Vol. 21, No. 4 ( 1987), 403

<sup>10</sup>Edwin Mansfield Economic Impact of International Technology Transfer Vol. 17, No. 1 ( 1974), . 7-11

<sup>11</sup>AA Adebayo, *Challenges and Prospects of Technology Transfer in Nigeria: A Review of Literature*(2015) Journal of Economics and Sustainable Development, 6(6), 101-110.

<sup>12</sup>Collins Ajibo, *Technology Transfer for Development in Nigeria: Patterns, Problems and*

businesses and entrepreneurs struggle to secure the capital they need to acquire and implement new technologies. This is often due to a lack of access to traditional forms of financing, such as bank loans and venture capital, as well as a lack of support from government and international organizations. This article is an attempt to solve this challenge.

This article is divided into five parts; part two immediately following this introduction discusses the historical and legislative development of the indigenization concept in Nigeria and their impact on the economic growth of the country. Part three analyses Legal Mechanisms that has been put in place by Nigeria to assist in the transfer and absorption of technology in Nigeria. In part four, we examine the effectiveness of the Legal Framework for Technology Transfer in Nigeria drawing out its defects. Part five is our recommendations followed by concluding remarks.

## 2. The Historical and Legislative Development of the Indigenization Concept in Nigeria

The concept of indigenization in Nigeria refers to the process of promoting and prioritizing the participation and ownership of Nigerian citizens in the country's economic development. This concept has a long and complex history that is closely tied to the legislative development of the country. Historically, the concept of indigenization in Nigeria can be traced back to the colonial period.<sup>13</sup> During this time, the British government controlled the country's economy and resources, with little participation or ownership by Nigerian citizens. This situation persisted even after the country gained independence in 1960. In the 1970s, the Nigerian government began to implement policies aimed at promoting indigenization.<sup>14</sup> The first of these policies was the Nigerian Enterprises Promotion Decree of 1972, which aimed to increase the participation of Nigerian citizens in the country's economy by setting quotas for Nigerian ownership in certain industries.<sup>15</sup> This decree was followed by the Nigerian Enterprises Promotion (Amendment) Decree of 1977, which further expanded the quotas for Nigerian ownership and also established the Nigerian Enterprises Promotion Board to oversee the implementation of the policies. In the 1980s, the government continued to promote indigenization through various policies and legislation. The Nigerian Investment Promotion Commission Act of 1995 was passed to encourage foreign investment in the

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*Prospects'*, (11 November 2019) <[https://www.researchgate.net/publication/337520600\\_Technology\\_transfer\\_for\\_development\\_in\\_Nigeria\\_patterns\\_problems\\_and\\_prospects](https://www.researchgate.net/publication/337520600_Technology_transfer_for_development_in_Nigeria_patterns_problems_and_prospects)> accessed 02 February 2023.

<sup>13</sup> Festus Chibuike Onuegbu, *Indigenization of Nigeria's Economy: Appraising the Second and Third National Development Plans 1970-1980* (Researchgate, January 2016). <[https://www.researchgate.net/publication/349703522\\_Indigenisation\\_of\\_Nigeria's\\_Economy\\_Appraising\\_the\\_Second\\_and\\_Third\\_National\\_Development\\_Plans\\_1970-1980](https://www.researchgate.net/publication/349703522_Indigenisation_of_Nigeria's_Economy_Appraising_the_Second_and_Third_National_Development_Plans_1970-1980)> accessed 01 02 2023.

<sup>14</sup> John Darnton, *Nigeria's Indigenization Policy Under Fire* (The New York Times, 30 October 1976) <<https://www.nytimes.com/1976/10/30/archives/nigerias-indigenization-policy-under-fire.html>> accessed on 01 02 2023.

<sup>15</sup> StopLearn Team, *Indigenization: Nigerian Enterprises Promotion Decree 1972 & 1977* (stoplearn, 20 August 1972) <<https://stoplearn.com/indigenization-nigerian-enterprises-promtion-decree-1972-1977/?amp=1>> accessed on 01 03 2023.

country, while also ensuring that Nigerian citizens were able to participate and benefit from this investment. Additionally, the Nigerian Industrial Development Bank Act of 2001 was passed to provide funding and support for Nigerian-owned businesses.<sup>16</sup> Despite these efforts, the implementation of indigenization policies in Nigeria has faced significant challenges. One major issue is the lack of proper enforcement and monitoring of the policies, which has led to many businesses circumventing the quotas for Nigerian ownership.<sup>17</sup> Additionally, there are concerns about the potential negative impact of indigenization policies on foreign investment and the country's overall economic development.

In recent years, there have been calls for a review of indigenization policies in Nigeria. Some argue that the policies should be revised to better balance the promotion of Nigerian ownership with the need to attract foreign investment and promote economic growth.<sup>18</sup> Others argue that the policies should be scrapped altogether, as they have not been effective in achieving their intended goals.<sup>19</sup> Overall, the concept of indigenization in Nigeria has a long and complex history that is closely tied to the legislative development of the country. While there have been efforts to promote Nigerian ownership and participation in the country's economy, the implementation of these policies has faced significant challenges and there are ongoing debates about the best way to move forward.

### 3. Legal Mechanisms for Technology Transfer in Nigeria

One of the most common legal mechanisms for technology transfer in Nigeria is the use of licenses. A license is a legal agreement between the owner of a technology (the licensor) and the user of the technology (the licensee). The license grants the licensee the right to use the technology for a specific purpose and within a specified period of time. This allows companies and individuals in Nigeria to access and use foreign technologies without having to develop them from scratch. Joint ventures are another important mechanism for technology transfer in Nigeria. A joint venture is a partnership between two or more companies or individuals to undertake a specific project or business venture.<sup>20</sup> This type of arrangement allows companies to pool their resources, expertise, and technologies to undertake large-scale projects and to access new markets and technologies. Another legal mechanism for technology transfer in Nigeria is the use of contractual agreements. This includes agreements such as technology transfer agreements, research and development agreements, and collaborative research agreements. These agreements allow companies and individuals to share technologies, expertise, and resources for specific projects or business ventures. However, in Nigeria, the government has put in place several legal

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<sup>16</sup>UNEP FI, Bank of Industry Limited, (UNEP, 22 September, 2021) <<https://www.unepfi.org/member/bank-of-industry-limited/>> accessed on 02 February 2023.

<sup>17</sup>Ifeanyi Achebe, *The Legal Problems of Indigenization in Nigeria: A Lesson for Developing Countries* (UC Hastings Law, 1989). <[https://repository.uchastings.edu/hastings\\_international\\_comparative\\_law\\_review/vol12/iss3/6/](https://repository.uchastings.edu/hastings_international_comparative_law_review/vol12/iss3/6/)> accessed 02 February 2023.

<sup>18</sup>Assisi Asobie, *Indigenization, Class Formation and Class Struggle in Nigeria: An Analysis* (Jstor, 1988) <<https://www.jstor.org/stable/24486654>> accessed on 02 February 2023.

<sup>19</sup> Ibid.

<sup>20</sup>Marshall Hargrave, *Joint Venture (JV): What Is It and Why Do Companies Form One?* (Investopedia, 30 October 2022) <<https://www.investopedia.com/terms/j/jointventure.asp>> accessed 02 February 2023.

mechanisms to facilitate technology transfer and promote the growth of the country's technology sector. These mechanisms include the following:

### **3A The National Office for Technology Acquisition and Promotion (NOTAP)**

The National Office for Technology Acquisition and Promotion (NOTAP) was established by Act No. 14 of 1979 with the mandate to encourage, promote and coordinate the transfer of technology in Nigeria.<sup>21</sup> The organization plays a vital role in the development of the Nigerian economy by facilitating the transfer of technology from developed countries to Nigeria, as well as promoting local technological innovation and development. One of the main ways NOTAP promotes technology transfer in Nigeria is through the registration and evaluation of technology transfer agreements. This process ensures that technology transfer agreements are in line with Nigerian laws and regulations, and that the technology being transferred is relevant and suitable for Nigeria's needs. NOTAP also provides assistance to Nigerian companies and organizations in negotiating and drafting technology transfer agreements.<sup>22</sup>

NOTAP also invites foreign experts to provide training and technical assistance to Nigerian companies and organizations. In addition, NOTAP works to promote local technological innovation and development by providing funding and other support to Nigerian researchers and innovators.<sup>23</sup> NOTAP also works with other government agencies and organizations to create an enabling environment for innovation and technology development in Nigeria. NOTAP also has a mandate to develop and implement policies and strategies aimed at developing the Nigerian technology sector. This includes the establishment of technology parks and incubation centers, as well as the provision of support for technology-based SMEs to grow and thrive. Furthermore, NOTAP also plays a critical role in the protection of Intellectual Property (IP) rights in Nigeria. It is the designated agency for registering patents, trademarks, and industrial designs in Nigeria. This helps to create an environment where innovation and creativity can flourish, and also encourages foreign technology partners to invest in Nigeria.

### **3B The National Technology Business Incubation Programme (NTBIP)**

The National Technology Business Incubation Programme (NTBIP) is a government-funded initiative in Nigeria that aims to promote technology transfer and entrepreneurship in the country.<sup>24</sup> The program is managed by the National Office for Technology Acquisition and Promotion (NOTAP), which is responsible for the registration,

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<sup>21</sup>NOTAP Initiatives for Ease of doing Business, (lexology, 12 December 2023). <<https://www.lexology.com/library/detail.aspx?g=70b97445-d342-49da-9b04-40071c00dfc4>> accessed 03 2023.

<sup>22</sup>'NOTAP advances technology transfer initiative, launches 42nd IPTTO' (Punch, 24 April 2018) <<https://punchng.com/notap-advances-technology-transfer-initiative-launches-42nd-iptto/>> accessed 02 February 2023.

<sup>23</sup>EO Ndikom, *The Role of Technology Transfer in Nigeria's Industrialization Process* (2013) International Journal of Economics, Commerce and Management, 1(8), 1-12.

<sup>24</sup>Mohammed Jibrin, 'Technology Incubation Programme for Development of Sustainable Entrepreneurial Skills in Nigeria' (Ijert, 04 December 2013) <<https://www.ijert.org/technology-incubation-programme-for-development-of-sustainable-entrepreneurial-skills-in-nigeria-2>> accessed 02 February 2023.

accreditation, and promotion of technology transfer activities in Nigeria.<sup>25</sup> The NTBIP provides a range of services to help technology-based startups and small and medium-sized enterprises (SMEs) to grow and develop. These services include training and mentoring, access to funding and investment, as well as access to infrastructure and resources. The program also provides a platform for technology transfer, where researchers and entrepreneurs can connect and collaborate to develop new products and services. One of the key ways in which the NTBIP promotes technology transfer is through its incubation centers.<sup>26</sup> These centers provide a physical space for startups and SMEs to work and develop their ideas, as well as access to equipment, facilities, and resources. Incubation centers also provide a platform for networking and collaboration, which is essential for technology transfer. Entrepreneurs and researchers can share knowledge, expertise, and resources, which can lead to the development of new products and services.

Another important aspect of the NTBIP is its training and mentoring program. The program provides training and mentoring to entrepreneurs and SMEs to help them develop the skills and knowledge they need to start and grow their businesses. This includes training on business development, financial management, marketing, and other key areas. The mentoring program provides entrepreneurs with access to experienced business leaders and experts who can provide guidance and advice on how to grow and develop their businesses. The NTBIP also provides access to funding and investment for startups and SMEs. This includes access to grants, loans, and other forms of financial assistance. This funding and investment is critical for technology transfer, as it allows entrepreneurs to invest in the development of new products and services, and to grow their businesses. Finally, the NTBIP also promotes technology transfer through its promotion and marketing activities. The program promotes the products and services of startups and SMEs through trade shows, exhibitions, and other events. This helps to raise awareness of the products and services of these companies and to connect them with potential customers and partners.

### **3C The Nigerian Content Development and Monitoring Board (NCDMB)**

The Nigerian Content Development and Monitoring Board (NCDMB) is a government agency established to promote the development of Nigeria's oil and gas industry by increasing local content and technology transfer.<sup>27</sup> The agency aims to ensure that Nigerians participate meaningfully in the oil and gas industry and to encourage the transfer of technology and skills to local communities.

NCDMB achieves these goals through a number of initiatives and programs. One of these is the Local Content and Local Participation (LCLP) program, which aims to increase

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<sup>25</sup>Ibid.

<sup>26</sup>Ibid.

<sup>27</sup>Olusola John Jegede, *Nigeria: Overview Of Nigerian Local Content Law In Oil And Gas Industry* (Mondaq, 23 December 2020) <<https://www.mondaq.com/nigeria/oil-gas--electricity/1019096/overview-of-nigerian-local-content-law-in-oil-and-gas-industry>> accessed on 03 February 2023.

local content and promote technology transfer in the oil and gas industry.<sup>28</sup> This program provides financial and technical support to local businesses, including small and medium-sized enterprises (SMEs), to enable them to participate in the industry. Another initiative of NCDMB is the Nigerian Oil and Gas Industry Content Development (NOGICD) Act, which provides a legal framework for the promotion of local content and technology transfer in the industry.<sup>29</sup> The Act requires oil and gas companies operating in Nigeria to use Nigerian goods and services and to train and employ Nigerians.<sup>30</sup> This has helped to create new opportunities for local businesses and to increase the transfer of technology and skills to the Nigerian workforce. NCDMB also collaborates with international companies and organizations to promote technology transfer. This includes working with international oil and gas companies to transfer technology and expertise to local businesses. Additionally, NCDMB has established partnerships with universities and research institutions to promote technology transfer through research and development.

### **3D The Nigerian Intellectual Property Office (NIPO)**

The NIPO is a government agency responsible for the administration and enforcement of intellectual property rights in Nigeria.<sup>31</sup> It plays a critical role in promoting technology transfer by providing support and protection for the transfer of technology between local and foreign organizations. The NIPO provides information and education on the importance of intellectual property and technology transfer, as well as how to register and protect intellectual property rights.<sup>32</sup> This helps to create an enabling environment for technology transfer, encouraging innovation and entrepreneurship.

The NIPO also provides assistance with the negotiation and drafting of technology transfer agreements, which helps to ensure that the transfer of technology is done in a manner that is fair and transparent. This protects the interests of both the local organization receiving the technology and the foreign organization transferring it. In addition, the NIPO works closely with local and international organizations to create networks and partnerships that can facilitate technology transfer. This includes collaboration with universities, research institutes, and other technology-focused organizations. Finally, the NIPO also plays a role in protecting the rights of local organizations that have acquired

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<sup>28</sup>ibid.

<sup>29</sup>Nigerian Oil and Gas Industry Content Development (NOGICD) Act, s 69.

<sup>30</sup>Nigerian Oil and Gas Industry Content Development (NOGICD) Act, s 28.

<sup>31</sup>Olusola John Jegede, *Nigeria: Forms & Enforcement Of Intellectual Property Rights In Nigeria* (Mondaq, 25 November 2020) <<https://www.mondaq.com/nigeria/trademark/1009338/forms--enforcement-of-intellectual-property-rights-in-nigeria>> accessed on 03 February 2023.

<sup>32</sup>DayoAdu, *'Nigeria: Protection Of Intellectual Property Rights In Nigeria'* (Mondaq, 15 August 2022) <<https://www.mondaq.com/nigeria/trademark/1221590/protection-of-intellectual-property-rights-in-nigeria>> accessed 02 February 2023.

technology through transfer. This includes providing support in enforcing intellectual property rights, and pursuing legal action against those who infringe on those rights.<sup>33</sup>

#### **4 Effectiveness and Challenges of the Legal Framework for Technology Transfer In Nigeria**

The legal framework for technology transfer in Nigeria is an area of ongoing concern, as the country struggles to effectively leverage its vast natural resources and human capital to develop a robust and sustainable economy.

One challenge facing technology transfer in Nigeria is a lack of skilled personnel.<sup>34</sup> The country has a large and growing population, but many individuals lack the education and training necessary to effectively utilize new technologies. Additionally, there is often a shortage of skilled professionals in key areas such as engineering, computer science, and business management, which can make it difficult for businesses and entrepreneurs to acquire and implement new technologies. In addition to these challenges, there are also a number of structural limitations that have hindered the successful transfer of technology to local industries in Nigeria. One of these is the lack of effective intellectual property (IP) protection. Despite the importance of IP protection for technology transfer, many local businesses and entrepreneurs struggle to protect their ideas and innovations from theft and infringement. This is often due to a lack of awareness of IP laws and regulations, as well as a lack of resources to enforce IP rights. Another limitation is the lack of effective collaboration and networking between businesses, entrepreneurs, and researchers.<sup>35</sup> Despite the importance of collaboration and networking for technology transfer, many local businesses and entrepreneurs struggle to build effective partnerships and networks that can help them acquire and implement new technologies. This is often due to a lack of awareness of the benefits of collaboration and networking, as well as a lack of resources to support these activities.

Overall, the legal framework for technology transfer in Nigeria is an area of ongoing concern, as the country struggles to effectively leverage its vast natural resources and human capital to develop a robust and sustainable economy. Despite a number of efforts to promote technology transfer in recent years, there are still significant challenges and limitations that have hindered the successful transfer of technology to local industries. To overcome these challenges and limitations, it will be important for Nigeria to develop clear and consistent legal and regulatory frameworks, increase access to funding and investment, improve access to education and training, and strengthen intellectual property

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<sup>33</sup>Resolution Law Firm, 'Nigeria: Where To Register Trademark & Patent In Nigeria' (Mondaq, 20 October 2020) <<https://www.mondaq.com/nigeria/trademark/996250/where-to-register-trademark--patent-in-nigeria>> accessed 03 February 2023.

<sup>34</sup>Uche Grace Ojukwu, *The Political Economy Of Technology Transfer And The Challenges Of Development In Nigeria In The Age Of Globalization* (Academia, 2017) <[https://www.academia.edu/42617660/THE\\_POLITICAL\\_ECONOMY\\_OF\\_TECHNOLOGY\\_TRANSFER\\_AND\\_THE\\_CHALLENGES\\_OF\\_DEVELOPMENT\\_IN\\_NIGERIA\\_IN\\_THE\\_AGE\\_OF\\_GLOBALIZATION](https://www.academia.edu/42617660/THE_POLITICAL_ECONOMY_OF_TECHNOLOGY_TRANSFER_AND_THE_CHALLENGES_OF_DEVELOPMENT_IN_NIGERIA_IN_THE_AGE_OF_GLOBALIZATION)> accessed 02 February 2023.

<sup>35</sup>UN Ndukwe, *An Analysis of the Barriers to Technology Transfer in Nigeria* (2017) *Journal of Economics and International Finance*, 9(7), 1-10.

protection and collaboration and networking among local businesses, entrepreneurs, and researchers.

#### **4A Prospects for Accelerating Transfer Of Technology to Local Industries in Nigeria**

One of the key opportunities for promoting technology transfer in Nigeria is through foreign direct investment (FDI).<sup>36</sup> FDI refers to investments made by foreign companies in local businesses, and it can take the form of joint ventures, partnerships, or direct investments. Foreign companies bring with them not only capital, but also technology, management skills, and access to international markets. This can lead to the transfer of technology to local industries, as well as the creation of new jobs and income. Another opportunity for promoting technology transfer in Nigeria is through partnerships with international organizations and institutions. Nigeria has a number of bilateral and multilateral agreements with other countries and organizations, such as the United Nations, the World Bank, and the European Union. These agreements provide opportunities for collaboration and the transfer of technology, skills, and expertise. For example, the World Bank's International Finance Corporation (IFC) has a program to support the development of small and medium-sized enterprises in Nigeria, which can help local businesses access new technologies and markets.<sup>37</sup>

In addition, the Nigerian government can play a role in promoting technology transfer by creating a favorable business environment and investing in infrastructure and education. A supportive business environment, including a stable political and economic climate, can attract foreign investment and encourage local businesses to invest in new technologies. The government can also invest in infrastructure such as power, transportation and telecommunications to make it easier for businesses to access new technologies and markets. Furthermore, the government can also invest in education and training programs to help local industries acquire the necessary skills and expertise to adopt new technologies. This can include training programs for workers, as well as research and development programs for businesses. This can help local industries become more productive and competitive, and it can also create new jobs and income.

#### **5. Recommendations**

In Nigeria, technology transfer can play a vital role in helping to address the country's challenges in areas such as agriculture, healthcare, and infrastructure. Here are some recommendations for how technology transfer can be effectively implemented in Nigeria:

<sup>36</sup>Abubakar Yusuf Dutse, *Nigeria's Economic Growth: Emphasizing the Role of Foreign Direct Investment in Transfer of Technology* (Researchgate, 12 January 2008) <[https://www.researchgate.net/publication/45492000\\_Nigeria's\\_Economic\\_Growth\\_Emphasizing\\_the\\_Role\\_of\\_Foreign\\_Direct\\_Investment\\_in\\_Transfer\\_of\\_Technology](https://www.researchgate.net/publication/45492000_Nigeria's_Economic_Growth_Emphasizing_the_Role_of_Foreign_Direct_Investment_in_Transfer_of_Technology)> accessed 02 February 2023.

<sup>37</sup>Olushola Bello, 'IFC, FSDH Sign \$35m Deal to Support Businesses in Emerging Markets' (Leadership, 11 05 December) <<https://leadership.ng/ifc-fsdh-sign-35m-deal-to-support-businesses-in-emerging-markets/>> accessed on 02 February 2023.

### **5A. Develop a National Technology Transfer Policy:**

A national technology transfer policy will outline the goals and objectives of technology transfer, the roles and responsibilities of government and private sector organizations, and the regulations and guidelines for technology transfer activities. This clarity will help to ensure that technology transfer activities are carried out in a consistent and coordinated manner. Secondly, a national technology transfer policy will provide incentives for technology transfer activities. For example, the policy can provide tax incentives, subsidies, and other financial support to organizations that are involved in technology transfer activities. This support will help organizations to overcome the barriers and challenges that are associated with technology transfer, such as high research and development costs, complex regulatory processes, and limited access to finance.

Thirdly, a national technology transfer policy can foster collaboration between organizations in different sectors. For example, universities, research institutions, and private sector companies can work together to identify areas where technology transfer can help to promote economic growth and development. This collaboration will help to ensure that technology transfer activities are focused on the most pressing needs of the country. Finally, a national technology transfer policy can help to improve the capacity of organizations to engage in technology transfer activities. For example, the policy can provide training and support to organizations to help them develop the skills and knowledge they need to engage in technology transfer activities effectively. This improved capacity will help organizations to participate more fully in the technology transfer process, and will increase the overall effectiveness of technology transfer in Nigeria.

### **5B. Establish Technology Transfer Offices:**

Technology transfer offices (TTOs) play a crucial role in facilitating the transfer of technology from academia to industry. In Nigeria, the establishment of TTOs can significantly promote technology transfer and drive economic growth. First and foremost, TTOs help to bridge the gap between academia and industry by facilitating communication and collaboration between the two. They provide a platform for researchers to engage with industry and promote their technology innovations. TTOs also assist in the commercialization of academic research by helping researchers to secure funding, licenses and patents, and connect with potential investors.

Another benefit of TTOs is that they help to spur innovation and entrepreneurship in the country. By providing researchers with access to funding, resources, and networks, TTOs help to create a supportive environment for entrepreneurs to bring their ideas to market. This in turn, drives economic growth and job creation. In order for TTOs to be effective in promoting technology transfer, there are certain strategies that need to be put in place. Firstly, there must be a clear and well-defined mandate for the TTO. This should include a focus on technology transfer, commercialization and innovation. Secondly, the TTO should be adequately staffed with individuals who have a strong background in technology transfer, commercialization and innovation. Thirdly, the TTO should be well-

funded and have access to adequate resources to enable it to effectively carry out its mandate.

### **5C. Encourage Collaboration between the Academia and the Industry**

Collaboration between academia and industry is an effective way of promoting technology transfer in Nigeria. By combining the strengths of both sectors, significant advancements can be made in research, development and commercialization of new technologies. Academia has the necessary expertise and knowledge to conduct research, while industry has the resources and infrastructure to bring new technologies to the market. When the two work together, technology transfer can occur more efficiently, and new products and services can be developed to meet the needs of the local market.

In Nigeria, there is a gap between the research being conducted in universities and its application in industry. To bridge this gap, academia and industry must establish partnerships to support technology transfer. This can involve setting up joint research projects, internships and knowledge sharing programs, and providing funding for research and development. Furthermore, government support and policies can play a critical role in fostering such collaborations. For instance, the Nigerian government can create tax incentives for companies that invest in research and development, and provide funding for joint academic-industry projects. The government can also establish technology transfer offices within universities to facilitate the process of commercializing new technologies.

### **5D. Invest in Infrastructure and Human Capital:**

For technology transfer to be successful, Nigeria must invest in the necessary infrastructure and human capital. Investment in infrastructure and human capital plays a critical role in facilitating technology transfer. Both these factors provide the necessary foundation for technological advancements to take place and for innovations to be adopted and scaled. Infrastructure refers to the physical and technological systems that support economic and social development. It includes transportation, communication, energy, and water systems. A well-developed infrastructure can enable the seamless transfer of technology by providing the necessary infrastructure to support the transfer of technological knowledge, goods, and services. Improved transportation and communication systems, for example, can help increase the speed and efficiency of technology transfer and make it easier for firms to access new technologies.

Human capital, on the other hand, refers to the knowledge, skills, and abilities of individuals.<sup>38</sup> Investing in human capital can help facilitate technology transfer by increasing the pool of individuals who are capable of using, adapting, and developing new technologies. This can be achieved through education and training programs that focus on developing the skills needed to use and integrate new technologies into existing systems and processes. By increasing the number of individuals who have the necessary skills and

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<sup>38</sup> Will Kenton, *Human Capital Definition: Types, Examples, and Relationship to the Economy* (Investopedia, July 12, 2022) <<https://www.investopedia.com/terms/h/humancapital.asp>> accessed on 02 February 2023.

knowledge, organizations can more effectively adopt and use new technologies, leading to increased productivity and competitiveness. Investing in both infrastructure and human capital can also help create a supportive environment for technology transfer. For example, a well-educated workforce can lead to increased research and development activities, which can, in turn, lead to the creation of new technologies. A supportive infrastructure can help reduce barriers to entry and make it easier for firms to adopt new technologies.

### **5E. Promote Entrepreneurship:**

Promoting entrepreneurship can be a powerful tool for promoting technology transfer in Nigeria. Entrepreneurs are typically willing to take risks, experiment with new ideas and technologies, and are highly motivated to succeed. By encouraging and supporting entrepreneurship, the government can help to foster the growth of new and innovative businesses, many of which can help to spur the transfer of technology from more developed countries to Nigeria. One of the key ways in which the government can promote entrepreneurship is by providing financial support. This can include loans, grants, and tax incentives to start-ups and small businesses. Additionally, the government can provide training programs to help entrepreneurs develop the skills and knowledge needed to successfully run a business. This training can include topics such as marketing, financial management, and product development.

Another important aspect of promoting entrepreneurship is to create a supportive business environment. This can be done by reducing bureaucratic barriers to entry, providing access to capital and mentorship, and encouraging collaboration between businesses. The government can also work to create a regulatory framework that is supportive of entrepreneurship, such as a legal system that is predictable, transparent, and fair. Finally, the government can play a role in facilitating technology transfer by encouraging partnerships between Nigerian entrepreneurs and international companies. This can be done by setting up trade missions, hosting trade shows, and promoting cross-border collaborations. The government can also help to foster a culture of innovation by promoting technology transfer through education, encouraging scientific research, and by providing incentives for private sector investment in technology.

### **5F. Protect Intellectual Property**

Intellectual property (IP) protection plays a crucial role in promoting technology transfer, especially in developing countries such as Nigeria. By safeguarding the rights of inventors, innovators, and creators, IP protection encourages the development and dissemination of new technologies and knowledge. First, IP protection gives innovators the necessary incentives to invest in research and development (R&D) activities. Without the assurance that their innovations will be protected, entrepreneurs and companies may be less likely to invest in R&D, which is often a long-term and costly process. With IP protection in place, innovators have the confidence to invest in R&D and bring their products to market. Second, IP protection helps to facilitate the transfer of technology by creating a level playing field for businesses. By providing a framework for licensing and commercializing IP, IP protection ensures that technology transfer agreements are clear, enforceable, and transparent. This, in turn, creates a more stable and predictable business

environment, which is essential for technology transfer to occur. Third, IP protection enables the development of a robust technology market in Nigeria. By protecting the rights of inventors and innovators, IP protection creates a marketplace where technology can be bought and sold, providing the necessary conditions for technology transfer to occur. Moreover, IP protection can help to increase the flow of foreign investment into Nigeria, as companies are more likely to invest in a country with strong IP protection.

## **6. Conclusion**

The concept of technology transfer under the Nigerian legal frameworks for indigenization is a complex and nuanced issue that requires careful consideration and review. The Nigerian government has taken steps to encourage the transfer of technology from foreign entities to local businesses, through various policies and initiatives. However, there are still gaps in the legal framework that need to be addressed to ensure that technology transfer occurs in a manner that benefits both foreign entities and local businesses. The legal review of technology transfer must take into account the existing laws and regulations governing foreign investment, intellectual property rights, and technology transfer in Nigeria. This review must also consider the best practices of other countries and the lessons learned from past experiences. With a strong legal framework in place, technology transfer can play a crucial role in helping Nigeria achieve its goals of economic development, technological advancement, and self-sufficiency. In summary, the legal review of the concept of technology transfer under the Nigerian legal frameworks for indigenization must be approached with a focus on finding practical and effective solutions that will benefit both foreign entities and local businesses. With the right policies in place, technology transfer can play a vital role in helping Nigeria achieve its aspirations for a better future.